## THE <br> BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION



SOME MINOR FRENCH CHÂTEAUX DEVELOPMENT OF THE GREEK DORIC STYLE POMPEIAN BRONZES
FRENCH RENAISSANCE FIREPLACES

> BATES AND GUILD COMPANY BOSTON MASS.


# The Laughlin-Hough Patent Drawing Tables. 

Why injure your back and vital organs, reaching and straining over the old-fashioned Drawing Board with T and Angle Squares?
With the Laughlin-Hough Board you can sit or stand in a comfortable position and instantly draw lines of any degree in a natural way.
Why twist and squirm and perform all manner of contortions over your Board to reach your work?
The Laughlin-Hough Board will do all this hard labor for you and bring your work to you at once, leaving you in a natural, easy position.
It is as easy to draw an angle line as a horizontal one. Board can be instantly set to any degree, and absolutely accurate work is insured.

Endorsed by World's Experts. Awarded Medal and Diploma at Philadelphia Export Exposition. Send for handsome illustrated catalogue. LAUGHLIN-HOUGH CO., 134 WEST 14th STREET, NEW YORK.

# STRATHMORE Illustrating Board 

 For WASH DRAWING and WATER COLORS
## " MITTINEAGUE PAPER CO.

I beg to acknowledge receipt of your favor of June 6 , and receipt of the Strathmore Illustrator's Board. Since receiving the Drawing Board I have tried it and with great success. The fact that it is of American manufacture, and that I shall use it largely hereafter, would be my highest commendation. Thanking you very much, I am, Yours very truly,
B. WEST CLINEDINST."

WRITE FOR SAMPLE BOOK
Mittineague Paper Company MITTINEAGUE, $\otimes \otimes$ MASS., U.S.A.

# The BROCHURE SERIES of architectural illustration 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS

SUBSCRIPTIONS: Subscription price, $\$$ r.oo a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, \$1.50. Single copies, ro cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896 \$ 2.50$; for 1897,1898 and $1899, \$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for $1896 \$ 3.50$; for 1897,1898 , 1899 and rooo, $\$$ r. 75 each. Subscribers copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January, 1898, January and May, 1899 and September, 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## BROCHURE SERIES

## Competition "P."

MANY photographs, some of them of unusual interest, were submitted in "Brochure Series Competition P." The Prize Awards are as follows: First prize to Mr. R. F. Jackson of Brookline, Mass., for a set representing " Greek Doric Architecture." (These photographs are reproduced in the present issue.) Second prize to Mr. Antony P. Valentine, Jr., of Philadelphia, Pa ., for a set representing "English Country Church Exteriors." Third prize to Mr. L. M. Bacheller of Lynn, Mass, for a set representing the "Opera House, Paris." The second and third prize photographs will be reproduced in the February and March numbers of this SERIES, respectively.

In addition to the prize awards, the judges have accorded Honorable Mentions for photographs submitted by the following:-

Mr. Bayard Turnbull, Baltimore, Md.; two sets, subjects, "Milan Cathedral"; "Planning and Adornment of Grounds." Mr.' Charles H. Muhlenberg, Reading, Pa.; two sets, subjects, "Moorish Architecture of North Africa, Interiors and Exteriors." Mr. Antony P. Valentine, Jr., Philadelphia, Pa.; three sets, subjects, "Picturesque England"; "Details from Italian ,"Gardens"; "English Country Church Interiors." Mr. Holmes Smith, St. Louis, Mo.; subject, "Construction and Detail of Greek Doric Architecture." Mr. William Martin Aiken, New York City ; subject, " Mexican Architecture." Mr. W. Gedney Beatty, New York City; subject, "Ruins of Baalbec." Miss Alice Wight Alden, Newtonville, Mass.; subject, "Wooden Architecture of Switzerland." Mr. William F. Paunack, Madison, Wis. : subject, "Milan Cathedral." Mr. R. S. Whiting, Salem, Mass.; subject, "English Cathedrals." Mr. George B. Wood, Staten Island, N.Y.;
subject, " Manior d'Ango, Normandy." Mr. J. W. Dow, Wyoming, N.J.; subject, "Colonial Door-ways of Bristol, R.I." Miss Eleanor G. Hewitt, New York City; two sets, subjects, "17th Century Venetian Country Palace"; "rith Century Venetian Garden." Mr. L. M. Bacheller, Lynn, Mass. ; subject, "Notre Dame, Paris."

## Leonardo da Vinci.

The February issue of MASTERS IN ART is of unusual interest. We quote the following from it, printing in italics the subjects that have been reproduced.
"There remain in the world but five known pictures which are without dissent assigned to Leonardo da Vinci. So far as we know, no voice has yet been raised to question the authenticity of the ruined 'Last Supper,' the unfinished 'Mona Lisa,' and the but just begun 'Adoration of the Magz.' In addition to these are the cartoon study for the 'St Anne' in Burlington House, London, and the barely outlined monochrome sketch of 'St. Jerome' in the Vatican Gallery. Endless controversy has raged and still rages over the authorship of the 'St. John,' the 'Virgin of the Rocks,' and the 'St. Anne,' in the Louvre, and the angel in Verocchio's 'Baptism,' in the Academy at Florence. The greater number of authoritative modern critics are now, however, disposed to admit these as a genuine ; while, on the contrary, they consider that the 'Virgin of the Rocks' in the National Gallery, the 'Belle Féronnière,' in the Louvre, and the 'Portrait of an Unknown Princess,' in the Ambrosiana at Milan, are not Leonardo's work, although each of them has its stout partisans. Other paintings formerly attributed to Leonardo da Vinci seem to, have no just claim to be reckoned as his work."
Single copies will be sent flat for fifteen cents, or may be obtained from leading newsdealers.

## The Architectural Review for JANUARY, 1901



The Longleat Flower Garden. By Rose Standish $\mathcal{E}$ (ichols A typical English garden considered in general arrangement, detail, and in relation to its position and surroundings, from the point of view of the landscape architect. An example in the design of formal gardens Eleven illustrations (photographs and plans).
English Half Timber Architecture. By Robert Brown
A study of the timber-and-plaster architecture of England, its development and its characteristics. Illustrated with drawings by the author and photographs.
Washington University, St. Louis. By Cope Ef Stewardson
The plates of this issue are devoted wholly to the carefully studied drawings for this important group of buildings.
In Addition to the above mentioned features
The regular editorial and critical departments will as usual be found full of interest, the review of current magazines being liberally illustrated.

The yearly subscription is $\$ 5.00$; single copies are 50 cents. The paper is mailed flat. The attention of draughtsmen and students is called to our plan for installment subscriptions, particulars of which will be furnished on request
Bates 8 Guild Company, Pubs., 42 Chauncy St., Boston

## THEATRES

Their Safety from Fire and Panic; their Comfort and Healthfulness

> By William Paul Gerhard, C.E.

THE provisions for the safety, comfort and health of the occupants of theatres are subjects of unquestioned importance. Mr . Gerhard is the leading American authority on these subjects and has devoted years to their study, the fruit of which is given in the present work.

T
HE author takes up in detail the question of safety and shows means by which present unsatisfactory conditions may be remedied, and discusses the following topics: means of escape; measures tending to prevent fire and for quickly detecting and signaling one which may occur; protection of the audience and stage personnel from fire and smoke; localizing and restricting fire; means for saving life, fighting fire and guarding against panic. Under comfort and sanitation the following topics are treated in like manner: the unsanitary condition of theatres; ventilation, heating and lighting; floors, floor coverings, walls, ceilings and furniture ; dressing rooms ; drainage, plumbing and water supply; removal of refuse ; cleaning, dusting and sweeping; and periodical sanitary inspection. manager, building and fire department, and in all public libraries. Size 6x9 inches, IJO pages, bound in green cloth.

## Price, \$1.00, Postpaid <br> BATES \& GUILD CO., 42 Chauncy St., Boston

## Two Good Books on English Architecture

## Details of Gothic Architecture in England

Measured and Drawn from existing examples of the XIIth, XIIIth,
XIVth and XVth Centuries by James K. Colling, F. R. I. B. A.
The examples have been carefully selected from all parts of England, and are of especial interest as representing in great part the architecture of Parish Churches, many of them but little known. The examples include work from the Norman, Early English, Decorated and Perpendicular Periods (which all receive a fair share of attention), and show a fine series of Windows, Piers and Arches, Clerestories, Capitals, Compartments and Sections of Naves and Chancels, Etc., Arcades, Doors and Doorways, Towers, Roofs, Canopies, Fonts, Pulpits, Screens, Panerling, Pews, Piscinæ and Sedilia, Etc., with Sections, the respective mouldings, and contemporary Metalwork of various descriptions.
TWO VOLS. CLOTH BOUND, ( $12 \frac{1}{2} \times 91 / 2$ INCHES) 190 PLATES; PRICE $\$ 18.00$

## An Analysis of Ancient Domestic Architecture in Great Britain

Showing some of the finest existing examples from drawings and measurements taken on the spot by F. T. Dollman, F. R. I. B. A.
This comprehensive work is unrivalled for its faithful illustrations of some of the most beautiful specimens of English Mediæval Domestic Architecture; the very careful measured drawings of details make it an invaluable adjunct to any collection of photographs of old English houses. Every period will be found well represented; masonry and timber-work contribute about an equal number of specimens, some of the half timbered houses being among the finest in England, and even Gothic brickwork, so rarely to be seen, has its share of illustration.
TWO VOLS. HALF BOUND, ROXBURGH STYLE ( $121 / 2 \times 91 / 2$ INCHES) 161 PLATES WITH TEXT, PRICE \$18.00

The above works, the first published in 1852, the second in 186r, have been reprinted in small editions from the original plates by B. T. Batsford of London. A few copies can be supplied by

## Bates \& Guild Company, Boston, Mass.


"IT HAS TAUGHT ME ALL THAT A TEACHER COULD HAVE TAUGHT - HOW TO BEGIN RIGHT, HOW TO AVOID DIFFICULTIES, AND THE 'TRICKS OF THE TRADE.',

Pen Drawing<br>Charles D. Maginnis

(8)NLY practice will make an accomplished pen-draughtsman; but this little treatise teaches whatever can be taught of the art ; namely, how to practice, what "style" is and how to attain it, what pens, inks and papers have been found most serviceable, how to use line and hatch, how to produce textures and to represent various surfaces, values and colors, how to depict and treat details, - in a word, imparts a knowledge of all the ways, means and processes that experience has proved useful. The key-note of the book is practicality. Each of the 72 illustrations is a specific example of some important method. It is written interestingly and clearly. With this treatise at his elbow the draughtsman can make most valuable use of his spare minutes.

## Price, $\$ 1.00$, Postpaid

THE BOOK MEASURES $71 / 2 \times 5$ INCHES, CONTAINS 130 PAGES AND 72 ILLUSTRATIONS, IS PRINTED ON HEAVY PAPER AND BOUND IN GRAY CLOTH. SECOND EDITION.

THE BROCHURE SERIES.


MAGNESIA, 85 PER CENT.
${ }^{15}$ PER CENT ASBESTOS FIBRE.
Architects and Consulting Engineers
Who want a Safe, Permanent
Steam Pipe and Boiler Covering
And one that will save most heat - most coal-most money; one that will pay for itself in a very short time, and prove a most economical investment; one entirely free from such injurious compounds as PLASTER of PARIS, a material composing, to the extent of about 80 per cent to 90 per cent, most of the moulded coverings sold as Standard Asbestos, Asbestos-Magnesia, etc., should use $* * *$

## MAGNESIA sectional COVERING

85 per cent Pure Carbonate of Magnesia and 15 per cent of Good Asbestos Fibre.
SAFE. * RELIABLE. * EASILY APPLIED. * VERY LIGHT.


Keasbey ©f Mattison Company,
AMBLER, PENNA. SELLING AGENCIES IN ALL LARGE CITIES.

## KEUFFEL \& ESSER CO.

127 Fulton Street, New York.<br>Branches: III Madison Street, Chicago. 708 Locust Street, St. Louis.

## Drawing Materials, Mathematical and Surveying Instruments.



Our Duplex, Universal, Anvil, Paragon and Normal Papers are the best of their kind and grade. These papers cannot be obtained under any other name. Their reputation has brought into the market numerous imitations, many of which are offered under deceptive names. Do not accept substitutes and see that the papers you buy are watermarked with their correct name along the edge.

SOME MINOR FRENCH CHATEAUX
DEVELOPMENT OF THE GREEK DORIC STYLE

POMPEIAN BRONZES
FRENCH RENAISSANCE FIREPLACES


# THE <br> Brochure Series 

OF ARCHITECTURAL ILLUSTRATION
1901
JANUARY
NO. 1

## SOME MINOR FRENCH CHÂTEAUX

|T IS related of Alaric, the leader of the Visi-Goths, that when, with his horde of barbaric, half-starved Teutons, he had sacked Rome, he looked about on the splendor of the fallen city, and exclaimed to one of $h$ is companions: "We have conquered: now we shall live!" The story is, of course, apocryphal, but it may well indicate the feelings of such a one, who, nurtured in the cold hard life of the north, among sombre forests, suddenly found himself in the presence of a complete, luxuriant and magnificent civilization, adapted to satisfy to the uttermost every human desire.

Something like this feeling may have come over the French monarchs who invaded Italy at the end of the fifteenth century. In France the middle ages had come to an end; the Gothic influence had run its splendid course; the
passionate and sincere piety that had been the mainspring of activity was relaxed; and men were restless, expectant, eager for change, waiting all unconsciously for some new impulse to again quicken the national life. This new impulse came through the contact with a superior and matured civilization, - the supreme culture of the Italian Renaissance.

In 1492 the French king, Charles VII., invaded Italy, and, after a brief campaign, temporarily conquered Naples, to which he pretended hereditary claims. This first contact with Italy was short, but sufficient to leave the French amazed, dazzled, bewildered, and irresistibly eager to return. The spell of desire was upon them. A year had hardly passed before they again crossed the Alps. Lator, Charles' successor, Louis XII., added




Milan to the French dominions; and still later, after the expulsion of the French from Italy by the Holy League, Francis I. again invaded the peninsula and recovered that city. All of these incursions were accomplished during a brief period of thirty-four years.

The French kings and nobles returned to their country, foiled in their intended objects and dishonored in the eyes of nations by their treachery; but yet they had done a thing of far more ultimate consequence than any attainment of territory, howsoever rich,- they had come into contact with the Italian Renaissance in all the glory of its crowning splendor, and from that contact they had received an impetus, the fruit of which was to be nothing less than a French Renaissance. Once having seen how rich and how beautiful life might be made, they longed for that enriched and adorned life with the incalculable longing engendered by dark ages of repression and restraint; and the key-note of the Renaissance in France is echoed in the cry of the poet Villon, "Let us now live for the joy of living!"

Indeed this desire for the enrichment of life was the foundation and motive of what we call the 'Renaissance movement' everywhere,-in Italy as well as in France. The thing does not, as has so often been assumed, denote merely a revival of classical antiquity in art and letters, but a whole complex revivification, of which that classical revival was but one element or symptom. As Walter Pater has said, "The 'Renaissance' is but the name of a many-sided but yet united movement, in which the desire for a more liberal and comely way of conceiving life made itself felt, urging those who experienced this desire to search out first one and then another means of enjoyment, and directing them not merely to the discovery of old and forgotten sources of this enjoyment, but to the divination of fresh sources thereof - new experiences, new subjects of poetry, new forms of art."

The prompt outward manifestation of this desire for an enriched and enfran-
chised mode of life was, in France, the immediate upspringing throughout the land of numberless splendid châteaux; no longer moated fortresses for protection and defence, but places of delight, set in ordered gardens, " lieux de plaisance," as they were significantly called, which should be adapted to minister in the highest degree to the new and delightful way of life upon which the nation breathlessly proposed to enter. One of the very first acts of Francis I. after his return from Spain was the destruction of the great tower of the old Louvre, that he might change that fortress into a palace of pleasure.

The state of the country was propitious for the especial manifestation of the new impulse in the form of domestic architecture. The power of the kingdom had been centralized, and lay in the hands of the king and the many great nobles and prelates of his court, who had grown both wealthy and powerful. All the impulse of the revival was free to expend itself in domestic architecture alone, because France was already completely supplied with churches, a heritage from the Gothic times. And so king, nobles and prelates began to vie with each other in the erection of beautiful residences; and all over France numberless châteaux arose, erected in feverish haste, while the old feudal castles were trimmed anew and put into festival attire by the addition of delicate classical details.

The national architecture was not, however, to be so suddenly transformed as was the life. In an architectural upheaval of this sort, interiors and details of decoration are the first to feel the influence of the new style, which only gradually creeps into and transforms the fundamental lines of the exterior. Francis I. had imported from Italy numerous eminent architects, decorators and sculptors, whose task it was to teach the native workmen the Classic forms which seemed to be so component a part of the Italian civilization that he aimed to imitate; but the French had inherited too glorious architectu-



ral traditions to be willing or able to cast them off at a word of command ; and there were, moreover, national and climatic conditions involved, with which the trans-Alpine builders were not prepared to cope. The change from Gothic to Classic was retarded, too, because the last developments of the French Gothic were still so vital, so rich and joyous in effect, that their forms were admirably adapted to the building of pleasure palaces of the most exuberant sort. Moreover, most of the French manors were erected in the country, in contrast to the Italian fashion of building in towns, and the picturesqueness of the Gothic was more in keeping with rural surroundings. The country châteaux being seen from all sides, the necessity of a picturesque grouping from every point of view was given more weight, and the importance of the façade was less insisted upon in France than in Italy.

In consequence, the architecture of the early French Renaissance underwent a protracted transitional stage,
during which the national and surviving Gothic forms were picturesquely mingled with those of the Classic; and though from the first the Italians successfully introduced many classical elements and details, they were long dominated by their French confrères in planning and in general composition.

It will be evident, then, that the architecture of the earlier Renaissance in France is wholly unlike the contemporary architecture of Italy from which its impulse sprung ; and from which it at first adopted only minor details and a certain largeness of breadth and spirit; and, speaking broadly, we may say that the majority of the early French Renaissance châteaux are, after all, but irregular Gothic castles, adorned with a coating of Renaissance detail, whose predominant characteristics are still picturesqueness, irregularity and a tendency to Gothic verticality, in contradistinction to the main features of contemporary Italian architecture, which were stateliness and horizontality.

## THE DEVELOPMENT

## OF THE GREEK DORIC STYLE

THE following illustrations of Greek Doric architecture are reproduced from the first-prize set of photographs, submitted in Brochure Series Competition "P," by Mr. R. F. Jackson of Brookline, Mass. The announcement of the award of prizes in this competition will be found on an advertising page of this issue.

The ten examples shown illustrate admirably the character and development of the oldest and strongest of the three Greek orders, the Doric, which was in its external forms, the simplest of all; but, in the most perfect examples combined solidity and force with the most subtle and delicate refinement of outlines and proportions that architecture has known. A characteristic of the Grecian Doric column is the absence
of a base; the channelings are usually twenty in number, and in section approximate to a semi-ellipse. The capital has generally no astragal, but one or more fillets or annulets separate the channeling from the echinus. The profile of the capital, in the best examples, is a carefully studied eccentric curve, neither flat enough to be hard in effect, nor full enough to be weak. The echinus prior to the period of perfection spread out far beyond the shaft; the later Greeks made it a frustum of a cone. In good Greek examples, as a rule, no horizontal lines are found in a Doric building, floor- and cornice-lines being curved slightly upward; the profiles of the column-shafts slightly convex, and all columns slightly inclined toward the centre of the building.

I.-GREEK DORIC ARCHITECTURE
temple of corinth. archaic period. hexastyle and peripteral. columns have ib flutes. note heavy entablature. triglyphs on cella wall. Seventh century, b.c.

II. - GREEK DORIC ARCHITECTURE
temple of ceres, paestum. archaic period. hexastyle and peripteral. columns have zo flutes. SIXTH CENTURy, b.c.

III.-GREEK DORIC ARCHITECTURE
so Called " basilica" at paestum. archaic period. nonastyle and peripteral. shape of capitals peculiar to this temple. sixth century, b.c.

IV.-GREEK DORIC ARCHITECTURE
interior of "basilica" at paestum. archaic period. showing row of columns peculiar to this temple, dividing it into two halves, thus forming two cellae.

V.-GREEK DORIC ARCHITECTURE

TEMPLE OF NEPTUNE, PAESTUM. ARCHAIC PERIOD. HYPAETHRON (CELLA OVER SACRED IMAGE EXPOSED),
HEXASTYLE AND PERIPTERAL. NOTE SUPERIMPOSED COLUMNS SUPPORTING

VI.-GREEK DORIC ARCHITECTURE

INTERIOR OF THE TEMPLE OF NEPTUNE AT PAESTUM SHOWING ARRANGEMENT OF SUPERIMPOSED
COLUMNS. ARCHAIC PERIOD. SIXTH CENTURY, b.C.

VII.-GREEK DORIC ARCHITECTURE
temple at segesta. transitional period. hexastyle and peripteral. this temple was never COMPLETED, AS THE UNFLUTED COLUMNS TESTIFY.


VIII-GREEK DORIC ARCHITECTURE
temple of concord, girgenti. transitional period. hexastyle and peripteral. fifth CENTURY, b.c.

IX.-GREEK DORIC ARCHITECTURE
so Called "theseum" at athens. late transitional period. hexastyle and peripteral. remarkable for refinement of proportions and details. fifth century.

X.-GREEK DORIC ARCHITECTURE
the parthenon, athens. golden or periclean age. octastyle and peripteral. fifth century, b.C. THE ACME of ARCHITECTURE.

## POMPEIAN BRONZES

WE cannot hope that we have in the relics from Pompeii remarkably excellent specimens of ancient art, for the noblest creations of art in any period are to be looked for in the great centres of population, and Pompeii was but a small commercial town, just saved from provincialism by the maritime traffic which brought to it the fashions of the greater cities in art, religion and life. Any one of fifty similar towns might have been overwhelmed in its place, and the results, so far as our knowledge of ancient culture is concerned, would not have been essentially different. But the remains from Pompeii are of greater value because they are representative rather than exceptional, and because they are broadly typical of the civilization of which they formed a part; and the wealth of artistic types remaining in architecture, in bronzes and in wall painting, after all the removal and all the destruction, bears

incontrovertible witness to the universality of art in the Greco-Roman world.

The reason that more relics were not found when the city was excavated is that the excavators were forestalled; for shortly after the eruption the surviving


BRAZIER
NAPLES MUSEUM
inhabitants undertook to recover their buried treasures, digging down from the surface, and tunnelling from room to room underneath. Only infrequently is a house discovered that was left undisturbed.

The best idea of what the Pompeian

private house of the better class really was, can be obtained from the House of the Vettii, of which the open peristyle - the chief architectural feature of the house, around which the other rooms were grouped-is shown, with its garden,

in our illustration, page 18 . The columns of this peristyle were well preserved, the roof has been restored from the ancient fragments, and the garden has been planted with shrubs in accordance with the arrangement indicated by the appearance of the ground at the time of the excavation. Part of the house was searched for objects of value after the eruption, but the garden was fortunately left undisturbed, and we see in it today the fountain basins, statuettes and other sculptures as they were placed there by their proprietor. At either end stand oblong marble basins, into which jets of water played from bronze statuettes, representing boys holding ducks, from the bills of which the water spurted. Near the middle of the garden is a round marble table, flanked by two pillars bearing mythological busts.


Few remains of large house-furniture have been found at Pompeii. Beds, couches, chairs and tables were ordinarily of wood, which has crumbled away; but a richer heritage has come down to us of such articles of household use and decoration as were made of bronze, clay, glass or stone. Among these are bronze stands of various sorts, lamps and lampstands in numbers, kitchen and table utensils and toilet articles.

The small table-like stands of bronze, supported by three slender legs, such as those shown on pages 17 and 19 , were called tripods. The one with the basinlike top was probably used as a brazier to hold live coals. The others were, it is probable, used as tables, the deep rim surrounding the top and making them convenient receptacles. There can, of course, be no question as to the use of


HANGING LAMP
NAPLES MUSEUM


LAMPS AND STANDARDS
NAPLES MUSEUM

the small bronze table shown on page ig.
Lamps are found in great variety. The essential parts were merely a body to hold the oil, which was poured in through an opening in the top, and a nozzle with a hole for a wick. The opening for the admission of oil was usually closed with an ornamental cover. The name of the maker or designer is often stamped upon the bottom of the bowl. Lamps were of two kinds: hanging lamps and hand lamps, the latter, like those shown at the bottom of this page, often of elaborate workmanship and supplied with decorated bases. The bronze lamp-standards and candelabrums are among the most gracefully proportioned and beautiful of Pompeian relics. Those which were designed to support a single lamp, are usually tall, slender shafts, rising from three feet which are modelled to represent the claws and feet of animals, and terminated by a more or less ornamented disk, on which the lamp was placed. They were often adjustable, the upper part sliding up and down in a hollow shaft, so that the height could


LAMPS
NAPLES MUSEUM
be changed. These single lamp-standards were elaborated, usually by the addition of spreading branches (often of conventionalized tree forms), and by making the base proportionally wider and heavier, into candelabrums from which a number of lamps might hang.

Other Pompeian relics, lamps and stands, furniture ornaments, etc., were illustrated in this Series, August, 1899.

FRENCH RENAISSANCE FIREPLACES


FRENCH RENAISSANCE FIREPLACES


S'GVTdAYIG 马ONVSSIVNGY HONA甘A


FIREPLACE: FRANCIS I. SALON

## 80 New Photographs

of Exteriors and Interiors of Small

## English Country Houses and

## Churches

THE constantly increasing demand amongst progressive architects for photographs of the smaller English country houses and churches of good architecture combined with the typical picturesque surroundings, has led me, the past few months, to make a thorough canvas amongst English photographers who make
 a specialty of this class of work. As a result, I have secured 80 plates a specialty of this class of work. As a result, I have secured 80 plate every one a mathe harene subjects


The size of plates is $61 / 2$ inches by $81 / 2$ inches. They have been printed on the new platinotype paper, in the soft black and white effects, and are guaranteed thoroughly permanent.

The above set of 80 photographs contains no duplicates of the set of " ioo photographs of English Country Houses, etc," which I have suld the past two years in nearly every State in the Union.
 will be sent to any address by PREPAID REGISTERED MAIL.

## EDWARD J. JONES, Jr.

Dealer in Architectural Photographs of every Description.

A sample set of these photographs can be seen at " Brentano's," 218 Wabash Ave., Chicago, who have the exclusive sale of them for that city.


Winslow, Wetherell \& Bigelow, Arch'ts, Boston.

## Cabot's <br> Shingle Stains

-FOR HOUSES, BARNS, STABLES, SHEDS, FENCES,
and all rough woodwork, especially shingles. They are softer and richer in color, easier and quicker to apply, wear better, look better, and are 50 per cent cheaper than paint. Creosote, the chief ingredient, is the best wood preservative known.

Samples, etc. sent on request ; also set of plates of Suburban Houses if desired.
SAMUEL CAB0T, 70 Kilby St., Boston, Mass. Agents at all Central Points.
Sheathing "Quilt"-better than back=plaster.


## Fireplace Mantels <br> $\$ 12.00$ and up.

## Made of Ornamental Brick

in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it.
Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co.
P.O. Box 8929.

Boston, Mass.

## PARQUUET

We have representatives and stocks of floors in the leading cities. Write for Prices and Book of Designs.

THE $\operatorname{INTERIOR~HRRDWOOD~CO.,~MIanfis.~}$
INDIANAPOLIS, IND.

## PLAIN OR

 ORNRIIENTHLThick or Thin

## Carter's Liquid India Inks

ARE THE

## BEST



Try them, and you will find that The Richness of their Colors,

The Ease with which they Flow, The Blue Print and Tinting Qualities make them

## ABSOLUTELY SUPERIOR

to all other similar inks in the market. The inks are true solutions (not mixtures in suspension), excepting the black, and are absolutely waterproof. Important features are the style of bottle (as in cut), the improved feeder and the specially prepared chamois wiper.
THE CARTER'S INK CO., BOSTON, MASS.

## For <br> Lighting Store Windows

Specify Frink's Special Patent Window Reflector, the only fixture that perfectly meets every requirement of window lighting, the fixture adopted for lighting pictures by all the leading galleries, and by the best known collectors. Send for special circular and references to over 200 representative stores.
I. P. FRINK, New York

Our @lew JPlustrated Catalogue of

## BreBitectural and ふrt (Publications

Jo of interest to every possibpe Buzer of Boofis in this fine. Wie wifl be pleaked to send a copy upon request

CBates \& CBuilo Company 42 EBauncy 马treet, Boston, @lase.


Residence of Rudyard Kipling, Brattleboro, Vt.

## Dexter Brothers'

## English Shingle Stains

are the standard of excellence. Used by the leading architects. Special shades compounded if desired.

Dexter Brothers, Sole Manufacturers,
55 and 57 Broad Street, BOSTON

## Folsom New Model <br>  Snow Guard. <br> Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.
Faneuil Hall, Old South Church, King's Chapel,

Boston,
Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## Every three feet of

The best SASH CORD Made Is now marked

## SILVER LAKE "A"

Architects
can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.

A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish

 Shipoleum for Standing Finish.White Enamelite $A_{n}$ Eramel Paint for Colomial Interiors.

Send for our "Suggestions" on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## Result of Tests

Made at
The Massachusetts Institute of Technology, Boston DUPLEX JOIST HANGER for joist $6 \times 12$ failed at 39,550 lbs. Wrought Iron Stirrup, $3 / 821 / 2$, " " 6 x 12 " " 13,750 Van Dorn Steel Hanger,
$6 \times 12$
13,300
Patterson Bros., 27 Park Row, New York City, carry a complete stock of Duplex Hangers in all sizes.
Write for a verbatim report of tests and catalogue, to
The Duplex Hanger Company, Cleveland, Ohio.


## CARDS FOR ARCHITECTS' REFERENCE.


#### Abstract

HARVARD UNIVERŚITY. Lawrence Scientific School offers courses in Architecture, Landscape Architecture, Engineering, etc. For Descriptive Pamphlet apply to J. L. Love, Secretary, Cambridge, Mass. N. S. Shaler, Dean.


PERSPECTIVES RENDERED in Pen and Ink, Water Color, Sepia and India Ink Wash. Walter M. Campbell, 54 Devonshire St., Boston, Mass. Formerly with the American Architect.

SYRACUSE UNIVERSITY. College of Fine Arts offers courses in Architecture, Music and Painting. Instruction by distinguished specialists from our own country and Europe. Syracuse, N.Y.

BOOK BINDING: All kinds of books bound or repaired. Maps, pl..ns and photographs mounted. Portfolios, Scrap-books and blank-books made to order. Special facilities for cloth-hinged books. U. Holzer, 25 Bromfield St., Boston, Mass.

BOOK BINDING. Special attention given to the binding of large books and collections of plates. Portfolios made for Competition Drawings. Henry Blackwell, 56 University Place (cor. іотн St.), New York City.

INTERIOR DECORATIONS
Special Stuffs and Wall Papers, Fine Casts and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decgrations. Careful attention given to doing over rooms. Miss Woodville, Mrs. H. Markoe, ito S. ifth Street, Philadelphia. Correspondents in London and New York.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted. It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, <br> BOSTON.



## Notes.

On January 12, Mr. Sid H. Nealy read a paper on the architectural lessons of the Galveston disaster, illustrated by stereopticon views, before the Washington Architectural Club and after the lecture the club was entertained by Mr. Oscar G. Vogt.

The second annual number of the Southern Building News has appeared and fulfils the promise made for it by its editor and publisher. It is well illustrated and sticks closely to its particular field - the South, and this is a field which offers plenty of scope for a live, energetic publication.

In this issue Mr. Edward J. Jones, Jr., again advertises his latest collection of English photographs, which are remarkable for the freshness of the subjects, which duplicate none of those published in other collections we know of.

A new and attractively illustrated edition of "Cypress Lumber and its Uses" has just been published by the A. T. Stearns Lumber Co., Neponset, Mass. Its object is to set forth the various uses for which cypress is especially adapted.

Architects who may not have received the charming set of views of nine shingled houses recently published by Samuel Cabot of 70 Kilby St., Boston, should send for one. The set is well worth asking for.

Lord \& Burnham Co. have as usual issued an attractive calendar for the new year. The principal part of it is a color reproduction of a drawing by W. Granville Smith.

Judging from a calendar received from Alfred F. Moore, the well known Philadelphia manufacturer of insulated wire, his new building, replacing the one destroyed by fire a few months ago, is now finished His slow burning weatherproof wire and red core rubber wire are largely specified by the most careful architects, and endorsed by fire underwriters.
W. H. Abbott of 1267 Broadway, N. Y., issues an embossed sample card of descriptive and memorial name plates, of every material, for every purpose. He makes a specialty of modeled letters for inscriptions on public buildings, and on this account architects may find a memorandum of his address, useful in future.

A new form of sash construction has been put upon the market by Messrs. E. A. Carlisle, Pope \& Co. of Boston, by which glazing is done without putty. These "Putty-less Windows" offer several decided advantages over the old style windows, but as cuts are needed to illustrate the construction, we will not attempt to point them out, but would recommend those interested to send for the illustrated circular, issued by the manufacturers.

The American Bridge Company announce the following appointments :-
E. W. Stearns has been appointed Manager of the East Berlin, Conn., plant.
Frank S. Moore has been appointed Manager of the Lafayette, Ind. plant.
All the Pittsburg plants have been consolidated into one, and J. W. Walker appointed as Manager.

Mr. C. A. Billings having been appointed Assistant Treasurer for the New York District, H. W. Post has been appointed Manager of the Post \& McCord plant.
The Rider and Ericsson Hot-Air Pumping Engines were awarded a silver medal (the highest award of their class), at the Paris Exposition. There are now nearly 16,000 of these engines in use in all parts of the world. For the water supply of country houses they are far preferable to windmills, as they work at any time and are not unsightly. We admit that windmills may be made picturesque, but the picturesque kind seldom work satisfactorily and there are other ways of securing picturesque effects around country houses without building windmills.


MADE OF STEEL GALVANIZED, ${ }_{16}^{\prime \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY WHITE TERRA COTTA

of the VERY BEST QUALITY. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

# RED SLATE 

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## THE " PHENIX

 HANGER" solves the problem ofHow to Hang Storm Windows and Entire Screens.
It's the "Housewife's Joy" for clean windows.

## Ideal Ventilation. Solid Comfort.

Send for Catalogue.
PHENIX MFG. C0.,
028 Centre St., MILWAUKEE, WIS.

## ftlasters in Att for 1901



HILE " Masters in Art" for rgor will follow the same plan, and will contain all the features included in the issues for 1goo, it is already assured that the numbers of the second year will surpass those of the first in interest and attractiveness.
【 With such painters for subjects as Michelangelo, Leonardo da Vinci, Rubens, Albrecht Dürer, Andrea del Sarto, Correggio, and others, together with some of the most graceful and charming of the more modern masters, Gainsborough and Burne-Jones for examples, issues of the greatest beauty are ensured.
©Technical improvements in printing will enable the magazine to present even finer and more faithful reproductions; and advantage will be taken of every perfection in the arts of photography and engraving.
[The size of the letterpress type is to be enlarged, and the number of text pages correspondingly increased; but in general appearance the magazine will remain unchanged.

## 

© Part I, Van Dyck; Part 2, Titian; Part 3, Velasquez; Part 4, Holbein ; Part 5, Botticelli; Part 6, Rembrandt; Part 7, Reynolds; Part 8, Millet; Part 9, Gio. Bellini ; Part Io, Murillo; Part II, Hals; Part 12 (ready November 25), Raphael.
(1. The above twelve issues comprise the first, or igoo, volume of " Masters in Art." The set of twelve will be sent for \$1.50. All numbers are kept constantly in stock. Single copies, i5 cents each.

## ஞates \& $\mathfrak{G u i l d} \mathfrak{C a}$., 羽ublishers

42 CHAUNCY STREET, BOSTON, MASSACHUSETTS

## Bindings and Bound Volumes MASTERS IN ART

## VOLUME ONE OF "MASTERS IN ART,"

Comprising the issues from January, Igoo, to December, rgoo, inclusive (Parts I to 12), contains monographs devoted to Van Dyck, Titian, Velasquez, Holbein the Younger, Botticelli, Rembrandt, Reynolds, Giovanni Bellini, Millet, Murillo, Hals and Raphael.

Volume One, Bound in Cloth, $\$ 3.00$.
Volume One, containing the twelve issues listed above, will be supplied strongly and handsomely bound in brown art-buckram, with gold cover-design and gilt top, for $\$ 3.00$, postpaid. Ready December I, 1900.

Volume One, Bound in Half=Morocco, \$3.50.
Volume One, bound in half-morocco, with gold coverdesign and gilt top, $\$ 3.50$, postpaid. Ready December I, 1900 .

## SUBSCRIBERS' COPIES OF VOLUME ONE.

Subscribers' Copies of Volume One will be bound to order in either of the above styles. Price for binding Subscribers' Copies in brown buckram, gold cover-design and gilt top, \$1.50, post-paid. In half-morocco, gold cover-design and gilt top, $\$ 2.00$, postpaid. Send unbound copies carefully wrapped, by mail, and mark the package outside with the full name and address of the sender.

## BATES \& GUILD COMPANY, Publishers 42 CHAUNCY STREET, BOSTON, MASS.

## Can you build a fire?

If you can, you are as good an En= gineer as is needed to run a Rider or an Ericsson Hot Air Pump and thus have water every day in the year whether the wind blows or not

$$
\text { NEARLY } 16,000 \text { IN USE }
$$

Catalogue "A 8 " on Application at Nearest Office

## Rider $=$ Ericsson Engine Co

NEW YORK 22 Cortlandt Street 3 BOSTON
239 Franklin Street 3

MONTREAL, P.2. 692 Craig Street *

HAVANA, CUBA Teniente=Rey 71


HONOLULU, H.I.
Merchant and
Alakea Streets

## THE BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION



GERMAN HALF-TIMBER HOUSES
FLORENTINE ARMORIAL SHIELDS ENGLISH RURAL CHURCHES ROMAN DECORATIVE RELIEFS

## BATES AND GUILD COMPANY BOSTON MASS.

# STRATHMORE DRAWING BOARD <br> Used by all the leading Artists and Illustrators 

## "MITTINEAGUE PAPER CO.

Dear Sirs: I have just received the 25 sheets. It is the best paper I have seen, and I wish you would send me 150 more sheets.

> Sincerely yours,
C. D. GIBSON."

## WRITE FOR SAMPLE BOOK

Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS

SUBSCRIPTIONS: Subscription price, $\$ \mathrm{~m} .00$ a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$ \mathrm{r} .50$. Single copies, ro cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by manl usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the isth of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for 1896 , $\$ 250$; for 1897,1898 , 1899 and 1900 , $\$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for 1896, \$3.50: for 1897, 1898, 1899 and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## BROCHURE SERIES

## Bound Volumes for 1900

BOUND Volumes of The Brochure Series for 1900, in stamped buckram covers, uniform with previous volumes, are now ready. Price \$1.75; postpaid. Subscribers' copies of this Volume will be bound to order in the same style for 75 cents. Copies should be sent by mail, carefully wrapped, and the package marked outside with the name and address of the sender.

Indexes for the goo Volume will be forwarded on application.

## Saint Louis Architectural Club.

A meeting of the Club was held Saturday, January 26, when Mr. James P. Jamieson of Cope \& Stewardson, addressed the members on the design and construction of the new buildings for Washington University.

On Christmas eve last, Mr. John B. Hughes of St. Louis addressed a letter to the Club, offering as a gift a portion of the library of the late P. P. Furber, architect.

A resolution was passed expressing the thanks of the Club to Mr. Hughes, and providing for a special book-plate.

## The Detroit Architectural Club Prize Competition for 1900-1901.

The Syllabus, as recommended by the Educational Committee of the Detroit Architectural Club, was accepted and distributed among the members at its last regular meeting on Monday, January 21 . It was received throughout with a very enthusiastic spirit.

The object of the programme is to pursue a course which will tend to bring out the ability of each draughtsman as an architect. No mentions will be given at the monthly meetings when the drawings are to be submitted to local architects for criticism; but when all drawings are completed, the whole work will be adjudged and criticism given by an architect of national reputation, who has consented to perform this service to the Club. Then a prize, to be announced later, will be awarded to the successful competitor.

Given : A lot lying on the shore of Lake Ste. Claire, with a street frontage of 200 feet and a like frontage on the lake, and with a depth of 300 feet.

Required: A suburban home. The owner, a wealthy gentleman of refined taste.

Criticisms will be given on the monthly competitions by Architects Kahn, Donaldson, Mason and Case.

First Competition: Due first Saturday in February. Required: Block plan of entire estate at 1-16 inch scale.

Second Competition: Due first Saturday in March. Required: Plans of residence at $\mathrm{I}-8$ inch scale.

Third Competition: Due first Saturday in April. Required: Elevations of residence and out-buildings at 1-16 inch scale.

Fourth Competition: Due first Saturday in May. Required: Such drawings of buildings and garden accessories as competitor may choose, at 3-4 inch scale.

Fifth and Final Competition: Due first Saturday in June. Required: All drawings previously required, which may be restudied, and a bird'seye perspective of the entire estate.
In connection with the above, it may be of interest to know that the Club of late has steadily increased in membership and attendance.

## The Architectural Review for FEBRUARY, 1901



The principal feature of this issue is a liberally illustrated article by Edward Prioleau Warren of London, upon Decorative Plaster Work; one of the illustrations is here reproduced. Other things of special interest are Scale Drawings of the State Savings Bank, Detroit, by McKim, Mead \& White, a building for the Salvation Army, by E. A. Kent, and further drawings of Washington University, by Cope \& Stewardson.

The yearly subscription is $\$ 5.00$; single copies are 50 cents. The paper is mailed flat. The attention of draughtsmen and students is called to our plan for installment subscriptions, particulars of which will be furnished on request.
Bates $\mathcal{E}$ Guild Company, Pubs., 42 Chauncy St., Boston

## THEATRES

Their Safety from Fire and Panic; their Comfort and Healthfulness
By William Paul Gerhard, C.E.

T
HE provisions for the safety, comfort and health of the occupants of theatres are subjects of unquestioned importance. Mr . Gerhard is the leading American authority on these subjects and has devoted years to their study, the fruit of which is given in the present work.

THE author takes up in detail the question of safety and shows means by which present unsatisfactory conditions may be remedied, and discusses the following topics: means of escape; measures tending to prevent fire and for quickly detecting and signaling one which may occur; protection of the audience and stage personnel from fire and smoke; localizing and restricting fire; means for saving life, fighting fire and guarding against panic. Under comfort and sanitation the following topics are treated in like manner : the unsanitary condition of theatres; ventilation, heating and lighting ; floors, floor coverings, walls, ceilings and furniture ; dressing rooms ; drainage, plumbing and water supply; removal of refuse ; cleaning, dusting and sweeping; and periodical sanitary inspection.
$T \mathrm{HE}$ treatise is an important reference book, and a copy of it should be in the library of every architect, theatre manager, building and fire department, and in all public libraries. Size 6 x 9 inches, IIO pages, bound in green cloth.

# Price, $\$ 1.00$, Postpaid <br> BATES \& GUILD CO., 42 Chauncy St., Boston 

## Two Good Books on English Architecture

## Details of Gothic Architecture in England

Measured and Drawn from existing examples of the XIIth, XIIIth,
XIVth and XVth Centuries by James K. Colling, F. R. I. B. A.
The examples have been carefully selected from all parts of England, and are of especial interest as representing in great part the architecture of Parish Churches, many of them but little known. The examples include work from the Norman, Early English, Decorated and Perpendicular Periods (which all receive a fair share of attention), and show a fine series of Windows, Piers and Arches, Clerestories, Capitals, Compartments and Sections of Naves and Chancels, Etc., Arcades, Doors and Doorways, Towers, Roofs, Canopies, Fonts, Pulpits, Screens, Pane.ling, Pews, Piscinæ and Sedilia, Etc., with Sections, the respective mouldings, and contemporary Metalwork of various descriptions.
TWO VOLS. CLOTH BOUND, ( $121 / 2 \times 91 / 2$ INCHES) 190 PLATES; PRICE $\$ 18.00$

## An Analysis of Ancient Domestic Architecture in Great Britain

Showing some of the finest existing examples from drawings and measurements taken on the spot by F. T. Dollman, F. R. I. B. A.
This comprehensive work is unrivalled for its faithful illustrations of some of the most beautiful specimens of English Medixval Domestic Architecture; the very careful measured drawings of details make it an invaluable adjunct to any collection of photographs of old English houses. Every period will be found well represented; masonry and timber-work contribute about an equal number of specimens, some of the half timbered houses being among the finest in England, and even Gothic brickwork, so rarely to be seen, has its share of illustration.
TWO VOLS. HALF BOUND, ROXBURGH STYLE ( $121 / 2 x 91 / 2$ INCHES) 161 PLATES WITH TEXT, PRICE \$18.00

The above works, the first published in 1852, the second in 1861, have been reprinted in small editions from the original plates by B. T. Batsford of London. A few copies can be supplied by

THIS WORK MIGHT, WITH JUSTICE, HAVE BEEN NAMED
"COLONIAL FURNITURE," FOR IT ILLUSTRATES THE VERY EXAMPLES FROM WHICH OUR COLONIAL DESIGNERS COPIED

# English Household Furniture 

Georgian Period $* 100$ Plates

FOR hundreds of years English private collectors have been acquiring the finest specimens of Georgian furniture, and recently more than a score of the most noted of them contributed their finest pieces to a loan exhibition at the South Kensington Museum. 348 specimens, the cream of the exhibition, were then photographed, and these photographs are excellently reproduced in this work. It will be evident that the book presents the very finest examples of Georgian (or Colonial) furniture now existing. The variety of pieces shown is very great, and ranges from the simplest to the most elaborately carved ; the photographs have been made expressly for use, with visible scales; the index gives complete descriptive details. The book is worth its price to any one who designs in the Colonial style because of its infinite suggestiveness for all kinds of decorative detail in that style, quite apart from the subject of furniture.

> In Portfolio, $\$ 10.00$, Express Paid $\underline{\text { Bound }==\$ 12.00 \text {, Express Paid }}$

UNIFORM IN SIZE AND GENERAL STYLE WITH "ENGLISH COUNTRY HOUSES," "ENGLISH COUNTRY CHURCHES" AND " MODERN FRENCH ARCHITECTURE." DESCRIPTIVE LIST OF PLATES SENT ON APPLICATION.




MAGNESIA, 85 PER CENT.

15 PER CENT ASBESTOS FIBRE.

Architects and Consulting Engineers
Who want a Safe, Permanent

## Steam Pipe and Boiler Covering

And one that will save most heat - most coal-most money; one that will pay for itself in a very short time, and prove a most economical investment; one entirely free from such injurious compounds as PLASTER of PARIS, a material composing, to the extent of about so per cent to 90 per cent, most of the moulded coverings sold as Standard Asbestos, Asbestos-Magnesia, etc., should use $* * *$

## MAGNESIA sectional COVERING

85 per cent Pure Carbonate of Magnesia and 15 per cent of Good Asbestos Fibre. SAFE. $*$ RELIABLE. $*$ EASILY APPLIED. $*$ VERY LIGHT.


## Keasbey ©o Mattison Company,

 AMBLER, PENNA.
## KEUFFEL \& ESSER CO.

127 Fulton Street, New York.<br>Branches: III Madison Street, Chicago. 708 Locust Street, St. Louis.

## Drawing Materials, Mathematical and Surveying Instruments.



Our Duplex, Universal, Anvil, Paragon and Normal Papers are the best of their kind and grade. These papers cannot be obtained under any other name. Their reputation has brought into the market numerous imitations, many of which are offered under deceptive names. Do not accept substitutes and see that the papers you buy are watermarked with their correct name along the edge.

GERMAN HALF-TIMBER HOUSES FLORENTINE ARMORIAL SHIELDS

ENGLISH RURAL CHURCHES
ROMAN DECORATIVE RELIEFS
RENAISSANCE TORCH-HOLDER


# Brochure Series 

of ARCHITECTURAL ILLUSTRATION

## GERMAN

HALF-TIMBER HOUSES*

HOWEVER much one may be tempted to find fault with certain phases of German architecture, old and new, there is certainly little opportunity for criticism when it comes to the half-timber work of the sixteenth and seventeenth centuries. It is this which is chiefly responsible for the fascinating quality of the little German towns.
The casual traveller is pretty familiar with the domestic half-timber work of theRhineValley, and of the other "main travelled roads of Germany," but there is hardly a town that cannot present far more beautiful things than those that are noted by the indispensable Bædeker. The large towns like Hildesheim and Rothenburg are veritable mines of luxuriant detail and elaborate color suggestions, the former of these

[^0]towns being too little known in view of the unique splendor of its carved woodwork and its opulence of color and gilding.
The accompanying illustrations are taken, not from the townsthat are known, but from the insignificant little hamlets that dot the country from $t h e$ Baltic to the Alps. Few ever heard of Miltenberg, and yet the little marketplace might almost be a study for the stage setting of "Faust." How it ever happened that the various men who built these different structures should have succeeded in placing them in exactly such a way as to make one play into the hands of the other, and all of them to fall into groups that would drive a painter to desperation, is a problem that has never been solved Nowadays it seems impossible to put two houses in a ten acre lot without a resulting feud that endures as long as the buildings themselves; but things were ordered differently in





HOUSE IN COBERN (1577)
the sixteenth and seventeenth centuries, and not only were these little German houses marvels of intelligent design,
but they composed themselves as well after a fashion that we now know nothing of.

They are quite unaffected, there is no evidence of the application of exalted principles of architectural design; rather the various builders seem to have begun with the ground and built upwards until they had all they wanted, when they stopped. Windows were placed where windows were needed, bays were flung out at just those places where bays were necessary, and in every way there was apparently a total lack of self-conscious striving for effect, - and note the result. Good proportion, effective massing, an intelligent distribution of detail; charm of every possible kind. These were indeed happy days. No one then sought over the world for a big school where elaborate principles of architecture were enunciated and artists and architects were made to order. No one cared what the Romans did; no one was pessimistic enough to anticipate what the Parisians


MARKET-PLACE IN MILTENBERG
GERMANY


HOUSE IN MILTENBERG (I7TH CENTURY)


HOUSE IN STRASSBURG (I7TH CENTURY)
GERMANY
might do in a future then all unimagined: people did what they liked and for some inscrutable reason seemed to like good things.
Not that we could go ahead now and reproduce these buildings and still have the result good. The market-place of Miltenberg would be effective only on the stage and in the glare of footlights. It would be laughable in a New England village. It is all very charming, all very worthy of study, but the Zeitgeist never stops its implacable progress, and the spirit of the sixteenth and seventeenth centuries, not to speak of that of the fifteenth, is forbidden us forever.

Perhaps, if some of our architectural students would go over and live in Hildensheim or Rothenburg or Miltenberg for a year or two, letting the quality of the place soak in by degrees, instead of designing impossible public buildings to meet inconceivable conditions, we might sometime see results that would not be so infinitely distant from those we are now illustrating.

On the other hand, would this be the result? Could any architect in the nineteenth century do work of this kind? Is it not rather the instinctive production of men who were unlettered, yet, nevertheless, supremely civilized? Probably we must look conditions in the face, and realize that until the world knows the professional architect no longer, and until that happy day when every man can be once more his own architect and be worthy to be his own architect, we must be content with what we have, and content to see work of this kind only on its native soil or in the pages of architectural magazines.

The big centers of art and architecture have been well exploited, and the presentments of their various features are as familiar now as the advertisements of soaps and pills; but there are still hundreds of little villages in the terra incognita of temporary oblivion, and whoever will discover these and make them famous will establish his own fame as well.
c. M.


NFACTOR contributed more to the artistic splendor of the Renaissance than the rivalry which sprang from the newly arisen pride of individuality. There was an awakening to what may be called a sense of personality. To the cities this awakening came in the form of civic pride, inciting municipalities to rival each other in the splendor of their civic adornments. Within the cities numerous trade guilds arose, which attempted to outdo each


ARMS. OF THE CITY OF FLORENCE PALAZZO FERONI

FLORENCE
other in their pageants and in their influence in public affairs. Finally, there sprang into prominence the numberless great families whose rivalries have become a chief source of our knowledge of the time. Indeed, quite as much as a period of mental re-awakening, the Renaissance stands as an epoch when individuals, considered either as cities, corporate bodies, families or private citizens, had arrived at a knowledge of and pride in their respective entities.


UZZANO ARMS, ATtRIBUTED TO DONATELLO viA della sapienza, florence

A natural consequence of this awakened sense of individuality was the desire of the individual to perpetuate and to hand down his name and achievements to posterity. The arts furnished the means of thus transmitting them, and the strength of the desire is shown by the numberless memorial tombs which adorn all the greater churches of Italy, and in the overflowing archives of the municipalities in which the actions of her important citizens were recorded.

In no way is the upspringing of individual pride more noticeable than in


MEDALLION BY LUCCA DELLA ROBBIA OR SAN MICHELE, FLORENCE


ARMS OF A FLORENTINE PODESTA NATIONAL. MUSEUM

FLORENCE
the enormous increase in the use of armorial bearings - badges of individualism, as it were. Popes, magistrates and emperors granted such coats of arms by the thousands. They were adopted by cities, and even by the various quarters of cities, by the guilds and crafts, major and minor, and by all families of any distinction. They were displayed in every possible way,- embroidered on garments, cut on signet rings, embossed on books and engraved on


MEDICI ARMS
PALAZZO MONTALVO FLORENCE
plate, carved on tombs and proudly displayed on the façades of churches and public buildings. The grim palaces that frowned across the narrow streets of Florence each raised on high an emblazoned shield, as did the mailed ancestors of those who lived in them.

The forms of these shields were in the main derived from Roman and Gothic prototypes, but the art of the Renaissance naturally transformed the original heraldic stiffness with its own characteristic freedom, grace and exuberance of fancy. Writers on heraldry have sometimes re-


ARMS OF A FLORENTINE PODESTA NATIONAL MUSEUM FLORENCE
gretted this, and point out, what is undoubtedly true, that contrasts of the realistic rendering with the fundamental conventionalism imposed by the science of heraldry sometimes results in incongruities which the eye cannot forgive. On the other hand it should be remembered that such heraldic shields as those shown in our illustrations were rather intended as decorative medallions, to harmonize with and adorn architectural surroundings, than primarily as examples of heraldid art; and from this point of view they admirably serve their


ARMS of THE SILK weavers
via capaccio
Florence
purpose. In many cases, too, the bearings themselves are orthodox enough to suit the most pedantic of heralds, the decorative freedom being confined to the surrounding accessories, as for example in the arms of the Uzzano family, attributed to Donatello, shown on page 35 .

There is a tradition that the city of Florence was so named because of its site in the midst of flowering fields of lilies; and the city adopted the lily as its badge. An example of the treatment of this device, from a carving on the Palazzo Feroni is shown in our plate.

The Della Robbias executed several Florentine armorial shields in Florence. Their work combined all the desirable heraldic conditions, uniting as it did the relief of sculpture and the coloring of painting, and also, as the color was burnt into the terra-cotta, resisted the action of the weather. The seal of the Silk Weavers, from the walls of Or San Michele, shown at the bottom of page 35 , is the work of Lucca della Robbia. He has here made up for the poverty of the heraldic motive by the introduction of the two exquisite cupids who bear the shield, which are among his very best figures, and by surrounding the whole with a border of fruits and leaves.

This fruit and leaf border is especially interesting because it is one of the first of the sort which Lucca executed, although he later developed the motive and used it so extensively that his name has ever since been connected with it. On this page another carving, by an unknown hand, of the Silk Weavers' arms is shown. This carvingadornstheformer palace of the Lambertesca family which at one time served as the Weavers. Hall.

The building most rich in these historical heraldic shields in Florence is the Bargello, now the National Museum, which originally served as the official residence of the podestà or magistrate of the city. Each successive podesta displayed his arms on the walls of the open central court which bears two hundred and four such medallions.


ARMORIAL SHIELD, ATtributed to donatello palazzo davanzati, florence

## ENGLISH RURAL CHURCHES*

ENGLAND is the home of the rural church. In no country in the world are village churches so numerous, so beautiful, and so varied and excellent in architectural design ; indeed England herself offers nothing equal to them for our admiration. They are to be found in every littlest village of the land; and in most cases, even though small, they are rich and stately, with ancient memorials on their walls, and with old glass and tracery in their windows. The houses of the living nestle close about them, and the graves of the dead sleep in their shadows.
"From the gray walls of these ancient temples sturdy towers rise in the hill country, while lofty spires soar high from those on the fens and the plains. Most of them are reached by a path among the graves in the churchyard, which is often surrounded by a wall, and entered through a picturesque gate. Nearly always the ground level is considerably above the church floor, suggestive of the ages through which it has received the village dead; but generally the churchyard is neatly cared for, and children play among the old stones."

Speaking of Somersetshire during the fifteenth century, a recent architectural writer has given the reason for the number and richness of the rural churches

[^1]in that county, but this reason will equally apply to England as a whole.
"At this time" he says, "there was a very general spirit among all the English people which led them to give generously, and, for the most part, quite freely of their substance to maintain and make beautiful the service of God. The parish records and church wardens' accounts contain innumerable entries of gifts, both in kind and in money, which must have represented real generosity and self-sacrifice on the part of the giver. These, in some cases, include not only farm produce, personal effects and jewelry, but even cattle, sheep and hogs, so that often the church wardens ran a farm to take care of their stock.
"It must be remembered that a gift to the parish was the only channel through which the charitably inclined could ease their consciences, or the evil seek peace and pardon, or those grateful for mercies received show that gratitude. There were no schools to be endowed, no hospitals to be maintained, no public monuments to be raised; nothing, in fact, to be done with one's money which should so redound to one's benefit, here and hereafter, as to place it in the hands of that Mother Church which herself cared for all her children, gave them such book-learning as was needful in those simple days, taught them to serve God, honor the king and obey the Church, cared for them in sickness, entertained them when travelling, and


finally, at the end, shrived them and laid them to rest under the shadow of their parish church or beneath the pavement of the aisles."

Beside their number and beathty, English rural churches are also architecturally remarkable for their individual character. They are not here city churches on a small scale, but are, and were from the beginning, altogether different in type, if of the same architectural family. Indeed, there grew up in England a type of Parish church wholly different from the minster but just as good in its own way; while in France, on the contrary, where a small church has any architectural merit at all it is commonly by way of reproducing the minster on a minor scale. A French rural church is, for example, always vaulted wherever it could be, and wooden roofs (in the rare cases where they are used) are mere shifts. But in England a vault is very unusual in the small churches, and moreover it was clearly omitted by preference, and the various forms of enriched wooden roofs were used instead, not as shifts, but as approved


MARTOCK CHURCH
SOMERSETSHIRE, ENGLAND
substitutes. The difference, too, between English country and city churches existed from the beginning. Neither


in the thirteenth any more than in the fifteenth century were there built the small minster-like churches that we find in rural France. A writer in a recent Atlantic in discussing this subject further says:-
"The churches we find in the French villages and the lesser ones in the French towns, are not rural but urban in character. In a smaller way, they imitate and copy the methods and the detail of the neighboring great city churches. The round-arched semi-Byzantine
and this is found with more or less completeness throughout even the smaller French churches. If one of them fails in these monumental characteristics, it is because of poverty or through decay.
"In England, however, the rural church fits the country, and not the city, and it called out the best of the poetry and feeling that there was in her mediæval designers. In place of stone vaults we find rich oak ceilings with carved trusses and beams. As there are no vaults to prop up, the flying

churches of Provence, the domed churches of the Périgord, and the Gothic churches of the Isle of France all imitate the methods and the detail found in the neighboring cities, and nowhere is one sensible of attempts to link the architecture to the scenery. In all these churches stone vaulting prevails. Even when the stone vaults do not exist, the structure is generally prepared for them. Gothic architecture meant to the Frenchman a complete system of vaulting ribs and arched vault surfaces, of flying buttress and pinnacle loaded pier,
buttress scarcely appears, and the simple buttress only strengthens the walls or resists the sway of the clanging bells. But how graceful are the spires that crown the villages of Northamptonshire, how stately the towers, capped with lacelike parapets and bracketed pinnacles, that terminate the churches of Somersetshire; and everywhere all over England are found those innumerable short, stumpy towers, with battlemented tops and buttressed corners, which blend so charmingly with the yews of the churchyard, with the oaks and beeches
of the parks, and with the undulating meadows and waving cornfields of a rustic landscape:-

## Not a grand nature All the fields

Are tied up fast with hedges, nosegay like;
The hills are crumpled plains - the plains pastures,
And if you seek for any wilderness
You find at best a park. A nature
Tamed and grown domestic
A sweet familiar nature stealing in
As a dog might, or a child, to touch your hand,
Or pluck your gown, and humbly mind you so
Of presence and affection.
"If the English cathedral seems to be adapted with difficulty to the uses of Protestant worship, the same cannot be said of the parish church. Around this centres, if not exactly the life of the neighborhood, at least its sentiment and affections, while in death the squire and his family lie beneath its monuments, and the rude forefathers of the village sleep in its shadow. The little country church has much the same qualities as the old English country house, and the two are the unique architectural possessions of England, equaled nowhere else in variety of design, in the concord between structure and site, and in gracious outline and grouping. So numerous and conspicuous are they that the traveler finds it hard to believe they do not


HIGH HAM CHURCH Somersetshire, England
occupy the whole field, and with surprise discovers that dissent flourishes, and remembers that dis-establishment is not an impossibility."


## ROMAN DECORATIVE RELIEFS



ROMAN EAGLE
SS. APOSTOLI, ROME

IT IS most probable that all the fragments of Roman decorative reliefs shown in the following pages were colored. This being the case, it is interesting to imagine the effect of the different carvings, tinted after nature, whether conventional in type, as in the relief with the eagle from SS. Apostoli, more " impressionistic" in style, as in the pilasters from the monument of the Haterii, or in the literal, naturalistic carvings displayed on the altar in the Museo della Terme, and the relief decorated with quince and lemon foliage in the Lateran Museum.
As an example of the heraldic use of the Roman eagle the example, now set into the wall of the vestible of the Church of SS. Apostoli in Rome, is unsurpassed. This fragment was discovered during the excavation of Trajan's Forum. The oak wreath was originally closed at the top by a jewel, now lost, of colored stone or glass. Herr Wickhoff, the learned author of "Roman Art," conjectures that the background was painted blue, the wreath green and the ribbons rose. The traces of color which still cling in the crevices of the carving are, however, now so oxidized that it is imposible to be sure of the original scheme.

The beautiful carved pilasters from the tomb of the Haterii probably date
from the very end of the first century. The remains of this tomb were found in 1848 . It is of thoroughly characteristic Roman work throughout, showing very little direct influence of Greek models. It cannot date before the end of the first century, because the Colosseum and the Arch of Titus are both carved upon it. The details of decoration shown are particularly interesting from the evident attempt of the designer to give the impressionistic rather than a


ALTAR DECORATED WITH PLANE LEAVE MUSEO DELLE TERME, ROME


YILASTER FROM THE TOMB OF THE HATERII LATERAN MUSEUM, ROME
realistic effect of a rose-tree in full bloom twining about a slender vase. The sculptor who did the work has succeeded, by the subtle use of undercutting, and the consequent variation in light and shade presented to the eye of the moving spectator, in attaining an impression of life which a more accurate
and detailed rendering would not have


PILASTER FROM THE TOMB OF THE HATERII LATERAN MUSEUM, ROME


RELIEF FROM THE ARA PACIS AUGUSTI muSEO DELLE TERME, ROME
In contrast with the style of these


RELIEF WITII QUINCE AND LEMON FOLIAGE
LATERAN MUSEUN, SOME




Peabody \& Stearns, Architects, Boston.

The set of half-tone plates recently issued by us (one of which is shown above), of houses stained with

## Cabot's Shingle Stains

will be sent to any architect or draughtsman on request. \& They show some interesting examples of recent suburban architecture, by leading architects, and are displayed in a novel and effective manner.

SAMUEL CABOT, Boston, Mass.


## Fireplace Mantels

## $\$ 12.00$ and up.

## Made of Ornamental Brick

in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co.
P.o. Box 8929.
Boston, Mass.


## PARQUET

PLAIN OR ORNRITIENTAL Thick or Thin
We have representatives
$\begin{aligned} & \text { and stocks of floors in the } \\ & \text { leading cities. } \\ & \text { Write }\end{aligned}$
leading cities. Write for
Prices and Book of Designs.
FLOORS
THE INTERIOR HRRDWOOD CO., Manfis.

INDIANAPOLIS, IND.

## $\begin{array}{llllll}S & c & h & 0 & 0 & 1\end{array}$ Lighting

Our patent sectional Glass Cluster Reflectors for electric or combination gas and electric lighting are the best school fixtures made. Adopted by New York Board of Education and thousands of them used in New York City schools.
I. P. Frink, 551 Pearl St., New York

## Our @lew JPPustrated

Catalogue of

## arechitectural and

 adrt (PubficationsJs of interest to every possibpe Buper of Bookis in this fine. Me wipl Be pleaked to send a copy upon request
(Bates \& Euíl Company 42 CBauncy Street, Boston, Maқв.


## Dexter Brothers'

## English Shingle Stains

are the standard of excellence. Used by the leading architects. Special shades compounded if desired.

Dexter Brothers, Sole Manufacturers, 55 and 57 Broad Street, BOSTON.

## Folsom New Model <br>  Snow Guard. Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

## THREE HISTORIC BUILDINGS.

$$
\begin{aligned}
& \text { Faneuil Hall, } \\
& \text { Old South Church, } \\
& \text { King's Chapel, }
\end{aligned}
$$

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## Every three feet of

## The best SASH CORD

Made

Is now marked

## SILVER LAKE "A"

Architects
can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

Supremis Floor Finish Shipoleum for Standing Finish.
White Enamelite $\underset{\substack{\text { Interiors. }}}{\text { Enamel Paint for Colonial }}$
Send for our "Suggestions", on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## Result of Tests <br> Made at

The Massachusetts Institute of Technology, Boston DUPLEX JOIST HANGER for joist $6 \times 12$ failed at $\mathbf{3 9 , 5 5 0} \mathbf{l b s}$. Wrought Iron Stirrup, 3/82 $1 / 2$, $\quad$ " $6 \times 12$ " 6 " 3,750 " Van Dorn Steel Hanger,
$6 \times 12$
13.300

Patterson Bros., 27 Park Row, New York City, carry a complete stock of Duplex Hangers in all sizes.
Write for a verbatim report of tests and catalogue, to
The Duplex Hanger Company, Cleveland, Ohio.


## CARDS FOR ARCHITECTS' REFERENCE.

HARVARD UNIVERSITY. Lawrence Scientific School offers courses in Architecture, Landscape Architecture, Engineering, etc. For Descriptive Pamphlet apply to J. L. Love, Secretary, Cambridge, Mass. N. S. Shaler, Dean.

PERSPECTIVES RENDERED in Pen and Ink, Water Color, Sepia and India Ink Wash. Walter M. Campbell, 54 Devonshire St., Boston, Mass. Formerly with the American Architect.

SYRACUSE UNIVERSITY. College of Fine Arts offers courses in Architecture, Music and Painting. Instruction by distinguished specialists from our own country and Europe. Syracuse, N.Y.

BOOK BINDING: All kinds of books bound or repaired. Maps, plans and photographs mounted. Portfolios, Scrap-books and blank-books made to order. Special facilities for cloth-hinged books. U. Holzer, 25 Bromfield St., Boston, Mass.

BOOK BINDING. Special attention given to the binding of large books and collections of plates. Portfolios made for Competition Drawings. Henry Blackwell, 56 University Plack. (cor. 1oth St.), New York City.

INTERIOR DECORATIONS.
Special Stuffs and Wall Papers, Fine Casts and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms. Miss Woodville, Mrs. H. Markoe, ito S. iyth Street, Philadelphia. Correspondents in London and New York.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted.
It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




## A Bit of Information that Users of Graphite Should Possess.

To the vast majority the word salt means only common table salt, but to a chemist the word salt means what results from the chemical combination of a metal with an acid. Table salt results from the union of a gas called chlorine with a metal called sodium.

In the same manner to the vast majority of people the word graphite or plumbago suggests ordinary stove polish, as that is the form most generally known. To the trained chemist, however, the word graphite means one of the forms of carbon. Furthermore, the chemist knows that the words plumbago and blacklead, while misnomers, are synonyms for the word graphite, but that graphite differs widely in its characteristics and its usefulness

Probably the Dixon Company, who are miners and importers of graphite as well as manufacturers, have a wider experience in and a fuller knowledge of graphite than can be found elsewhere. This experience and knowledge causes the Dixon Company to select one kind of graphite for its lead-pencils, another kind for its lubricants, and to make various selections and mixtures of graphite for the different graphite products sent out by the Dixon Company.

The fact is, that graphite differs widely in appearance and in its physical make-up. Some is crystalized and some is amorphous; some is hard and some is soft, and there are many other differences. The best results can only come when the proper graphite is selected and then properly prepared.

A long-felt want has been satisfactorily met by Mr . Gillespie in the production of his perspective charts, for they really accomplish the desired end, in that he has produced a chart, accompanied by a transparent diagram to place over the plan, which readily permits any object or point in the plan to be immediately ascertained in the perspective chart itself, which, by the way, is very complete, though plain, simple and in no wise confusing. With the plan and elevation of an object, it becomes as easy to make the perspective as to make a plan or an elevation. They are bound to prove a boon to architects and draughtsmen, in facilitating the rapid and accurate execution of this work, which will certainly be more in vogue than formerly, and a saving of space, time and money, will permit a greater use of perspective and a consequent betterment in design; for, by the use of these charts, elevations may be readily executed as a study in accurate perspective and reproduced in elevations after desired effects are ascertained.

The charts are large enough for all practical work; are five in number, comprising two for external angular, interior angular, bird's-eye view and parallel perspective ; are drawn uniformly to scale, and all lines are so indexed as to leave
nothing to be desired but tracing paper, pencil and an idea.

The American Bridge Company report a large number of important contracts for structural steel work, among which are three large viaducts, and a 300 -foot draw span for the C.B. \& Q. R.R.; 3,500 tons of material to be delivered to the Rock Island R.R. during the present year ; the Highway Bridge, 145 th St., New York; two large viaducts for the Oregon Short Line; twenty-five highway bridges in Kansas; the structural steel work for the new fourteen-inch continuous mill for the Carnegie Steel Company at the Duquesne Steel Works; the structural steel work for the new armory at Medina, N.Y., and a large steel building to be used as a blacksmith shop for the A.T. \& S.F.R. Company at Topeka, Kan; the steel work for building No. 22 at the New York Naval Yard, and the ten-story office building of the Mutual Savings Bank in San Francisco, Cal,

Hereafter the New York Contracting Office of the American Bridge Company will be in charge of Mr. S. Fischer Miller, formerly with Messrs. Milliken Bros.


MADE OF STEEL GALVA NIZED, ${ }_{16}{ }^{\prime \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS.
MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY <br> WHITE TERRA COTTA

of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to 'withstand elements.

## WHITE BRICK \& TERRA COTTA CO.

 156 Fifth Avenue, New York City.
# RED SLATE 

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## THE " PHENIX HANGER"

solves the problem of
How to Hang Storm Windows and Entire Screens.

It's the "Housewife's Joy" for clean windows.

Ideal Ventilation. Solid Comfort.
Send for Catalogue.
PHENIX MFG. C0.,
028 Centre St., MILWAUKEE, WIS.

## BINDINGS and BOUND VOLUMES MASTERS IN ART

## Volume One of "Masters in Art"

Comprising the issues from January, 1900, to December, 1900, inclusive (Parts 1 to 12), contains monographs devoted to Van Dyck, Titian, Velasquez, Holbein the Younger, Botticelli, Rembrandt, Reynolds, Giovanni Bellini, Millet, Murillo, Hals, and Raphael.


## Volume One

 Bound in Cloth, $\$ 3.00$Volume One, bound in brown art-buckram, with gold cover-design and gilt top, $\$ 3.00$, post-paid.


Volume One
Bound in Half-Morocco, \$3.50
Volume One, bound in green half-morocco, with gold cover-design and gilt top, $\$ 3.50$, post-paid.

## Subscribers' Copies of Volume One

Subscribers' Copies of Volume One will be bound to order in either of the above styles. Price for binding Subscribers' Copies in brown buckram, gold cover-design and gilt top, \$1.50, post-paid. In green half-morocco, gold cover-design and gilt top, $\$ 2.00$, post-paid. Send unbound copies carefully wrapped, by mail, and mark the package outside with the full name and address of the sender.

BATES $\mathscr{A}$ GUILD COMPANY, PUBLISHERS 42 CHAUNCY STREET BOSTON, MASS.

## ftasters in $\mathfrak{A r t}$ for 1901



HILE＂Masters in Art＂for Igor will follow the same plan，and will contain all the features in－ cluded in the issues for 1900 ，it is already assured that the numbers of the second year will surpass those of the first in interest and attractiveness．【With such painters for subjects as Michelangelo，Leonardo da Vinci，Rubens，Albrecht Dürer，Àndrea del Sarto，Correggio， and others，together with some of the most graceful and charming of the more modern masters，Gainsborough and Burne－Jones for examples，issues of the greatest beauty are ensured．
©Technical improvements in printing will enable the maga－ zine to present even finer and more faithful reproductions；and advantage will be taken of every perfection in the arts of photography and engraving．
©The size of the letterpress type is to be enlarged，and the number of text pages correspondingly increased；but in general appearance the magazine will remain unchanged．

## 』umbers 邓lublisher durint 1900

【 Part I，Van Dyck ；Part 2，Titian ；Part 3，Velasquez；Part 4，Holbein ； Part 5，Botticelli ；Part 6，Rembrandt；Part 7，Reynolds；Part 8，Millet ； Part 9，Gio．Bellini；Part 10，Murillo；Part 11，Hals ；Part 12 （ready November 25），Raphael．
（1．The above twelve issues comprise the first，or 1900 ，volume of＂Masters in Art．＂The set of twelve will be sent for $\$ 1.50$ ．All numbers are kept constantly in stock．Single copies， 15 cents each．

## ほates \＆©uilo $\mathfrak{C} 0 .$, 习ublishers

## 42 CHAUNCY STREET，BOSTON，MASSACHUSETTS

## King Edward VII.

The new King of England, uses a Rider Engine in his palace at Sandringham. The Khedive of Egypt has a Rider Engine at Ras-El-Tin palace at Alexandria, Egypt. The Paris Exposition gave the highest medal of its class to both our Rider and Ericsson Engines. * * Rider and Ericsson Hot Air Pumping Engines are appreciated in other countries besides their own apparently. * * Catalogue "A 8 " on application to nearest office. $* * * * * *$


## Rider-Ericsson Engine Co.

22 Cortlandt St., New York 239 Franklin St., Boston
22 A Pitt St., Sydney, N.S.W.
Teniente-Rey 71, Havana

86 Lake St., Chicago
40 N. 7th St., Philadelphia
692 Craig St., Montreal, P.Q.
Merchant and Alakea Sts., Honolulu

## THE <br>  <br> SERIES OF <br> ARCHITECTURAL ILLUSTRATION <br> 

THE PARIS OPERA HOUSE
GOTHIC CARVED WOODWORK
MOORISH ARCHITECTURE IN NORTH AFRICA

## BATES AND GUILD COMPANY BOSTON MASS.

## THEATRES

Their Safety from Fire and Panic; their Comfort and Healthfulness By William Paul Gerhard, C. $\dot{E}$.

THE provisions for the safety, comfort and health of the occupants of theatres are subjects of unquestioned importance. Mr. Gerhard is the leading American authority on these subjects and has devoted years to their study, the fruit of which is given in the present work.
THE author takes up in detail the question of safety and shows means by which present unsatisfactory conditions may be 1 remedied, and discusses the following topics: means of escape; measures tending to prevent fire and for quickly detecting and signaling one which may occur; protection of the audience and stage personnel from fire and smoke; localizing and restricting fire; means for saving life, fighting fire and guarding against panic. Under comfort and sanitation the following topies are treated in like manner: the unsanitary condition of theatres; ventilation, heating and lighting; floors, floor coverings, walls, ceilings and furniture ; dressing rooms; drainage, plumbing and water supply; removal of refuse ; cleaning,
dusting and sweeping: and periodical sanitary inspection. dusting and sweeping; and periodical sanitary inspection
THE treatise is an important reference book, and a copy of it should be in the library of every architect, theatre manager, building and fire department, and in all public libraries. Size $6 \times 9$ inches, yIo pages, bound in green cloth.

Price, $\$ 1.00$, Postpaid
BATES \& GUILD CO., 42 Chauncy St., Boston

## STRATHMORE DRAWING BOARD <br> Easier to work upon than any other

"MITTINEAGUE PAPER CO.
Mittineague, Mass.
Gentlemen:-I am using the medium finish 4 ply for all of my pen work, and the mounted water-color paper for all of my wash drawings. I am in every way perfectly satisfied, and find the paper much easier to work upon than any I have tried previously. Yours very truly,

WILL BRADLEY."

## SEND STAMPS FOR SAMPLE BOOK

Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL I LLUSTRATION 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON


#### Abstract

PUBLISHERS' ANNOUNCEMENTS SUBSCRIPTIONS: Subscription price, $\$$ I.00 a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$ 1.50$. Single copies, to cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January. REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender. CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each month. Subscribers who do not receive their copies before the end of the month will piease notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price. BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for $1897,1898,1899$ and $1900, \$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for $1896, \$ 3.50$ : for 1897 , 1898, 1899 and 1000 , $\$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1805 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1goo, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.


## NOTES

THE illustrations of the Paris Opera House shown in this issue comprise the thirdprize set of photographs submitted in Brochure Series Competition " P " by L. M. Bacheller of Lynn, Mass.

The April number of Masters in Art will be devoted to the sculpture of Michelangelo, and will therefore be of unusual interest to architects. Copies will be sent upon receipt of $I_{5}$ cents in stamps, after the 25 th of this month.

During the war of 1812 , a number of sea captains, sailing from Bristol, R.I., took up the profitable pursuit of privateering. After the war a number of fine houses were built with the proceeds, and the design of these houses, instead of following the classic revival then setting in, returned to the style of the Colonial work They form a unique and isolated group, and are interestingly described in this month's issue of The Architectural Reviez by Mr. J. W. Dow, whose own photographs liberally illustrate the article.

We wish to particularly call the attention of our readers to the announcements in this issue of Gardens Old and New, by Charles Scribner's Sons, and The Furniture of our Forefathers by Doubleday, Page \& Co. We can strongly recommend both books as most valuable additions to an architect's library. The architect who attempts the design of a country house in the English style without a copy of Gardens Old and New is working at a disadvantage. This book is as much a work upon the finest domestic architecture of England as it is upon garden design, and seldom is so much exceedingly valuable material offered at so low a price.

Another unusual opportunity is offered by Mr. Edward J. Jones, Jr., who advertises standard Italian photographs, retailing at from 25 cents to 40 cents each, at only 9 cents in hundred lots. Several draughtsmen, by clubbing together, can get one, two or three hundred, and divide them so as not to duplicate any subjects they may already have. Mr. Jones' object in offering these photographs at so low a price is to quickly close out his stock of standard subjects, so as to devote his entire time to securing sets of new and comparatively unknown subjects, in which work he has been so successful.

The last issue of The Doings of Expanded Metal is largely devoted to examples of factory construction. The extensive use of expanded metal in the construction of cement works is illustrated by views of the new plants of the Glens Falls Portland Cement Co., manufacturing the "Iron Clad" and "Victor" brands, and of the Phoenix Portland Cement Co. of Nazareth, Pa . An illustration taken after the Mullin Hotel fire in Baltimore shows the efficacy of expanded metal construction in preventing the spread of fire.

The American Bridge Co. announces for January the largest sales of any month since organization, aggregating over sixty thousand tons. Among the large orders now being filled, are twenty bridges for the Erie Railroad, eight bridges to be erected at Torreon, Mexico, and about 2,800 tons of structural steel for the Kingsbridge Road Power House which Cooper \& Wiegand are erecting for the Third Avenue Railroad in New York City. They have also received contracts for an electric power plant in Ultimo, New South Wales, Australia, and a large building for the Montezuma Copper Co., at Nacozani, Mexico, this last order being furnished by the Gillette-Herzog branch of the Company.


## GARDENSOLDANDNEW

This important and magnificently illustrated work, just published in England by the proprietors of "Country Life," contains the finest of those remarkable photographs of English gardens and country houses that have for some years been appearing in that magazine, together with new material

 O work at all comparable to it exists, for the privacy of English gardens (on the whole the most beautiful in the world) has been heretofore jealously guarded, as any one who has tried to obtain photographs of them knows. But here are shown in detail, by means of a multitude of views - every one especially taken, and the work of a true artist in photography - the finest English gardens, ancient and modern, as well as the adjacent country houses of every character and every period of history. The book will be a revelation of garden beauty, and is replete with suggestions as to the possibilities of gardening and its accompaniments of architecture, sculpture and metal-work. The introductory text deals with the historical development and essential features of the garden, and the subsequent articles describe the places shown. The book illustrates 66 gardens, contains 469 engravings, (many of them full-page, measuring $7^{1 / 2}$ by $101 / 2$ inches) which for artistic charm and beauty are unequalled in process of reproduction. 229 pages, size 10 by 15 inches, strongly and handsomely bound in decorated cloth.

$$
\text { PRICE, } \$ 15.00
$$

Charles Scribner's Sons 153 =157 FIFTH AVENUE, NEW YORK

## The Architectural Review

For MARCH, 1901


Doorways in Bristol, R.I., illustrating The Bristol Renaissance

## "The Bristol Renaissance"

By J. W. DOW

Describing a unique development of American "Colonial" work in Bristol, R.I.; an isolated example of delicate and refined detail.

## Lettering in Ornament

By LEWIS F. DAY<br>Author of "Alphabets, Old and New," "Nature in Ornament," "Analysis of Ornament,"<br>" Everyday Art," "Windows," etc

In this article Mr. Day discusses the use of lettering, inscriptions, etc, with special regard to various applications in architectural design.

The above are the two leading articles of the March issue, which contains the usual quota of carefully selected plates, and regular editorial and critical departments. There are about thirty illustrations in the text, divided among the two principal articles and the Review of Current Periodicals.

50 cents a copy
BATES \& GUILD COMPANY 42 CHAUNCY ST., BOSTON
$\$ 5.00$ a year

# THE FURNITURE OF OUR FOREFATHERS 

By ESTHER SINGLETON

Critical Description of Plates<br>By RUSSELL STURGIS

Nearly four bundred illustrations. Published in three editions; two strictly limited. $A$ work unique in its field. Of great artistic interest and historic value.

W. S. M writing in the February Book Buyer says :
"The book deserves very high praise. It is written out of abundant information, with skill, conciseness and vivacity. Miss Singleton has made a good book in a field where none existed before."

The Studio for February says:
"We welcome the first instalment of a work which promises to fulfill for American furniture-history what the books of Chippendale, Sheraton, Hepplewhite and Litchfield have done for English furniture.
We congratulate the publishers on the excellence of the illustrations they have obtained for this work."

The work is being published in eight parts. Every phase and feature of The Furniture of Our Forefathers receives adequate treatment and ample illustrations. Among the subjects treated are :-the Puritan, home-made things, the quaint Dutch belongings, the rich furnishings of the great Southern Colonial mansions, the ways of telling the genuine historical associations with special pieces, technical details, values and marks, and all the other unwritten lore of the subject.

FOR PARTICULARS SEND THIS COUPON TO
Doubleday, Page \& Co., 34 Union Square, E., New York

Please send me full particulars in regard to The Furniture of Our Forefathers.
NAME
ADDRESS
B. S.

CITY
DOUBLEDAY, PAGE \& CO., 34 Union Square, New York.


## MAGNESIA, 85 PER CENT.

15 PER CENT ASBESTOS FIBRE.
Architects and Consulting Engineers
Who want a Safe, Permanent
Steam Pipe and Boiler Covering
And one that will save most heat-most coal-most money; one that will pay for itself in a very short time, and prove a most economical investment; one entirely free from such injurious compounds as PLASTER of PARIS, a material composing, to the extent of about 80 per cent to 90 per cent, most of the moulded coverings sold as Standard Asbestos, Asbestos-Magnesia, etc., should use $\not \approx \not \approx \notin$

## MAGNESIA sectional COVERING

85 per cent Pure Carbonate of Magnesia and 15 per cent of Good Asbestos Fibre
SAFE. * RELIABLE. * EASILY APPLIEd. * VERY LIGHT.

.....Manufactured only by.....
Keasbey $\mathfrak{E}$ Mattison Company,
AMBLER, PENNA.

## KEUFFEL \& ESSER CO.

127 Fulton Street, New York.<br>Branches: III Madison Street, Chicago. 708 Locust Street, St. Louis.

## Drawing Materials, Mathematical and Surveying Instruments.



Our Duplex, Universal, Anvil, Paragon and Normal Papers are the best of their kind and grade. These papers cannot be obtained under any other name. Their reputation has brought into the market numerous imitations, many of which are offered under deceptive names. Do not accept substitutes and see that the papers you buy are watermarked with their correct name along the edge.

THE PARIS OPERA HOUSE GOTHIC CARVED WOODWORK

MOORISH ARCHITECTURE IN NORTH AFRICA


## THE Brochure Series

OF ARCHITECTURAL ILLUSTRATION

1901
MARCH
NO. 3

## PARIS OPERA HOUSE

|N PURSUANCE of the third Napoleon's plan for the monumental adornment of Paris, a competition, open to all French architects, was announced in 186I, for the design for what was proposed should be, and indeed ultimately became, the most splendid and beautiful Opera House in the world Among the one hundred and seventy competitors was one by the name of Jean Louis Charles Garnier, who died on August fourth, on $1 y$ three years ago. Garnier was a pupil of the École des Beaux Arts, which in 1848 had awarded him the Prix de Rome. He subsequently
 travelled in Italy and Greece, and then, after serving an apprenticeship upon government work, set up for himself as an architect in Paris in 1854. He entered upon his public career, however, only with the submission of his design for the Opera House ; but to him the jury, by unanimous decision, awarded the commission.

The theatre was begun in 186r and was completed in 1874

The Opera House stands at the end of the splendid Avenue which bears its name. The largest theatre in the world, it covers an area of three acres; but its seating capacity is not so great as might be expected from the ground space which it covers, since the building was intended not only as an opera house, but also to serve the city as a place for official public entertainments and splendid ceremonies of all sorts, so that the apartments which surround the auditorium assume almost as much importance as does that auditorium itself.

The main façade, approached by a broad, low flight of steps, consists of three stories. On the ground floor is a portico of seven arches giving entrance to a large vestibule. Against the piers of these arches are set groups of statues symbolizing the lyric arts. One of these


groups, by Carpeaux, the most striking of the series, representing "The Dance" is shown in our illustration. The architect kept the lower story sober in its lines, color and adornment that the principal story of the façade, the loggia above it, might take its proper importance. This loggia is decorated with rich Corinthian columns with capitals of colored marbles, and forms an open gallery, the square windows of which correspond in position to the doors below. Smaller Corinthian columns of red marble with gilded bronze capitals serve as frames, as it were, to the intervening windows. Above these windows are set gilt-bronze medallion busts of great composers. The two angles of the façade are occupied by pavilions, not extending far beyond the front of the building, which are surmounted by arched pediments that break the severity of the straight lines. Up to this point the whole façade is admirable; and the loggia is one of the very finest examples of its class in existence.

The attic which surmounts it is, however, deplorably heavy. Garnier himself recognized this defect, and lightened the attic as much as he could by statuary and panelling; but in course of time the mass has become uniform in color, the


DETAIL
PARIS OPERA HOUSE

details have lost relief, and the general effect is over weighty. Above the attic, over the two flanking pavilions, rise colossal gilt groups, representing respectively Music and Poetry attended by the Muses.

Garnier intended that his façade should clearly indicate the main structural divisions of his work,-the foyer as a whole, the auditorium and the stage itself,-and therefore behind the façade, which marks the position of the foyer, rises a low dome which roofs the auditorium, and behind this is a huge triangular pediment crowned with a gilded statue of Apollo in the middle, and on the two ends by Pegasi, which marks the opening of the stage.

The façade as a whole is richly decorated with bronze, gilding, and colored marbles, for Garnier intended to give the edifice the splendid and festive character which he conceived such a


building should have. In describing it he writes: "In spite of false notes and imperfections of detail, I consider the façade as the most typical, most individual part of the entire building; and were there many more faults in it I should still and shall always be proud of having designed it."

The lateral façades are much soberer in ornamentation than the main front. In the centre of each is a pavilion similar in character to those which mark the extremities of the façade. Within
this landing it is divided into two flights. Each landing is flanked with balconies from which the visitor may survey the brilliant scene presented by the entering audience. The grand foyer of the Opera extends throughout the whole length of the façade behind the loggia, and is one hundred and seventyfive feet long and forty-two feet wide. It is perhaps over-profusely gilded and adorned with colored marbles, but under artificial light presents a magnificent scene.

these pavilions are separate entrances. Architecturally, the interior is less interesting than the exterior, but is extremely rich and most lavishly decorated. The great stair-case, which is, as it were, the backbone of the structure, and is the means of communication between the main parts of the theatre, is developed to the amplest and most magnificent proportions. As far as the first landing where it gives entrance to the amphitheatre, it is single and about thirty-two feet in width, but beyond

The auditorium proper (insufficiently lighted to admit of adequate showing by photographs) has naturally, on account of the limiting conditions, less architectural interest than other parts of the building.

As a whole the Grand Opera of Paris indubitably ranks as the greatest architectural achievement of recent years; and, in an opinion expressed by vote in December, 1898 , its façade was named as one of the eight greatest in the world by the readers of this Series.


## GOTHIC CARVED WOODWORK

IT IS possible, from the remains which have come down to us, to trace the gradual evolution of skill in woodcarving during the middle ages, - a skill which culminated in Germany in the fifteenth century, and which remained constant during the sixteenth. The earlier examples show that at first the carvers contented themselves with tracing their patterns upon the smooth surface of the wood and then merely clipped away the background, leaving the design in a low relief which was further emphasized by painting either the


GOTHIC CARVED WOODWORK fifteenth century
Riedinger Collection: Augsburg


GOTHIC CARVED WOODWORK fifteenth-sixteenth century Bawarian National Museum: Munich
ground-work or the patterns in variegated and brilliant colors. Similar in nature to the corresponding brass and stone reliefs of the period, this method was especially suited for the decoration of large surfaces. Gradually as the carvers' skill increased, and reliefs became higher, the surfaces of the patterns were also carved, and the designs took on a more elaborate character, until finally, in late specimens and where the use to which they were to be put permitted, the backgrounds were entirely cut away and the carving was left in the round, often as elaborately and delicately executed as exquisite lace work.

The motives of Gothic design in woodcarving were two-fold; first, motives


GOTHIC CARVED WOODWORK
fifteenth century
Bavarian National Museum: Munich
almost purely architectural in character, such as were shown in former illustrations of the subject in this Series, and second, in the more naturalistic type of work here illustrated.

In all Gothic ornamental sculpture there is everywhere displayed an appreciation of the animate spirit of nature. The vital quality is seldom wanting, and this quality is plainly derived from the close study of natural organic forms. Yet the Gothic carver did not by any means disregard the laws of conventionalization, and only those abstract qualities of form capable of effective decorative treatment were drawn from nature. On the other hand the natural source was never so far departed from as in Classic ornamentation. "Instead of the formalized abstractions of antique details," writes Professor Moore, " we have often the generic types, and even many of the specific peculiarities, of natural leafage. In the one motive a rounded foliate or floral boss answers to the ovate members of the ancient scheme, while a tendril with lateral leaves answers to the dart. In the others the meander or scroll is a living branch, into the spaces enclosed by the wavy or convoluted lines of


GOTHIC CARVED WOODWORK fifteenth century Bavarian National Museum: Munich


GOTHIC CARVED WOODWORK
Germanic Musenm: Nuremberg


Fifteenth century


GOTHIC CARVED WOODWORK fifteenth century

## Bavarian National Museum: Munich

which grow, as of their own volition, unfolding leaves. Everywhere in Gothic art do we find expression of organic life, but this life is invariably governed by the exigencies of architectural fitness. The artist while keenly appreciative of nature, has a constant regard to the condition of his art."


GOTHIC CARVED WOODWORK fifteenth century
Bavarian National Museum: Munich
A distinctive character of German foliage sculpture is the more or less elaborative crinkled treatment of leafage; indeed German carvings suggest, as do the later types of leaf ornament in France, the dried foliage of autumn rather than the broadly undulating leaf forms of summer time.


FIFTEENTH CENTURY


Germanic Museum: Nuremberg


## MOORISH ARCHITECTURE IN NORTH AFRICA

THE first clear historical knowledge we have of that part of North Africa which we now call by the general name of the Barbary States, with the exception of mere rumors of tribal wars and the certain fact that there were, even in the earliest times, a number of small but flourishing towns scattered along the coast which drove a brisk trade with Southern Europe, comes with the Roman dominion. The conquest of Carthage in I 46 B.c. laid the foundations of that empire in Africa which was gradually extended throughout the north. Under Roman rule the whole country attained a high degree of prosperity. Several considerable cities were fortified as a protection against the savage tribes of the mountains, and there are many interesting architectural remains of this period, especially in the province of Constantine, in Algeria, where the ruins of the ancient city of Lambessa still exist, with its city gates, part of an amphitheatre, and a mausoleum ornamented with Corinthian columns. This flourishing civilization received a sudden check, however, when the barbaric Vandals swarmed down out of the north about the middle of the fifth century, and drove the Romans out of Africa. Though the Vandals were in their turn expelled by Belisarius, Justinian's general, the true reawakening of the country came only with the great Moslem invasion of it in the middle of the seventh century; the effect of which was not


A STREET IN TUNIS
only to wipe out whatever seeds of the Christian religion that had been implanted there, and to permanently establish Mohammedanism in its place, but to revive the country from the virtual barbarism into which it had lapsed after the incursion of the Vandals.

Whether considered as the conquest of one of the most extensive empires of the world by a small and previously unknown people or as the propagation of a new religion, the sudden and enormous spread of Moslemism in the seventh century is without parallel in history. It surpassed the careers of the great Eastern conquerors in the importance of its effects; it surpassed the growth of the Roman empire in brilliancy and rapidity. In the year 622, a little band of only seventy converts bound themselves to stand by their new prophet Mohammed, and to escape persecution, fled with him from Mecca to Medina in Arabia. This flight is known in history as the "Hejira," and marks the turning point in the fortunes of Mohammed and the beginning of a great religious conquest by the sword. Arabia, Syria, Palestine, Phœnicia, Egypt, Northern Africa, and Southern Spain fell successively before the Moslem arms, until in 1732, under the last of the Ommiads, their empire embraced southwestern Asia from the Gulf of Arabia and the Indus to the Mediterranean and the Caucasus, the entire northern coast of Africa, a great part of the Spanish peninsula, and a portion of

southern France, besides Sardinia, Corsica and the Balearic Isles. In the train of this conquest there sprung up what we now know under the general name of Saracenic architecture.

Although the first impulse of the conquest came from Arabia, it must not be supposed that the spring of Saracenic art was Arabian. "The Arabs themselves," writes Mr. Fergusson, "had no architecture properly so called. Their only temple was the Kaabah at Mecca,
them prayer everywhere and anywhere was equally acceptable. All that was required of the faithful was to turn towards Mecca at stated times and pray, going through certain forms and in certain attitudes; but whether the place was the desert or the housetop was quite immaterial. To understand Mohammedan art it is essential to bear this constantly in mind, and not to assume that because the first impulse was given from Arabia, everything


TUNIS FROM THE HOUSE-TOPS, SHOWING MOSQUE DJAMA ET. SIDI
a small square tower, almost destitute of any architectural ornament and more famous for its antiquity and sanctity than for any artistic merit. It is said that Mohammed built a mosque at Medina - a simple edifice of bricks and palm sticks; but the Koran gives no directions on the subject, and so simple were the primitive habits of the nomad Arabs, that had the religion been confined to its native land, it is probable that no mosque worthy of the name would ever have been erected. With
afterwards must be traced back to that primitive people."

Neither as the result of the conquest was there any fusion of races, nor marked transplanting of peoples. Each country retained its own inhabitants, who, though they adopted the new faith, clung to their old habits in art as in other things with the unchangeableness of the East. All this is made clearly evident by the earliest Moslem architecture. When the conquerors wanted new mosques in Syria they employed


[^2]

INTERIOR
MOSQUE OF DJAMAEI DJEDIDALGIERS
native architects and builders, and converted the existing Christian churches into places of prayer. In Egypt, mosques were enclosed and palaces designed and built from the fragments of ancient remains. When the Turks conquered Asia Minor their architecture was still that of the Byzantine basilicas which they found there; and when they entered Constantinople they did not even carry the style with which they were familiar across the Bosphorus, but framed their mosques upon the type of church peculiar to that city, of which Santa Sophia is the most eminent example. The same happened in Northern Africa. Early Moslem buildings in Tunis and Algeria must have been mere rearrangements of such structures as were already existing at the time. We thus see that for long after the conquest all the conquered peoples still continued to build as they had built before their conversion, merely adapting their former methods to the uses of the new religion.
In the course of time, however, the Mohammedan element thus introduced into the styles of the different countries, produced a certain uniformity - a uniformity naturally increased by the
intercommunication arising from the uniformity of religion - and in this way, after some centuries, a style was elaborated which was so homogeneous, and possessed so much that was entirely its own, as to make it sometimes difficult to detect the germs from the older styles of which it was composed.

The distinguishing differences which separate Saracenic from Christian architecture in general, are the predominance of decorative over structural conditions, a predilection for minute surface ornament and the absence of figure sculpture, - this last on account of a prohibition in the creed of Islem which forbade the depiction of any living thing excepting trees and flowers. Forced therefore, to take another outlet, the Moorish decorative sense evolved a scheme of decoration based on geometry, which became one of the most striking features of Moslem art.

The student must regret that apparently there are no remains in the Barbary States dating from the best period of Moslem architecture, for these states were the cradle of the Moorish race, and it is here that we should naturally hope to find the connecting links between the architectural styles of Egypt


STREETINARAB QUARTER ALGIERS

and the very dissimilar remains of Moorish art in Spain. Nevertheless, exasperating as they are to the student of art history, the comparatively recent examples of Moorish architecture, which are practically all that now exist in the Barbary States, are both interesting and typical, because from their very recentness they exhibit the characteristics of the unified Saracenic style with little trace of ulterior influence.

Saracenic architecture apparently never produced such important works in North Africa as in Egypt. Constructive design appears to have been here even more completely subordinated to decoration than elsewhere. Tiling and plaster relief took the place of more architectural materials, while horse-shoe and cusped arches were substituted for the simpler and more architectural pointed arch. The courts of palaces and public buildings were surrounded by ranges of horse-shoe arches on slender columns provided with capitals of a form rarely seen in Cairo.

The ceremonial requirements of a mosque are simple. The court must have its fountain for ablution before prayer, and the prayer-hall proper must contain a niche to indicate the direction of Mecca, and a high slender pulpit for


A STREET IN CONSTANTINE


STREET IN BISKRA
AN OASIS IN THE ALGERIAN SAHARA
the reading of the Koran. It will be seen that these few but indispensable features can have but little determining influence upon the architecture. In the ninth century the minaret, from which a call to prayer could be sounded, was added as a common but by no means invariable feature. The minarets of North Africa are more massive in design than those of Cairo, and the example from Tunis which is shown in our illustration (page 64) is one of the finest specimens of its peculiar class. The upper part of it has been, unfortunately, somewhat remodelled in recent times, but the proportions of the shaft and the bold military style of its ornament render it singularly pleasing. Its age is not known.

The Djama el Kebir or Great Mosque of the city of Algiers is said to have been founded in the eleventh century. Its exterior is not interesting, and indeed the whole building is unusually bare in type. The interior consists merely of a square whitewashed hall divided into naves by columns united by semicircular arches, the only decoration being the carved capitals of the columns, the ornament about the niche pointing toward Mecca, the suspended lamps and the small pierced windows.


The Djama el Djedid or New Mosque of the same city (page 66), was designed in the seventeenth century by a Genoese architect who was subsequently put to death by the Dey because he had built it in the form of a cross. The exterior, surmounted by its large dome, is flanked by a square minaret about ninety feet high which is enamelled with colored tiles. The interior is much like that of the Grand Mosque, with the exception that the slender columns of the former are here replaced by piers, and that the wall decoration is more elaborate.
The present cathedral at Algiers, formerly the Mosque of Hassan, (page 68), shows an unsuccessful attempt to combine Moorish and Christian architecture. It was altered from the old mosque in 1791.

Moorish palaces and dwelling houses are architecturally interesting only on the inside. The houses present toward the streets merely dead white walls with a few grated loop-holes in place of windows, and heavy wooden doors studded with ponderous nails. The upper stories often project outward, sometimes supported on wooden props, and in the narrower streets occasionally even touch the opposite wall. One of the


BALCONY OVERLOOKING COURT ALGIERS


BALCONY OVERLOOKING COURT
ALGIERS
principal features of the Moorish houses in cities are the flat roofs on which so large a part of Oriental life is conducted. The interior of the better class of dwelling is, however, very different from what would be imagined from the outside. It usually contains a court-yard, planted with orange and lemon trees, with a marble fountain in the center. Round the court-yard is an arcade of marble columns, the pavement underneath it as well as the walls being covered with highly colored encaustic tiles. A stairway, ornamented in the same way, leads to a gallery surrounding the court, and out of this gallery the chambers of the house open.

The ancient Arab quarter of the city of Algiers, which lies on a hill slope, is typical. The streets which traverse this quarter are very narrow, probably purposely so to afford shade, and are intersected by many alleys just wide enough to afford passage, so that the whole labyrinth is very confusing to any stranger who attempts to thread it. The Arab quarter of Constantine is quite as curious as that of Algiers, and has been even less influenced by the French occupation.


## Architectural Photographs

## 9 cents each

I have secured 1200 genuine Italian Architectural Photographs (Allinari's) at a price much lower than their actual cost in Italy, and, while they last, shall sell them in lots of 100 only, at

## $\$ 9.00$ per 100.

They are unmounted, 8 inches by io inches in size, and sold everywhere in this country, regularly, at 40 cents each. The assortment comprises exterior and interior views of the most noted palaces and churches, façades, gardens, pilasters, doors, windows, ceilings, sculpture, monuments, detail, ornament, etc., in Rome, Venice, Florence, Naples, Palermo, Lucca, Bologna, Siena, etc. There are no duplicates, and each lot of 100 will contain an assortment of subjects, as designated above.

At these prices the lot can last but a short time, and all orders will be filled in rotation as received, and the offer withdrawn after April ist. The sets of 100 cannot be broken, and positively cannot be sent on approval. Cash must accompany each order, on receipt of which they will be at once forwarded by registered mail.

These photographs are guaranteed as represented, and present the opportunity of a lifetime

## EDWARD J. JONES, JR., Watertown, Mass. Dealer in Architectural Photographs of every description



Peabody \& Stearns, Architects, Boston.

The set of half-tone plates recently issued by us (one of which is shown above), of houses stained with

## Cabot's Shingle Stains

will be sent to any architect or draughtsman on request. * They show some interesting examples of recent suburban architecture, by leading architects, and are displayed in a novel and effective manner.

SAMUEL CABOT, Boston, Mass.


## Fireplace Mantels <br> $\$ 12.00$ and up.

## Made of Ornamental Brick

in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co.
B.0. Box 8929.

# PARQUET <br> PLIIIN OR ORNHIIIENTHL Thick or Thin 

THE INTERIOR HRRDWOOD CO., Mlanfis. INDIANAPOLIS, IND.

Cluster Reflectors


For Stores, Banks, Offices, Schools, Etc. Send for Catalogue.
I. P. FRINK, 551 Pearl St., New York.

## Two Good Books on English Architecture

Details of Gothic Architecture in England
Measured and Drawn from existing examples of the XIIth, XIIIth, XIVth and XVth Centuries by James K. Colling, F. R. I. B. A.
The examples have been carefully selected from all parts of England, and are of especial interest as representing in great part the architecture of Parish Churches, many of them but little known. The examples include work from the Norman, Early English, Decorated and Perpendicular Periods (which all receive a fair share of attention), and show a Etc.,Arcades, Doors and Doorways, Towers, Roofs, Capitals, Compartments and Sections of Naves and Chancels, Etc., Arcades, Doors and Doorways, Towers, Roofs, Canopies, Fonts, Pulpits, Screens, Panelling, Pews, Piscine and Sedilia, Etc., with Sections, the respective mouldings, and contemporary Metalwork of various descriptions.
TWO VOLS. CLOTH BOUND, ( $121 / 2 \times 91 / 2$ INCHES) 190 PLATES; PRICE $\$ 18.00$
An Analysis of Ancient Domestic Architecture in Great Britain
Showing some of the finest existing examples from drawings and measurements taken on the spot by F. T. Dollman, F. R. I B. A.
This comprehensive work is unrivalled for its faithful illustrations of some of the most beautiful specimens of English Medizval Domestic Architecture; the very careful measured drawings of details make it an invaluable adjunct to any collection of photographs of old English houses. Every period will be found well represented; masonry and timber-work contribute about an equal number of specimens, some of the half timbered houses being among the finest in England, and even Gothic brickwork, so rarely to be seen, has its share of illustration.
TWO VOLS. HALF BOUND, ROXBURGH STYLE ( $12 \frac{1}{2} \times 91 / 2$ INCHES) 161 PLATES WITH TEXT, PRICE \$18.00

The above works, the first published in 1852 , the second in 1861 , have been reprinted in small editions from the original plates by B. T. Batsford of London. A few copies can be supplied by
Bates \& Guild Company, Boston, Mass.


## Dexter Brothers'

## English Shingle Stains

are the standard of excellence. Used by the leading architects. Special shades compounded if desired.

Dexter Brothers, Sole Manufacturers, 55 and 57 Broad Street, BOSTON.

## 

Folsom New Model Snow Guard.
Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.

> Faneuil Hall, Old South Church, King's Chapel, Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## Every three feet of

The best SASH CORD Made

Is now marked

## SILVER LAKE "A"

## Architects

can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish Shipoleum for Standing Finish. <br> White Enamelite $\begin{gathered}\text { An E.gamel } \\ \text { interiond } \\ \text { Paint for Colomial }\end{gathered}$ Interiors.

Send for our "Suggestions" on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## Result of Tests

Made at
The Massachusetts Institute of Technology, Boston DUPLEX JOIST HANGER for joist $6 \times 12$ failed at $\mathbf{3 9 , 5 5 0} \mathbf{~ l b s}$. Wrought Iron Stirrup, $3 / 821 / 2$, $6 \times 12 \quad$ " $\quad$ 13,750
Van Dorn Steel Hanger,
$6 \times 12$
13,300
Patterson Bros., 27 Park Row, New York City, carry a complete stock of Duplex Hangers in all sizes. Write for a verbatim report of tests and catalogue, to
The Duplex Hanger Company, Cleveland, Ohio.


## Details of Building Construction

By CLARENCE A. MARTIN<br>Assistant Professor of Architecture at Cornell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper Ioxi $21 / 2$ inches, and substantially bound in cloth.

Price, Postpaid, $\$ 2.00$
Bates $\mathcal{E}$ Guild Co., 42 Chauncy Street, Boston, Mass.

IF YOU SPECIFY
 It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




The old firm of N. \& G. Taylor Company, nanufacturers of tinplate, Philadelphia, show in he above quite a unique advertisement. It is a heet of their special brand, the "Taylor Old ityle" roofing tin, the coating of which has been craped with a knife. The curling strips of netal give the user of this tin some idea of the eavy metal coating which is contained upon the heets, but this of itself does not make its duraility. Messrs N. \& G. Taylor Company pay articular attention to the method of the manuacture of this tin. Our readers are no doubt lready aware of the way in which this fine oldashioned plate is made, each sheet being dipped y hand in open pots of metal of different degrees f temperature. It is made entirely by the Palm )il process, the sheets come in contact with no cid flux or any foreign matter to injure the retal coating, no rolls are used to squeeze off he metal, each sheet holds every ounce of coatag that it is possible to absorb. This is the way hat roofing tin was first made in Philadelphia in 830 , and then sold by this firm This kind of in was used on many of the oldest buildings in hiladelphia, and these tin roofs are just as good oday as when first put on, over seventy years ago.

## Interior Decorations

$\mathbf{S}^{\text {PECIAL Stuffs and Wall Papers. Fine Casts }}$ and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms.

Miss Woodville, Mrs. H. Markoe

110 S. 17 th ST., PHILADELPHIA
CORRESPONDENTS IN LONDON AND NEW YORK

## sevo ror our catraoue or FLY SCREENS

Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.


MADE OF STEEL GALVA. NIZED, $\frac{1}{16}{ }^{\prime \prime}$ THICK, THIN ENOUGF FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY WHITE TERRA COTTA

of the VERY BEST QUALITY. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA Co. 156 Fifth Avenue, New York City.

# RED SLATE 

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## THE " PHENIX

 HANGER"solves the problem of
How to Hang Storm Windows and Entire Screens.
It's the "Housewife's Joy" for clean windows.
Ideal Ventilation. Solid Comfort.
Send for Catalogue.
PHENIX MFG. CO.,
028 Centre St.,
MILWAUKEE, WIS.



Try them, and you will find that
The Richness of their Colors,
The Ease with which they Flow, The Blue Print and Tinting Qualities MAKE THEM

## ABSOLUTELY SUPERIOR

to all other similar inks in the market. The inks are true solutions (not mixtures in suspension), excepting the black, and are absolutely waterproof. Important features are the style of bottle (as in cut), the improved feeder and the specially prepared chamois wiper.
THE CARTER'S INK CO., BOSTON, MASS.

# SECOND \& EDITION <br> PENDRAWI 

An Illustrated Treatise by CHARLES D. MAGINNIS

A THOROUGHLY PRACTICAL TEXT-BOOK, TREATING OF STYLE, MATERIALS, TECHNIQUE, VALUES, AND ARCHITECTURAL AND DECORATIVE DRAWING, AIMING TO PUT THE DRAUGHTSMAN AND STUDENT OF ILLUSTRATION IN THE MOST DIRECT WAY OF ATTAINING TO SUCCESSFUL PRACTICE. ILLUSTRATED BY OVER SEVENTY DRAWINGS BY MASTERS OF THE ART, MANY OF THEM MADE EXPRESSLY FOR IT. CLOTH BINDING, SIZE, $5^{1 / 4} \times 7^{1 / 4}$.

$$
\text { POST-PAID, } \$ 1.00
$$

## B ATES \& GUILD COMPANY

42 CHAUNCYSTREET $\star \varnothing \varnothing$ BOSTON

## King Edward VII.

The new King of England, uses a Rider Engine in his palace at Sandringham. The Khedive of Egypt has a Rider Engine at Ras-El-Tin palace at Alexandria, Egypt. The Paris Exposition gave the highest medal of its class to both our Rider and Ericsson Engines. * * * Rider and Ericsson Hot Air Pumping Engines are appreciated in other countries besides their own apparently. *** Catalogue "A 8 " on application to nearest office. $* * * * * *$


## Rider-Ericsson Engine Co.

22 Cortlandt St., New York
239 Franklin St., Boston
22 A Pitt St., Sydney, N.S.W.
Teniente-Rey 71, Havana

86 Lake St., Chicago
40 N. 7th St., Philadelphia
692 Craig St., Montreal, P.Q.
Merchant and Alakea Sts., Honolulu

## THE <br> BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION <br>  <br> SWISS CHÂLETS

THE TEMPLES OF BAALBEC
NOTRE DAME CATHEDRAL, PARIS

BATES AND GUILD COMPANY BOSTON MASS.

## THEATRES

Their Safety from Fire and Panic; their Comfort and Healthfulness
By William Paul Gerhard, C.E.

HE provisions for the safety, comfort and health of the occupants of theatres are subjects of unquestioned importance. 1 Mr . Gerhard is the leadmg American authority. on these subjects and has devoted years to their study, the fruit of which is given in the present work.

THE author takes up in detail the question of safety and shows means by which present unsatisfactory conditions may be 1 remedied, and discusses the following topics: means of escape; measures tending to prevent fire and for quickly detecting and signaling one which may occur; protection of the audience and stage personnel from fire and smoke; localizing and restricting fire; means for saving life, fighting fire arid guarding against panic. Under comfort and sanitation the following topics are treated in like manner: the unsanitary condition of theatres; ventilation, heating and lighting; floors, floor coverings, walls, ceflings and furniture ; dressing rooms ; drainage, plumbing and water supply; removal of refuse ; cleaning, dusting and sweeping; and periodical sanitary inspection.

WHE treatise is an important reference book, and a copy of it should be in the library of every architect, theatre manager, building and fire department, and in all public libraries. Size $6 x 9$ inches, 110 pages, buturd ingreen cloth.

Price, $\$ 1.00$, Postpaid
BATES \& GUILD CO., 42 Chauncy St., Boston

# STRATHMORE CHARCOAL PAPER 

The only Charcoal Paper Manufactured in the United States
"MITTINEAGUE PAPER CO.
Gentlemen :-I am very much pleased with your Charcoal Paper, and write to know what firm retails it in Boston or New York, as I would like to have some more of it. Yours truly,

MAXFIELD PARRISH."

SEND 10 CENTS FOR SAMPLE SHEETS
Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS


#### Abstract

SUBSCRIPTIONS: Subscription price, $\$$ r.oo a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$$ r.50. Single copies, ro cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January. REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender. CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the I5th of each month. Subscribers who do not receive their copies before the end of the month will piease notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price. BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 250$; for 1897,1898 , 1899 and 1900 , $\$ \mathrm{r} .00$ each. Bound Volumes, in specially designed buckram covers, for 1896, $\$ 3.50$ : for 1897,1898 , 1899 and 1900 , $\$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September Igoo, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.


Mr. Edward J. Jones, Jr., of Watertown, Mass., whose collections of photographs are known to many of our readers, has recently returned from Pittsburgh, where he reports finding architects busy and in several cases needing additional draughtsmen. Mr. Jones will be pleased to answer inquiries accompanied by stamped and addressed envelope, concerning positions at from $\$ 65$ to $\$ 100$ a month, which he knows are open in offices of Pittsburgh architects.

The firm of L. Haberstroh \& Son of Boston, which recently decorated the Colonial Theatre and the Hollis Street Theatre of that city, both ranking among the finest theatres in the country, has now made an important addition to its staff in Mr. Henry B. Pennell, from whose designs the decorations of the Colonial Theatre were executed. Mr. Pennell graduated from the Institute of Technology in r8go and held the Rotch travelling scholarship during I898 and I899, and while abroad made a special study of the best examples of Byzantine, Renaissance and Gothic decoration, which in addition to his architectural training acquired by seven years' work in the office of Messrs. Peabody \& Stearns, makes him eminently fitted for decorative work of the highest order.

Messrs. Lucas and Albert Haberstroh have always made it the aim of their firm to design decorations in conformity with the architecture of the structure, and to work in conjunction with the architect, realizing that in this spirit only, true decoration is performed. Since 1848 the firm has been engaged upon State and County buildings, residences, churches, clubs, theatres, and almost every kind of building requiring decorative treatment, and is prepared to furnish every kind of decorative work, including painting, stained glass, mosaic, furniture, draperies and wall hangings. Sketches for decoration are furnished whenever desired.

## Graphite Painting of Structural Steel.

The specification of Dixon's Silica-Graphite Paint by prominent architects and consulting engineers who desire the very best productive paint for the steel work of office buildings, has led to the introduction of hundreds of so-called graphite paints, which are manufactured of a cheap, soft, amorphous form of graphite usually used for foundry facings and stove polish, and mixed with fish or adulterated linseed oil.

Dixon's Silica-Graphite Paint being the original graphite paint, it has been found necessary for the protection of the architect, owner and the manufacturers themselves, to give special attention to the sale and proper use of the paint.

On specified work, upon request, the Dixon Company gives information as to the amount of paint delivered in original sealed packages, ready mixed for use, to the mill and building site, and as to the proper application of the paint to the steel work.

In studying the architecture of buildings recently erected in the financial district of New York City, the million dollar office building of the Atlantic Mutual Insurance Company, Wall and William streets, expresses the very best decorative features of ancient and modern architecture to be seen.

It is appropriate to state that the building was designed by Clinton \& Russell, 32 Nassau street, and was constructed by the Thompson-Starrett Company, Battery Park •Building, New York City.
Two coats of Dixon's Silica-Graphite Paint were properly applied to the steel work by the contractors, and the perfect and handsome coating produced by this paint, secured for it the favorable expressions of the architects, contractors and owners.

## MASTERS IN ART



HILE " Masters in Art" for Igor follows the same plan, and contains all the features included in the issues for 1900, it is already assured that the numbers of the second year will surpass those of the first in interest and attractiveness.
Technical improvements in printing enable the magazine to present even finer and more faithful reproductions. The size of the letterpress type is enlarged, and the number of text pages correspondingly increased; but in general appearance the magazine remains unchanged.
The following artists are represented by the first six issues of the present year:-
January, 1901
RUBENS
Part 13
Plate I., Descent from the Cross : Antwerp Cathedral. Plate II., The Crucifixion : Antwerp Museum. Plate III., Rubens' Sons: Liechtenstein Gallery, Vienna. Plate IV., St. Ildefonso Receiving a Chasuble from the Virgin: Imperial Gallery, Vienna. Plate V., Portrait of Helena Fourment: Hermitage Gallery, St. Petersburg. Plate VI., Children with a Garland of Fruit : Munich Gallery. Plate VII., Castor and Pollux and the Daughters of Leucippus: Munich Gallery. Plate VIII., Coronation of Marie De Médicis: Louvre, Paris. Plate IX., Emperor Maximilian I. : Imperial Gallery, Vienna. Plate X., A Lion Hunt: Munich Gallery. Portrait of Rubens by Himself (Detail) : Imperial Gallery, Vienna.

## February, 1901 LEONARDO DA VINCI

Part 14
Plate I., Portrait of Mona Lisa: Louvre, Paris. Plate II., The Virgin of the Rocks : Louvre, Paris. Plate III., The Virgin of the Rocks: National Gallery, London. Plate IV., Portrait of an Unknown Princess: Ambrosian Library, Milan. Plate V., The Last Supper: Santa Maria Delle Grazie, Milan. Plate VI., St. John The Baptist : Louvre, Paris. Plate VII., 'La Belle Féronnière:' Louvre, Paris. Plate VIII., Angel in Verocchio's 'Baptism of Christ:' Academy, Florence. Plate IX., St. Anne, the Virgin, and the Christ-Child: Louvre, Paris. Plate X., Adoration of the Magi (Unfinished) : Uffizi Gallery, Florence. Portrait of Leonardo da Vinci : Royal Library, Turin.

## March, 1901 ALBRECHT D $\mathbf{U}$ RER

Part 15
Plate I., Stephan Paumgärtner: Left Wing of The Paumgärtner Altar-Piece, Munich Gallery. Plate II., Christ on the Cross: Royal Gallery, Dresden. Plate III., Portrait of Hans Imhof the Elder : Prado, Madrid. Plate IV., Madonna of the Finch: Berlin Gallery. Plate V.,., Feast of the Rose Garlands: Monastery of Strahow, Prague. Plate VI., Madonna of the Cut Pear: Imperial Gallery, Vienna. Plate VII., Portrait of Hieronymus Holzschuher : Berlin Gallery. Plate VIII., Adoration of the Trinity by All Saints: Imperial Gallery, Vienna. Plate IX., Adoration of the Magi: Uffizi Gallery, Florence. Plate X., The Four Apostles, St. John and St. Peter-St. Mark and St. Paul : Munich Gallery. Portrait of Durer by Himself: Munich Gallery.

April, 1901

## MICHELANGELO

Part 16
(Sculpture)
Plate I., David: Academy, Florence. Plate II., Pietà: St. Peter's, Rome. Plate III., Madonna and Child: National Museum, Florence. Plate IV., Bound Captive : Louvre, Paris. Plate V., Madonna and Child : Church of Notre Dame, Bruges. Plate VI., Tomb of Lorenzo De' Medici ; Sacristy of Șan Lorenzo, Florence. Plate of Notre Dame, Bruges. Plate VI., Tomb of Lorenzo De' Medici; Sacristy of San Lorenzo, Florence. Mose VII., 'II Pensieroso ' (Tomb of Lorenzo De' Medici): Sacristy of San Lorenzo, Florence. Plate VII., Moses:
Church of San Pietro in Vincoli, Rome. Plate IX., Tomb of Giuliano De' Medici: Sacristy of San Lorenzo, Florence. Plate X., Giuliano De' Medici (Tomb of Giuliano De' Medici) : Sacristy of San Lorenzo, Florence. Portrait of Michelangelo, from a Medal by Leone Leoni : South Kensington Museum, London.

## May, 1901

## MICHELANGELO

Part 17

(Paintings)

Plate I., Holy Family: Uffizi Gallery, Florence. Plate II., The Creation of the Sun and Moon: Sistine Chapel, Rome. Plate III., The Creation of Man: Sistine Chapel, Rome. Plate IV., The Temptation and Expulsion: Sistine Chapel, Rome. Plate V., Jeremiah: Sistine Chapel, Rome. Plate VI., The Delphic Sibyl: Sistıne Chapel, Rome. Plate VII., Daniel: Sistine Chapel, Rome. Plate VIII., The Cumæan Sibyl: Sistine Chapel, Rome. Plate IX., Decorative Figure: Sistine Chapel, Rome. Plate X., Last Judgment: Sistine Chapel, Rome. Portrait of Michelangelo: Uffizi Gallery, Florence.

June, 1901
COROT
Part 18
The subjects for the illustrations for this number are not fully decided upon, but they will be as carefully selected to represent the best work of the artist as those of previous issues.

## Single Copies, 15 cents <br> Yearly Subscription, $\$ 1.50$ in advance BATES $Q$ GUILD COMPANY, PUBLISHERS 42 CHAUNCY STREET BOSTON, MASS.

## "The Georgian Period"

This publication, which now consists of seven Parts, contains more than a hundred pages of text, illustrated by some two hundred and fifty text-cuts, and two hundred and forty-nine full-page plates, of which fifty-five are gelatine or half-tone prints. It is in truth a work of superior excellence and great usefulness.

The matter already illustrated may in small part be classified thus :

## PUBLIC BUILDINGS

City Hall, New York, N.Y. Old State House, Boston, Mass.

Pennsylvania Hospital, Philadelphia, Pa. . ، 7755
Carpenters' Hall, Philadelphia, Pa . . . " 1770
Independence Hall, Philadelphia, Pa. . . " I729
Faneuil Hall, Boston, Mass. . . . . " 1741

## IMPORTANT HOUSES

Fairbanks House, Dedham, Mass. . . . Date ${ }^{16}{ }_{3} 6$
Royall Mansion, Dedham, Mass. . . . " 1737
Philipse Manor House, Yonkers, N.Y. . . " r745
Tudor Place, Georgetown, D.C. . . . " 179
Mappa House, Trenton, N.Y. . . . . " 1809
Woodlawn, Va. . . . . . . . " 1799
Mount Vernon, Va. . . . . . " 1743
and others

## CHURCHES

First Church, Hingham, Mass. . . . . Date 168 r St. John's Chapel, New York, N.Y. . . . " 1803 First Congregational Church, Canandaigua, N.Y. " 1812 St. Peter's P. E. Church, Philadelphia, Pa. . " 1758 Gloria Dei Church, Philadelphia, Pa. . . " 1700 and others

| Date | 1749 |
| :---: | :---: |
| "" | 1729 |
| $"$ | 1767 |
| $"$ | 1727 |
| $" ،$ | 1764 |
| ". | 1729 |

King's Chapel, Boston, Mass. . . . . Date 1749
Seventh-day Baptist Church, Newport, R.I. . " 1729
Christ Church, Alexandria, Va. . . . . " 1767
Christ Church, Philadelphia, Pa. . . . " 1727
St. Paul's Chapel, New York, N.Y. . . . " 1764
Old South Church, Boston, Mass.

Incidentally there are shown special measured drawings or large views of the following features and details:-Porches and Doorways, 54 subjects ; Staircases, 18 subjects; Mantelpieces, 76 subjects ; Pulpits, 6 subjects ; Fanlights, 60 subjects.
In addition to the subjects enumerated above there is a large quantity of measured and detailed drawings of Cornices, Ironwork, Gateposts, Windows, Interior Finish, Ceiling Decoration, Capitals, etc., together with elevational and sectional views of entire buildings.

The Drawings in this publication have been made by such well-known draughtsmen as

```
DAVID A. GREGG
FRANK E. WALLIS
WALTER M. CAMPBELL
CHARLES L. HILLMAN
```

P. G. GULBRANSON

JAMES ROSS
E. ELDON DEANE JOHN C. HALDEN
FRANCIS S. SWALES
CLAUDE F. BRAGDON

GEORGE C. GARDNER
GLENN BROWN
FRANK A. HAYS AND OTHERS

PRICE


## Bates \& Guild Company, 42 Chauncy Street, Boston



## FACINUS QUOS INGUINAT ÆQUAT

## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY $\mathcal{E}$ MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford \& Hanna Co., J. F. Schoellhopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

# KEASBEY $\mathcal{E}$ MATTISON CO. 

 AMBLER, PENNA.NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE

BOSTON.
S. C. Nightingale \& CHILDS NEW YORK, ROBERT A. KEASBEY PHILADELPHIA, MAGNESIA COVERING CO PHILADELPHIA, MAGNESIA COVERINGCO. BALTIMORE, RICHMOND, NORFOLK,
CHARLESTON

SMITH-COURTNEY CO
HENRY WALKE CO W. M. BIRD \& CO.

# KEUFFEL \& ESSER CO. 

127 Fulton Street, New York.
Branches: III Madison Street, Chicago. 708 Locust Street, St. Louis.

## Drawing Materials, Mathematical and Surveying Instruments.



Our Duplex, Universal, Anvil, Paragon and Normal Papers are the best of their kind and grade. These papers cannot be obtained under any other name. Their reputation has brought into the market numerous imitations, many of which are offered under deceptive names. Do not accept substitutes and see that the papers you buy are watermarked with their correct name along the edge.

## SWISS CHÂLETS

THE TEMPLES OF BAALBEC

NOTRE DAME CATHEDRAL, PARIS


# THE <br> Brochure Series 

OF ARCHITECTURAL ILLUSTRATION

1901
APRIL
NO. 4

## SWISS CHALETS

AT FIRST glance the typical qualities of the Swiss châlet seem picturesqueness, harmony with the surrounding features, and a certain fanciful and toy-like aspect. To compare it with the bare, rectangular, white-painted and green-blinded wooden dwelling that has grown up indigenous in these United States seems a far cry; and yet the fundamental principle which gave birth to the two is identical, - namely, the logical attempt to meet in wooden architecture the needs of climatic conditions as simply as possible. Indeed the most direct way to examine the typical features of the châlet is, perhaps, to take up the successive conditions which the Swiss builders were forced to meet, and to observe how they have met them.

Wood, as a material, was almost forced upon them, both by its plenteousness and by the difficulty of transporting stone to the inaccessible heights where the dwellings were required to be niched. But wood once accepted by


MOUNTAIN VILLAGE SWITZERLAND
them as a material, they did not, like our New England builders, strive to conceal the constructive features which it necessitated, by an uninteresting veil of clapboards and by a further coating of paint, but on the contrary emphasized the constructive skeleton to its utmost. The brackets which support the roof are enormous; the floor-beams, the division intostories, show from the front, and nothing of the framing of windows is hidden. The wood itself too, instead of being painted, is left in its natural color, merely being treated with a preservative coating of linseed oil, and thus the exteriors of these châlets have acquired with age an exquisite tone which makes the habitation a thing in natural harmony with its surroundings.

The climate of such a mountainous country as Switzerland, where both rain and snow are abundant and the winter is very cold, induced other marked peculiarities in the châlet. It was necessary to protect the wooden walls against moisture, and this necessity



STREET IN LAUTERBRUNNEN
variously modified the shapes of the roofs according to the climate and altitude of the situation. In the châlet of the plain, the roof is very steep and high, built to allow the rain water to run off rapidly. The eaves are brought forward to shelter the front, and the steep slope causes the rain to run immediately into the gutters instead of remaining on the thatchplanks. This type of roof is extremely graceful, and not only very picturesque in its outline, but it is the sole logical and rational form under the conditions.

In both types of roof, the extension of the eaves, originally intended merely as a protection for the walls, was exaggerated by the Swiss builders, until the roof often projects from four to ten feet on the front, and on the sides sometimes it is so widely extended as to come down within three or four feet of the ground, where it is supported by posts. The sides being thus amply sheltered galleries and balconies are placed there, and an exterior stair-case is not an unusual feature. There are also occasionally small balconies on the front, but


CHÂLET
On the other hand, in the châlets built for the mountain sides where snow is heavy and abundant, roofs instead of being built so as to throw off the snow, are flattened that the snow may accumulate upon them and by its covering protect the dwelling from the extreme cold. These flat roofs are accordingly usually crossed by long, horizontal beams projecting beyond the house and forming ledges against which the snow may rest, though in some cases, large stones laid at intervals not only serve the same purpose, but weight the roof against the mountain gales.
only on the upper story where they may be sheltered by the roof.

The dormer windows are typical of the exaggeration of the constructive elements in Swiss architecture. The shape of the covering of the dormer suggests the entire roof. It has its brackets and pendentives, and indeed is in itself a complete piece of architecture. Out of a necessary opening in the roof the châlet architect has, by merely emphasizing the constructional motives, had the skill to make an important element of architectural decoration. A similar feature, not only useful but decorative,



CHALET
SWITZERLAND
which is observable in the Swiss châlet is the pent-house which often runs along the front above the windows on small brackets, following the horizontal framework and emphasizing the division of the building into stories, and at the same time protecting the upper part of the windows from the rain. Indeed so logical has been the development of even the most picturesque constructional features of the Swiss châlet that in only one of them, the grouping of the windows, do we find the builder freely exercising his fancy and personal taste. Here the designers have produced some charming varieties in grouping and form. The windows are sometimes double, sometimes triple, and very often quadruple and in a single frame, but even here it is possible to find a logical reason for their disposition, for the châlet has usually only two stories with


CHÂLET
low ceilings, and whereas high and wide bays are not admissible under these circumstances, a series of small connected windows gives better light and has a more pleasing effect from the inside.

We see, therefore, that on the whole, Swiss châlet architecture is constructional, - the thoroughly logical outgrowth of conditions. Symmetry is absolutely subordinated to usefulness, and all organic parts of the construction are emphasized, sometimes even to grotesqueness.

The decoration of the exterior by carving, painting and panelling only emphasizes the organic members. It accentuates the lines, adds force to the


CHALET
SWITZERLAND
shadows and brightens the light parts. In the plain and empty spaces of the front and on the flat sides of the consoles it expands into carving of the most decorative character.
"The ingenious fancy of the Swiss carpenter-architects has been pleased to infinitely vary the types of châlet," writes M. Jean Schopfer, "but they have always remained faithful to the spirit and requirements of the art of building in wood. They have not attempted to apply to wood the law of stone architecture, and it is to this fact that we owe the beauty, the elegance and the originality of the Swiss châlet, which holds a place quite apart in the history of architecture."



|N a mighty plain which stretches between the ranges of the Lebanon and anti-Lebanon in Syria, lie the temple-crowned ruins of Baalbec, once the splendid pagan city of Heliopolis. History is silent concerning its birth and silent as to its decline. Wars and earthquakes have spoliated it and barbarians have made it their quarry; but even as it stands, mysterious, forsaken and desolated, "there is no other ruin," says a recent traveller, "which to the architectural eye, exhibits so much grandeur and at the same time so much beauty."

Standing flat on the plain, with the surrounding hills towering above them, the noblest structures would have looked low and stunted; and, recognizing this, the ancient architects, before beginning their great temples, built a mighty substructure or platform for them, upwards of eight hundred feet long, five hundred and fifty feet broad, and from thirty to fifty feet high, and in itself one of the constructive wonders of the world. The Arab guides point out the enormous blocks which compose it, and tell you
that Solomon, aided by his genii, did the work; but, though it is not impossible to believe that the great King fostered the city, there is nothing to connect it with his name.

But whoever may have built the pedestal, every fragment of the two temples which crown it speak of Imperial Rome. Trustworthy evidence is, however, wanting as to which Roman emperor it was that made Heliopolis so glorious and lavished upon her the riches of a kingdom. John of Antioch states that "Antonius Pius built at Heliopolis, in Phœnicia of Lebanon, a great temple to the God Jupiter, it being a miracle and one of the wonders of the world "; and though he is not an unimpeachable authority, there is no good reason to contradict his statêment, which is borne out by indirect evidence and by the late, florid character of the architecture itself. The historian's statement evidently refers to the smaller of the two temples, which taken together form undoubtedly the most magnificent group of their class and age extant: but it is probable that they


RUINS OF BAALBEC
GENERAL VIEW


PILLARS OF THE GREAT TEMPLE
are both of approximately the same period.

The larger of the temples was probably dedicated to Jupiter under the form of the Sun, and another historian tells us that the "Assyrians worship the Sun with great magnificence under the name of Heliopolitan Jove, and that their statue of their God was brought from a city in Egypt also called Heliopolis." The proper name by which this larger temple should be known - it seems to have been a sort of Pantheon - is still a point of dispute among archæologists, but, if least picturesque, the title of the Great Temple seems also the least confusing, and we shall use it here; while the smaller temple we shall call by its common appellation, the Temple of Jupiter.

The Great Temple, though much the larger and originally the more impressive of the two, is at present practically non-existent. There remain standing
solitary among the fallen debris only the six beautiful Corinthian pillars shown in our illustration. These are fifty-five feet high, each shaft is twenty-two feet in circumference, and the remnant of the entablature on top is fourteen feet high.

It is still possible to trace the original plan of the Great Temple from the remains of its foundations. It was approached from the east by a noble flight of steps which joined a long narrow portico, entered under a row of twelve pillars. Beyond this portico opened a hexagonal hall surrounded by exedræ. From the hexagon a spacious, and what must have been from its remains a superb portal, opened into the great quadrangle or central portion of the temple, which was four hundred and eleven feet long and four hundred and forty feet broad, and surrounded on three sides by exedræ in which statues stood and fountains spouted. At the further end of this quadrangle rose a broad flight of steps leading to the next division of the building. In ordinary Roman temples this last apartment would have been the cella, but no cella walls were apparently constructed here. It was merely a broad esplanade with a noble range of pillars surrounding it. If ever completely finished, which seems improbable, this temple must have been only inferior to that of Jupiter Olympus at Athens.

Between the Great Temple and the smaller Temple of Jupiter (small only in comparison, for it is larger than the Parthenon at Athens), a wide space intervenes, - a space now literally piled with fragments of columns, capitals,



TEMPLE OF JUPITER: SOUTHEAST CORNER



TEMPLE OF JUPITER, INTERIOR
BAALBEC
friezes and entablatures flung down from both temples by successive earthquakes. Compared with the other it is in an excellent state of preservation, and we can trace its apartments, decoration and architecture with certainty. Indeed, travellers say that under the deceptive lighting of the moon it looks " as if just finished by the builders and ready for the great Emperor, Antonius Pontifex Maximus, to consecrate it to almighty Jove."

Its exterior length is two hundred and twenty-eight feet, its exterior breadth one hundred and twenty-four feet. The peristyle not only was, but is magnificent. Forty-eight columns originally surrounded the cella, a double row of eight at the east front forming the vestibule. At the present, twenty-three of these stately Corinthian pillars remain standing in positions which the accompanying photographs will show. These columns are forty-five feet high, and eighteen feet in circumference. The entablature is seven feet high, and consists of a double row of frieze. The total height of the temple must have been about seventy-five feet.

Architecturally the gem of Baalbec is the portal which leads under the double columns of the vestibule into the interior. This portal is twenty-one feet wide; the sides are each of a single stone, and the soffit consists of three, the centre of which slipped out of its place in the earthquake of 1759 , and remained jammed between the two side stones. It has since been supported by a rude pier of masonry which greatly mars the effect of the portal as a whole. The sides and top of this portal are covered with beautiful carving, of which one architect, Mr. David Roberts, who has sketched it says: "It is perhaps the most elaborate work as well as the most exquisite in detail of anything of its kind in the world." The walls of the interior are divided by a series of engaged Corinthian columns with superbly finished capitals; and between the columns are niches in double stories, the lower with circular heads, divided from the upper by an elaborately carved cornice, breaking at the columns and running like a string-course around the temple. The whole is enriched with an amount of ornamentation that in its
perfect state must have been gorgeous.
For nearly four hundred years after the Christian era, sacrifices were offered in these two mighty temples of Heliopolis, and Christian writers draw strange pictures of the magnificence and immorality of the rites. Then came Theodosius the Great, "destroyer of heaven temples," and a brief chronicle tells us that he dismantled the Great Temple, and converted the Temple of Jupiter into a Christian church; and the cross was erected where the statue of the Sun-god had stood.

Heliopolis seems to have continued a place of importance down to the time of the Moslem invasion of Syria. It is described as one of the most splendid of Syrian cities, enriched with stately palaces, adorned with monuments of ancient times, and abounding with trees,
fountains, and whatever contributes to luxurious enjoyment.

The exterminating conquests of Mohammed, however, forever quenched the lamps that had burned before the altars of the City of the Sun, darkness covered it for three centuries, and silence blotted out the name of Heliopolis from history. When it once again emerges, men call it Baalbec, and earthquakes have thrown down its structures. Then successively Saladin took it, and King Baldwin and Count Raymond besieged it, and Tamerlane bade its citizens surrender; and finally another century and a half of darkness rolled over it like a cloud shadow, and its name was no more mentioned, until a Frenchman, Belar, rediscovered it in ${ }^{1548}$, and found it as it now is, like another Babylon, fallen forever from its high estate.



## NOTRE DAME CATHEDRAL, PARIS

THE great Cathedral of Notre Dame, the mother church of Paris, in which the different details of all her other churches were bound up and wrought into harmony, seemed to rise swiftly into being and grow to full perfection almost without the marring of a single line. Its history is brief. Though founded in 1163 on the site of a fourth century church, the present structure is chiefly of the earlier thirteenth century. The present façade, the finest part of the building, dates from the beginning of that century.
"This vast and superb design," writes Professor Moore, " is not only the most elaborate that had been produced up to its time, but, in point of architectural grandeur, it has seldom been equalled. The general scheme is still the same as that of the Abbaye-auxHommes, but the component elements are treated in such a way as to manifest the Gothic spirit in every part. The Romanesque characteristics have completely disappeared from the apertures, the arcades, and even from the moulding profiles. Three majestic portals on the ground story; a magnificent arcade, sheltering twentyeight colossal statues, and reaching across the entire front, over them; a vast wheel, with open tracery, in the central upper compartment, with twin pointed openings and a small circle embraced by a great pointed arch in each lateral bay; an elegant, though gigantic, open arcade carrying the main cornice, together with the towers above, each pierced with coupled

JUDGMENT PORTAL

pointed openings, - make up a most impressive architectural composition."

Notre Dame stands upon a little island in the Seine, and its situation marks the cradle of the present city. The site was originally occupied by a Roman temple. It is said that a Christian Church was first erected on the spot about 365. This original structure was enlarged in 522 by Childebert, son of Clovis; and Robert, son of Hugh Capet, undertook to rebuild it. It was then that it was named Notre Dame from a chapel which Robert dedicated to the Virgin. This first church was, however, never finished, and fell into ruins. The first stone of the present edifice was laid about 1163 by Pope Alexander III., and only about twenty years later, in 1182, the high altar was consecrated,

and the use of the cathedral for public worship was begun. In 1257 the north door and the façade were commenced under the direction of one Jean de Chelles; by 1223 the great entrance was finished and St. Louis completed the towers. These towers were originally meant to support two spires (Vioilet-leDuc has published a very interesting drawing, showing how they were probably to have been carried out), but when once their long light arches had been crowned by the square cornices carved upon their summits, they seemed so to "take hold upon the vacant air that nothing could be added to impair their symmetry," and with rare forbearance they were left unfinished. The southern transept and its portal was completed in 1257 , and the north transept and portal in 1312, by Phillip the Fair. It was not however until 135 I that the glass and decoration of the choir were finished by Jean and Ravy le Boutillier-it is worth mentioning their names because so few names of the workmen have come down to us
The building suffered sadly during the French Revolution. It was converted into what was called the "Temple of Rationalism," and a ballet-dancer sat enthroned as the Goddess of Reason on the high altar, and received the worship of her votaries. Indeed, in 1793 , a decree was passed which condemned the venerable structure to be demolished, but this decree was afterwards revoked and only the sculptures were destroyed. In 1871 Notre Dame was again desecrated, this time by the Communists, who when they were compelled to retreat, set fire to it. Since 1845 the church has

been excellently restored by the worthy hands of M. Viollet-le-Duc and his associates, who did their work sympathetically and wisely. The present graceful rood spire was also built by Viollet-leDuc in place of the original one.

Such is the brief history of the chief events in the life of the great church. It seems to have risen in the first place like a poem smitten into stone, a poem that resumed the whole civilization that produced it. "It is almost the last of that great story in stone which began before the Pyramids and seems ended with the last of the great Gothic churches. When the book had killed the builder and the ruled lines and spaces of Mansard, and the theories of the seventeenth century finally crushed out the originality which had moved the mas. termasons, and the beautiful lines of art gave place to the cold and inexorable tracings of geometry." The buildings of the Renaissance were for kings and courtiers. They were built not by the people but by scientists. They were halls of etiquette and ceremony in which the people had no more part than they had sympathy with their construction or understanding of their uses; but in this great Cathedral, the very names of whose creators are unknown, individuality is lost and the sum of human intelligence of that day is garnered up. "Time," wrote Victor Hugo, "was the architect, the nation was the mason."

On Notre Dame, in consequence, is stamped the very nature, the originality, and the knowledge of the people. She became to her builders a great symbol, filled with tokens which every soul and



SMALL ROSE WINDOW IN FAÇADE
NOTRE DAME
eye could comprehend. "The stone crieth out of the wall, and the beam out of the timber answereth it." Roof and building, arch and portal were adorned and written upon without restraint, and here the ideas of a nation such as are now scattered broadcast by the press, found their chief expression under the hand of the mason who was poet, and painter, and sculptor all in one. In the massive unity of the whole, in the beauty of its details every man might read as a book the motives, the daily occupation, and the beginning and ending of his life. Upon the central portal of the façade, for instance, called the Portal of Judgment, were carved the vices and the virtues - the knight spurring on his restive horse; the coward flying from a hare; the monk leaving his cloister; Hope looking up to heaven; Valor in chain mail; and the kings and great ones of the earth going down to hell. Upon the Porte de la Vierge, which flanks this central Judgment Portal on one side, was cut a very calendar of the workman's tasks, each month represented by its appropriate toil; while upon the Porte Sainte Anne which flanks it on the other, the sculptor, so the legend goes, was none other than the devil himself, who, invoked by the workman to whom the task had been allotted, carved all but the central panel which he might not touch, for under this passed the blessed sacrament.

As the walls rose higher and higher the fancy of the artist and his workmen became still more and more unfettered, and when the line was reached from which the gargoyles* first began to strain out of the stone, the carving was no more devoted to allegory and portraiture, and strange beasts unknown to earth or sea, stretched forth from every corner. The high and frail gallery of open-worked arches, supporting on its delicate columns a heavy platform, and, above, the two dark and massive towers, with their slated pent-houses: assuredly there are few more beautiful pages in architecture than this façade.

The harmonious parts of this magnificent whole with their innumerable details of statuary, sculpture and carving, present as Victor Hugo has written, " an overwhelming yet not perplexing mass, combining to produce a calm grandeur. It is a vast symphony in stone, so to speak; the colossal work of man and of nation, as united and as complex as the Iliad and the romanceros of which it is the sister; a prodigious production to which all the forces of an epoch contributed, and from every stone of which springs forth in a hundred ways the workman's fancy directed by the artist's genius, - in one word, a kind of human creation, as strong and fecund as the divine creation from which it seems to have stolen the two-fold character, - variety and eternity."

[^3]

DETAIL OF TOWER
NOTRE DAME


NOTRE DAME CATHEDRAL: CLUSTERED PIERS


BY USING

## GILLESPIE'S

 PERSPECTIVE CHARTSHESE charts are the result of the development and perfection of labor saving methods which I have used for years in my professional work. In preparing them for publication, I have kept in view their adaptability for all the problems in perspective ordinarily arising in an architect's practice, and feel warranted in offering them as an indispensable adjunct to an office. The pads will be found useful in studying designs in perspective and in preparing outlines for preliminary sketches in pen, pencil or color. The charts, while answering this purpose also, may be used in the preparation of nearly all kinds of large perspective drawings. Transparent diagrams accompany the charts for reading the dimensions on plans and elevations. A knowledge of perspective is not essential to the use of this system and every architect and draughtsman should investigate its merits. A descriptive circular will be mailed on application. The system comprises interior angular, parallel, bird's eye view, and exterior angular (two charts) perspective.

## PRICES

Large Set of Five Charts, $\quad \$ 5.00$
Size, $22 \times 28$ inches, Bristol board.
Small Set of Five Charts, 75
Size, inxi4 inches, thin paper.
Pads of 50 Sheets, $11 \times 14$, each, 1.25
Five different Pads,
5.00

Large Set and Five Pads, 10.00

## G. CURTIS GILLESPIE

ARCHITECT
7 Warren Street, New York


INCOMBUSTIBLE CABINET WORK (Philadelphia City Hall)

Art Metal Conftruction Co. Jamestown, N.Y.


Peabody \& Stearns, Architects, Boston.

The set of half-tone plates recently issued by us (one of which is shown above), of houses stained with

## Cabot's Shingle Stains

will be sent to any architect or draughtsman on request. \& They show some interesting examples of recent suburban architecture, by leading architects, and are displayed in a nove 1 and effective manner.

SAMUEL CABOT, Boston, Mass.

## Result of Tests

## Made at

The Massachusetts Institute of Technology, Boston
DUPLEX JOIST HANGER for joist $6 \times 12$ failed at 39,550 lbs. Wrought Iron Stirrup, $3 / 821 / 2$,
Van Dorn Steel Hanger,
Patterson Bros., 27 Park Row, New York City, carry a complete stock of Duplex Hangers in all sizes.


Write for a verbatim report of tests and catalogue, to
The Duplex Hanger Company, Cleveland, Ohio.



## Fireplace Mantels <br> $\$ 12.00$ and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co.
P.O. Box 8929.

Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted.
It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




Geo. W. Maher, Architect, Chicago.

## ase <br> Dexter $\operatorname{JBrothers}^{\prime}$ English $\mathfrak{w b i n g l e ~} \mathfrak{W}$ tains

ON ALL SHINGLED SURFACES
INTERIOR STAINS A SPECIALTY
Send for sample boards and color plates to

## Dexter $\mathfrak{J b r o t b e r s}$,

55 and 57 Jbroad $\mathfrak{w t r e c t , ~ J b o s t o n , ~} \operatorname{ITsags}$.

## Folsom New Model

 Snow Guard.
Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.

> Faneuil Hall, Old South Church, King's Chapel, Boston, Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

Every three feet of

# The best SASH CORD Made 

Is now marked

## SILVER LAKE "A"

Architects
can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish Shipoleum for Staniing Finish

White Enamelite An Emamel Patint for Colomial Interiors.

Send for our "Suggestions" on Wood Finishing and our booklet, " The Treatment of Floors." You will find them of service.

## Notes.

## American Bridge Company News.

The American Bridge Company report a large number of important contracts closed during March, among which are three thousand tons of structural steel for the new Astor Building at Fifty-fifth St. and Fifth Ave., New York; four thousand tons of bridge work for the Chicago \& Alton Road; twenty-eight thousand tons of bridge work for the New York Central \& Hudson River R.R., this being the largest single contract for bridge material ever let by any railroad company in the United States.
The foreign trade of The American Bridge Company is developing rapidly. Within the past few days they have contracted for twenty thousand tons of bridges for the Guayaquil \& Quito R.R., Ecuador; a large group of buildings for a Mexican mining company; several large manufacturing buildings for Australia; and a large railroad bridge to go to the Sandwich Islands. An engineer of the Company recently sailed to consummate arrangements for a large foreign contract for which their tender has been accepted. The officials of the Company withhold details until the contract is definitely closed, but state that it exceeds in size anything they have yet taken.

## N. \& G. Taylor Co.'s Tinplate Works.

The N. \& G. Taylor Co., Tinplate Manufacturers, have just erected at their Tinplate Works in Philadelphia, a large and commodious machine shop complete in every way with the most modern machinery turning lathes, drills, shapers, forges, emery wheels, etc. They have also lately added two tinning stacks, making now twenty-five in all. Their tinhouse is acknowledged to be in its complete equipment, the finest in the world. They are running to their full capacity and report a most excellent business in all their departments. They have also given out the contract for an additional building for their assorting and warehouse department, which will give them much greater facilities for prompt handling and shipping goods. The recent large additions to their rolling mills at Cumberland, Md., necessitate the above improvements.

In The Architectural Reviez for April the illustrated article on Lettering in Ornament, by Mr. Lewis F. Day, is concluded, and Mr. Edward R. Smith contributes another article in his series upon Architectural Books. The plates reproduce a rendered elevation, working drawing and detail of the San Diego Public Library by Ackerman \& Ross, two elevations, plans and section of the Students' Hall, Columbia University, by McKim, Mead \& White, and two drawings by York \& Sawyer for the competition for the Naval Branch of the Y.M.C.A., Brooklyn, N.Y. The department devoted to a review of current architectural periodicals is, as usual, well filled with carefully selected illustrations of the buildings criticised.

Theillewldea $\mathrm{Hince}^{\text {Hiwe }}$

Strongest, simplest, neatest, most durable. Door swings on fixed pintle-cannot sag. No other hinge so good.
Builder's Catalogue mailed Free.
Stownm Mfy, Boa,
1'\&1River St.,
Freeport, Illinois.

SEND FOR OUR CATALOGUE OF FLY SCREENS
Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.
 MADE OF STEEL GALVANIZED, $\frac{1}{16}{ }^{\prime \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS.
MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY

## WHITE TERRA COTTA

of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.

## WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

## RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## THE " PHENIX HANGER'

## solves the problem of

How to Hang Storm Windows and Entire Screens.
It's the "Housewife's Joy" for clean windows.
Ideal Ventilation. Solid Comfort.
Send for Catalogue.
PHENIX MFG. C0.,
028 Centre St.,
MILWAUKEE, WIS.

For All Laundering Purposes


THE LOGICAL RESULT OF ITS SUPERIOR QUALITIES.

Postal for Circular and Color Card. THE CARTER'S INK CO., BOSTON, MASS.


PLIIIN OR ORNHITIENTRL Thick or Thin

We have representatives and stocks of floors in the leading cities. Write for Prices and Book of Designs.

## FLOORS

THE INTERIOR HRRDWOOD CO., Mlanfis.
INDIANAPOLIS, IND.



## King -Edward VII.

The new King of England, uses a Rider Engine in his palace at Sandringham. The Khedive of Egypt has a Rider Engine at Ras-El-Tin palace at Alexandria, Egypt. The Paris Exposition gave the highest medal of its class to both our Rider and Ericsson Engines. * * * Rider and Ericsson Hot Air Pumping Engines are appreciated in other countries besides their own apparently. $* * *$ Catalogue "A 8 " on application to nearest office. $* * * * * *$


## Rider-Ericsson Engine Co.

22 Cortlandt St., New York 239 Franklin St., Boston 22 A Pitt St., Sydney, N.S.W. Teniente-Rey 71, Havana

40 Dearborn Street, Chicago 40 N. 7th St., Philadelphia 692 Craig St., Montreal, P.Q.
Merchant and Alakea Sts., Honolulu

## THE <br> BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION



HIERONYMITE CLOISTER: BELEM MARIE ANTOINETTE ROOMS

INTERIORS OF DERBYSHIRE CHURCHES GLIMPSES IN ITALIAN GARDENS

BATES AND GUILD COMPANY BOSTON MASS.

## THEATRES

Their Safety from Fire and Panic; their Comfort and Healthfulness
By William Paul Gerhard, C.E.

THE provisions for the safety, comfort and health of the occupants of theatres are subjects of unquestioned importance. 1 Mr. Gerhard is the leading American authority on these subjects and has devoted years to their study, the fruit of which is given in the present work.

THE author takes up in detail the question of safety and shows means by which present unsatisfactory conditions may be remedied, and discusses the following topics: means of escape; measures tending to prevent fire and for quickly detecting and signaling one which may occur; protection of the audience and stage personnel from fire and smoke; localizing and restricting fire; means for saving life, fighting fire and guarding against panic. Under comfort and sanitation the following topics are treated in like manner; the unsanitary condition of thearres; ventilation, heating and lighting; floors, floor coverings, walls, ceilings and furniture ; dressing rooms ; drainage, plumbing and water supply; removal of refuse ; cleaning, dusting and sweeping; and periodical sanitary inspection. THE treatise is an important reference book, and a copy of it should be in the library of every architect, theatre
manager, building and fire department, and in all public libraries. Size $6 \times 9$ inches, no pages, bound in green cloth.

## Price, $\$ 1.00$, Postpaid

BATES \& GUILD CO., 42 Chauncy St., Boston

## STRATHMORE PAPERS

Visit the Strathmore Exhibit at the Pan= American Exposition, Buffalo, N.Y. Graphic Arts Building * Original Draw= ings by Noted Artists on Drawing Board, Illustrating Board and Charcoal Paper

WRITE FOR SAMPLE BOOK OF STRATHMORE Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS

SUBSCRIPTIONS: Subscription price, $\$ 1.00$ a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$ 1.50$. Single copies, to cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for 1897,1898 , 1899 and $1900, \$ \mathrm{~T} .00$ each. Bound Volumes, in specially designed buckram covers, for 1896, $\$ 3.50$ : for $1897,1898,1899$ and 1900, $\$$ t. 75 each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September Igoo, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## Michelangelo as Sculptor and Painter.- Corot.

"Masters in Art" for May illustrates the paintings of Michelangelo, and thus supplements the April number of that Series, which dealt with his sculpture. Of the sculpture number the Boston Transcript said: "Finer pictorial copies of these famous sculptures could hardly be desired;" and added that the number as a whole was "one of the most complete and compact handbooks of Michelangelo's sculptures that had ever been printed." The May number, illustrating his paintings, will be found equally interesting and adequate. Indeed, it has been possible in this monograph to completely exemplify the master's works with the brush, for with the exception of two inferior frescoes in the Pauline Chapel, Rome, he only wholly finished three paintings - the "Holy Family" in the Uffizi Gallery, the "Last Judgment" in the Sistine Chapel, and the splendid ceiling of that same chapel, which last is unequalled in the entire history of art for boldness and grandeur of conception. Reproductions are given of both the "Holy Family" and the "Last Judgment," while eight plates of details, together with a diagram of the whole, are devoted to showing the ceiling.

Naturally Michelangelo's genius has had the effect of inspiring his commentators; and the text of the number, which comprises picked quotations from what the greatest critics have said of his art and achievements, is unusually eloquent and forcible. These two numbers of "Masters in Art" taken together form perhaps the most complete, thorough and valuable illustrated estimate of Michelangelo's work that exists in any popular form. The two numbers will be sent together, postpaid, for thirty cents. Fifteen cents each.

The June issue of "Masters in Art" will
illustrate, with an appreciative and critical commentary, the work of the most charming landscapist of modern times - "the poets' painter" as he has been aptly called - Corot. Ten representative works are shown in the plates. Ready May 25. Price fifteen cents, postpaid.

## NOTES

Messrs. Shepard, Norwell \& Co. of Boston have recently made important additions to their department of upholstery and interior decoration, and particularly invite architects to inspect their large line of curtains, wall hangings, draperies, etc. They are in position now to carry out entire schemes of decorating and furnishing to accord with the architectural character of a house, even to the selection of table service - linen and china and glass. Designs will be made for each detail of the furnishing and be submitted to the architect for his approval. They have already achieved no little success in this line of work and their careful co-operation with architects has inspired a feeling of confidence which is bringing them many important commissions.

The Stover Manufacturing Co. report several large buildings in which their New Idea Double Acting Spring Hinge has satisfactorily met for several years the hardest of tests, among them being the Union Passenger Station, St. Louis, the Capitol at Washington and the Philadelphia Bourse Where low price is the chief factor in competition, the New Idea is not always successful, as it has to be too carefully made to sell with cheap hinges, but it can hold its own where strength and durability are the factors that decide selection. This hinge is quite largely sold for export, and recently the Stover Manufacturing Co. made two large shipments to London and Hamburg.

# The Architectural Review 

For MAY, 1901



House at Brookline, Mass.
Chapman \& Frazer, Architects.

ARCHITECTURAL BRICKWORK from the standpoint of a Constructing Engineer. By Capt. John S. Sewell, U.S A. Captain Sewell of the Engineer Corps of the U.S. Army, has had charge of the erection of a number of important Government buildings; and in this article gives the results of his experience, in the shape of practical suggestions, with special illustrations, which will be found of value to all who have occasion to use brickwork in building operations.

OTHER ILLUSTRATIONS. Besides the illustrations in the usual Editorial Departments, there are also ten illustrations of two extremely interesting suburban houses, one in California, in the style of the Spanish Missions, the other in Brookline, Mass.

PLATES. Eight full-page gelatine plates are devoted to the working detail drawings of the new Memorial Hall at West Point, N.Y., by Messrs. McKim, Mead \& White, one of their most successful designs; and to the interior details of the residence for Henry W. Poor, Esq., at Tuxedo, N.Y., by Mr. T. Henry Randall.

50 cents a copy. $\$ 5.00$ a year

Bates \& Guild Company, 42 Chauncy Street, Boston

## "The Georgian Period"

This publication, which now consists of seven Parts, contains more than a hundred pages of text, illustrated by some two hundred and fifty text-cuts, and two hundred and forty-nine full-page plates, of which fifty-five are gelatine or half-tone prints. It is in truth a work of superior excellence and great usefulness.

The matter already illustrated may in small part be classified thus :


Incidentally there are shown special measured drawings or large views of the following features and details:-Porches and Doorways, 54 subjects; Staircases, 18 subjects ; Mantelpieces, 76 subjects ; Pulpits, 6 subjects ; Fanlights, 60 subjects.
In addition to the subjects enumerated above there is a large quantity of measured and detailed drawings of Cornices, Ironwork, Gateposts, Windows, Interior Finish, Ceiling Decoration, Capitals, etc., together with elevational and sectional views of entire buildings.

The Drawings in this publication have been made by such well-known draughtsmen as

DAVID A. GREGG<br>FRANK E. WALLIS<br>WALTER M. CAMPBELL<br>CHARLES L. HILLMAN<br>P. G. GULBRANSON

JAMES ROSS
E. ELDON DEANE

JOHN C. HALDEN
FRANCIS S. SWALES
CLAUDE F. BRAGDON
PRICE

| Vol. I | Part | I | \$3.00 | Vol. II | $\left\{\begin{array}{rrrr} \text { Part } & \text { V . } & . & \$ 4.00 \\ ، & \text { VI . } & . & 6.00 \\ ، & \text { VII . } & . & 4.00 \\ " ، & \text { VIII . } & . & 6.00 \end{array}\right.$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ، | II | 6.00 |  |  |  |  |  |
|  | II | III | 4.00 |  |  |  |  |  |
|  | " IIII | III | 6.00 |  |  |  |  |  |

Bates \& Guild Company, 42 Chauncy Street, Boston


## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford \& Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

# KEASBEY $\mathcal{E}$ MATTISON CO. 

 AMBLER, PENNA.NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE

Authorized Selling Agents
BOSTON.
s. C. NIGHTINGALE \& CHILDS

ST. LOUIS, OMAHA.
PHILADELPHIA, MAGNESIA COVERING CO.
BALTIMORE, BALTIMORE, WALLACE \& GALE RICHMOND CHARLESTON,

## Details of Building Construction

Ey CLARENCE A. MARTIN<br>Assistant Professor of Architecture at Cornell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper ioxi2 $1 / 2$ inches, and substantially bound in cloth.

Price, Postpaid, $\$ 2.00$
Bates © Guild Co., 42 Chauncy Street, Boston, Mass.

HIERONYMITE CLOISTER: BELEM
MARIE ANTOINETTE ROOMS
INTERIORS OF DERBYSHIRE CHURCHES GLIMPSES IN ITALIAN GARDENS


# THE <br> Brochure Series 

OF ARCHITECTURAL ILLUSTRATION

## MARIE ANTOINETTE ROOMS

TO describe under the above heading apartments, many of which were built in the reign of Louis XV. and originally furnished and decorated for his favorites, and which were, after Marie Antoinette's execution, despoiled during the Revolution, and only restored in comparatively recent years to anything like the condition they were in during her occupancy, seems, to say the least, a misnomer; and yet the title, though it may be considered misleading if taken in the strictest sense, is not unjustified.

Marie Antoinette, as the bride of the dauphin, who was later to become Louis XVI., arrived in France in 177o. She was then only fifteen years old, and though neither as fascinating nor as beautiful as she later became, was gay, amiable, unaffected and charming in the graces of her first youth.

Although her advent occurred four years before the end of Louis XV.'s


PANEL, GRAND SALON PETIT TRIANON
reign, the style to which his name has been given had run its course and already become gradually changed into that which we now know as the Louis XVI. The taste for purer classicism had come to be vogue, and the more delicate, carefully proportioned and simpler lines and ornament of the latter style had supplanted the heavy and ornate curves of the former. Indeed we may say that the Louis XVI. style was contemporaneous with Marie Antoinette's residence in France, for as it only became completely individual at the period of her arrival, so it ceased with her death.
We are enabled to make a very definite conclusion as to the point of development the new style had reached in 1770 from the detailed accounts which have come down to us of the first gifts which were made to the young princess by the monarch and by his son, the dauphin. The chief among these was Louis XV.'s present of a beautiful and
elaborate jewel casket. A brief glance at the history of the construction of this piece will be enlightening, not only as evidence of what the style was at that time, but as showing what care and skill went toward the manufacture of the more important pieces of furniture and cabinet work intended for the use of the court.
The oversight of the design and decoration of the work was entrusted to the famous Duke d'Aumont, a noble, a man
first drawings according to his superior taste, d'Aumont next had a white-wood model made showing the sculptured ornaments in wax, and this model was then entrusted to the most celebrated cabinet-maker of that day, Ewalde, who constructed the woodwork of the casket. The frame was then handed over to the court upholsterer, La Roue, who fitted it with panels of silk brocade and lined and tufted the interior. Thereupon the casket was in turn forwarded to


MARIE ANTOINETTES SMALL SALON
of fashion and of the court, who was an amateur collector of all things beautiful, and the authority of his day in matters of taste, and who had become, as it were, a connoisseur by profession. The duke had recommended a jewel casket as the most appropriate gift for the young princess; and Louis, agreeing, put the task of supervising the work into his hands. Having outlined the project in accordance with his own conception, the duke first ordered Bocciardi, the royal cabinet-maker, to submit designs. Having modified Bocciardi's

Gouthière, who added as final decorations, some of the exquisite bronze sculptures for the making of which his name is still famous. Designs for some of these reliefs were made by the sculptor Houdon. To the student of the furniture of this time these names will prove instructive. They were noted not only in France alone but throughout the polite world of Europe for art and craftsmanship.
The drawings for this cabinet, which still exist, prove conclusively, as we have said before, that four years before




PANEL in marie antoinette's apartments VERSAILLES
the close of Louis XV.'s reign, the style which we now call the Louis XVI. was already well determined.

It is greatly to be regretted that this exquisite casket has disappeared, not only because of its intrinsic beauty, but also because of its historical significance. It was sold under the Directory by the then Minister of Finance, who charged his agent to dispose of it in the interest of the Republic for the highest price possible, adding with some irony, that the insignia of the fallen monarchy which it bore should make it realize an extra price.

When Marie Antoinette ascended the throne the Louis XVI. style was thus practically fully developed. The decorators and furniture makers of the time naturally looked to her as their patron; a post which she was far better fitted to occupy than was her husband, of whom
we have no record that testifies to his ever having exhibited in any way a cultivated taste in the arts, and of whom perhaps the best can be said is that his stupidity in æsthetic matters was honest. The queen shone the more brilliantly by contrast. Thoroughly acquainted with the literature of her day, she was so acute a critic that in one or two cases her verbal judgments upon works of note have been handed down and prove worthy of their preservation. Men of letters found in her an enlightened protectress. It was she who warmly encouraged the first poetic flights of the Abbé Delille, and who on Voltaire's return to Paris tried hard, though unsuccessfully, to induce the king to receive him at court. Her liberal patronage of music and the predilection which she showed for the society of its leading exponents, Gluck in particular, sufficiently testifies to her


PANEL IN MARIE ANTOINETTE'S APARTMENTS versailles


DOOR DECORATION
appreciation of that art. Her love for the theatre has been so much written about as to require no comment here. In her little bijou play-house at the Trianon she arranged every detail of the scenic costumes and mounting with such unusual taste that the Prince de Ligne, who knew all the principal theatres in Europe, unhesitatingly declared that Watteau himself had never imagined a more exquisite picture than her stage presence presented on one occa sion when the queen acted.

The records concerning Marie Antoinette bear less direct evidence of her influence over the art of the time than over drama, music and literature; but we know that she drew with no mean ability; and there is sufficient indirect evidence from the pieces of furniture of her ordering which still remain, and from descriptions of other pieces, now unfortunately lost, to prove that in this department as in others she was fit to take the place of leader of the fashions in art.

She could not, however, give full sway to her taste immediately upon her accession to the throne. When she became queen France was still suffering from the disastrous Seven Years War, and its finances had been hardly less depleted by the insensate prodigality of Madame
de Pompadour and Madame du Barry, the late king's favorites. Marie Antoinette was for some time, therefore, obliged to content herself with choosing for the adornment of her rooms such pieces of furniture as were already stored in the royal Garde-Meuble, which had the care of the furniture belonging to the crown, an institution which still exists. What pieces she then chose we do not know, but it is probable that she selected those which had been made for the latest favorite of the former king, Madame du Barry, since these were Louis XVI. in style, and since the furniture of former reigns had already come to be considered clumsy and lacking in refinement. It was not, indeed, until the queen became mistress of the Trianon that she was allowed an opportunity to surround herself with furniture made expressly to suit her taste. The history of the Trianon has been outlined


PANEL IN MARIE ANTOINETTE'S BOUDOIR PETIT TRIANON



TYMPANUM: DINING ROOM
PETIT TRIANON
in a former issue, * and we will, therefore, only briefly review it here.

The château of the Little Trianon had been built in 1766 by the royal architect Gabriel for Madame du Barry, In style it is in the main Louis XVI., especially in its proportions (and, be it said, for it is a point often disregarded by writers on the French art epochs, that it is no less in the architectural proportion than in superficial ornament that one style may be discriminated from the other). About her small château the queen planned a series of what were then called "English " gardens, which were supposed to be a return to nature, for the nobility were all for playing at rusticity and full of sentimental admiration for the country.

She was more concerned with her gardens, indeed, than with the refurbishing of the château; and, in fact, was so eager to exploit them that she could not wait for the grass to grow or water to be brought for the brooks, but gave a fête champêtre in the still incomplete and disorderly park. The missing turf

[^4]was represented by moss, and wool and shavings dyed green, while water was imitated by pieces of mirrors. "In the evening, and lighted by Bengal fires, however," says an eye-witness, "the whole produced a very satisfactory illusion."

It was Marie Antoinette's intention, too, to rather simplify than to elaborate the interior fittings of the little château itself, for here she intended not to be the queen but simply the chatelaine of a miniature country estate, and for that reason instead of adding much to the furniture and accessories which remained in the Trianon from its former coquettish owner she had many of the pieces removed and replaced them with others made in a simpler style.

The furniture now shown to the admiring crowd of sightseers who daily visit the Little Trianon is, however, for the most part not that which Marie Antoinette ordered for it. Even the celebrated Marie Antoinette bed was, it is almost certain, never in the Trianon during her residence there, and there is no proof that she ever used it. During the


MARIE ANTOINETTE'S LIBRARY
vERSAILLES

Second Empire, however, the Empress Eugènie became smitten with an admiration for Marie Antoinette. The Trianon had meantime been devastated during the Revolution. The drawingroom furniture, in blue silk stuffed with eider-down, the bed covered with silk lace, the curtains fastened with Grenada silk, all had been offered for sale for four hundred thousand francs at a sec-ond-hand shop in the rue Neuve de l'Egalité. Indeed, in 1797 the keeper of a coffee-house at Versailles rented the Little Trianon, and utilized it as a restaurant and public ball-room! The empress, however, had the original decorations restored, and furnished the rooms with pieces from the Garde-Meuble, carefully choosing from that remarkable collection (which was even richer then than it is today) any which it was certain had been made for the queen, and supplementing these authentic examples with others which had been made during the queen's time and which might be conceived as according with her taste. We may regard the rooms of the Little Trianon therefore, as the best reproduc-
tions that can, under the circumstances, be made of what they were in Marie Antoinette's time.

At the château of Saint Cloud Marie Antoinette found a more unlimited opportunity to exercise her personal taste. Aware that she was losing her popularity, and finding Versailles, which had always been regarded as a prison, too far from the capital city, she desired to have some residence nearer Paris, and prevailed upon her husband to buy from the Duke of Orléans, who at this time called himself Phillipe Egalité, the château of Saint Cloud. Hardly had the palace been purchased before she installed herself and began to furnish it anew, taking a number of pieces from the Garde-Meuble as a nucleus, and then ordering the most celebrated cabinetmakers of the day, Riesener, Gouthière and Weisweiler, to furnish her with additional designs to complete the decoration. Had Saint Cloud remained as Marie Antoinette left it, it would have been more representative of her taste than is the Little Trianon in its present restored state. Unfortunately the fur-



PANEI, MARIE ANTOINETTE'S BEDCHAMBER
PETIT TRIANON
niture of the former has been widely dispersed, and the most representative pieces have passed out of the government's possession and into private collections. The value of the pieces which were sold from it shows how highly collectors valued the queen's taste and reputation, and what enormous sums they were willing to pay for any piece of hers which could be proven authentic. A cabinet and writing-desk which was sold by the Directory in 1798 fetched at the sale of Lord Hamilton's collection no less a sum than 491,400 francs; and a lacquered cabinet by Weisweiler from the same collection brought 132,000 francs.

In conclusion we may, on the whole, consider that the rooms which bear the
name of Marie Antoinette are the best remaining examples of what the Louis XVI. style could produce. Not only did the queen live when the style was in its perfection, but she was the recognized patron of contemporary art. She employed the greatest cabinet-makers and decorators of the time, and the glamor which surrounds her name has so influenced those who have restored the apartments in which she lived that they have kept them purer in style than any other of the show rooms in the famous palaces and museums where, for the most part, pieces of the ornate Louis XV. style and the lugubrious productions of the Empire elbow the furniture of Louis XVI. T D. Dodge.


## INTERIORS OF DERBYSHIRE CHURCHES

I$T$ is curiously difficult to obtain good photographs of the smallest English churches, though as a matter of fact, they are really more personal and interesting than the more widely exploited cathedrals and abbeys; and indeed these same smallest of churches are the very ones to which we can best return for an indication of better methods of design in ecclesiastical Gothic. They are all so frank, so näive, "so personal and unobtrusive that they furnish almost faultless models for future work. And


RADBOURNE CHURCH
DERBYSHIRE
in addition to their more psychological qualities they are absolutely good architecturally. Note in the interior of St. Peter's, Derby, how delicately the arches are proportioned, and how simply they build up into a most effective composition. The same is true of Ashbourne Chúrch and Kirk Langley; indeed in nearly every architectural respect these small churches are thoroughly right as far as they go, and form one of the most interesting and honorable contributions to the art of architecture that can be found anywhere. The men who built


ASHBOURNE CHURCH
DERBYSHIRE
them were working under the driving of an instinct that led them to express themselves in the simplest and best possible fashion, unencumbered by thoughts of history, precedent or the schools.
C. M.



AULT-HUCKNALL CHURCH
DERBYSHIRE

youlgreave church


YOULGREAVE CHURCH
DERBYSHIRE



St. PETER'S CHURCH, DERBY


## GLIMPSES IN ITALIAN GARDENS

C
ONSIDERED with reference to their original designs the villa gardens of Italy are today only disordered ruins;-but what lovely, sombre ruins! their carpets woven of grass and gravel, their walls of ilex and hornbeam, their pillars of grouped cypresses, their white mute company of statues standing wherever a tree makes a niche or a bough a canopy, and where eternally

> _ " sangloter d'extase les jets d'eau,

Les grands jets d'eau sveltes parmiles marbres."
Though the inquiry is scarcely polite to the ancient architects, it is interesting to speculate how much of the present charm of these ruinous places of delight is due to the original planners, and how much to the hand of Time, - Time, who wages such an untiring and insidious campaign against the neatest geometry. If we agree to base our judgment as to what the aspect of these gardens was in

villa d'este
TIVOLI
the time of their serene highnesses the Aldobrandini, Borghese, Pamphili, and the rest, upon the series of quaint birds-



VILLA MEDICI
mere dreadful plantations, laid out as stiffly as a nurseryman's plot of vegetables.

Yet, if with one of these surprising perspectives to guide us, we seek to follow the architects' plan through the ruins of the garden it once depicted (to fit the prose to the poetry as it were), we shall find that, except where subsequent designers have altered the original intention, Nature has but reclothed the skeleton after her own mellow fashion. Sometimes it seems almost as though

eye view engravings which have come down to us, we shall be inclined, at any rate at first glance, to accord Time the larger share of credit for the present loveliness; for in those old prints we see the original proprietors,- princes in feathers and laces, cardinals in silks and ermines, ladies in flounces and furbelows, - accompanied, perhaps, by their architects, going about their new gardens in great coaches or on foot, making wonderful bows and courtesies to each other, and all in the midst of what seem


VILLA PAMPHILI-DORIA ROME


VILLA LANTE
bAGNAJA


we might discover the methods of her work, so uniformly has she gone about it, - embroidering here, softening there, now coaxing formality out of its stiffness, now, with subtlest art, converting what were broad architectural spaces into a hundred charming vistas.
In the golden time of the Renaissance
no page of the lore of Classic art was left unscanned; and the princes and prelates of Italy attempted to revive on their own estates the Classic Roman villa. This may be broadly defined as a country seat surrounded by gardens and terraces, the whole being treated

villa borghese
ROME
as a single composition. "The problem was," as a recent writer has phrased it, "to take a piece of land and make it habitable, the architect proceeding with the idea that one still wished to be at home while out of doors."

The designs for these gardens were,



VILLA BORGHESE


VILLA BORGHESE
of course, following the Roman prototypes, to be as pureiy architectural as those of the dwellings proper. Stone and mortar were only exchanged for greenery and gravel. Trees and hedges were to be used as building material, the lie of the land as a theatre arrangement, water as a most docile and multiform stage property. Indeed the very ground on which these new gardens were to be created was permeated (and the word may be used here in no figurative sense with architecture. "Go where you will
villa borghese

in the outskirts of Rome," writes Vernon Lee, " you are sure to find ruins - great aqueduct arches, temples half standing, gigantic terrace works belonging to some baths or palace hidden beneath the earth and vegetation. Here you have, naturally, an element of architectural ground-plan and decoration which was easily followed. The terraces of quincunxes, the symmetrical groves, the long flights of steps, the triumphal arches, the big ponds, came, as it were, of themselves, obeying the


VILLA BORGHESE
ROME


VILLA D'ESTE
of every gable and every fountain, and stacked up in every space."

Moreover, Nature herself seemed to fall in with the architectural intention; or at least made any other style of adornment difficult. What we know as a flower garden, of the free modern type, would have been impossible in Italy. The climate renders it a most laborious task to keep flowers growing in the ground all through the summer, for after the magnificent efflorescence of May and June the same sun which has expanded


VIIIA ALBANI
ROME
order of what was below; and from underground issued a legion of statues, headless, armless, in all stages of mutilation, who, charitably mended, took their places, as silent sentinels, white and earth-stained, at every intersecting box hedge, under every ilex grove, and beneath the cypresses of each sweeping hillside avenue. The soil yielded, too, vases, sarcophagi, baths, little altars, columns and reliefs by the score and hundred, to be stuck about everywhere, let into every wall, clapped on the top


PRIVATE GARDEN


VILLA MEDICI
ROME
the roses, lilies and vines with such marvellous rapidity, withers them as rapidly, and cakes the soil to the consistency of terra-cotta, so that only a few herbaceous flowers continue to bloom. In Italy, flowers are a crop, like corn, hemp, or beans; one must be satisfied with a fallow soil when they are over.


VILLA PAMPHILI-DORIA
ROME
And so it is but natural that the Italian villa garden should have become a place of mere greenery, water and marble, where fountains plash in sunny yards hedged with myrtle and laurel, and white statues stand in mysterious shadowy chambers. walled in with box and ilex.

Mary Helena Anthony.




INCOMBUSTIBLE CABINET WORK
(Philadelphia City Hall)

## Art Metal Conftruction Co.

 Jamestown, N.Y.
## i898 Architectural Photographs

## AT 9 CENTS EACH

I have decided to close out, regardless of cost, every broken set of Architectural Photographs in my collection, and offer 1898 photographs at

## $\$ 9.00$ per hundred.

## THE LOT IS MADE UP AS FOLLOWS:

98 of Beaux-Art Drawings of restorations, all sizes, usual price 40 cents each.
132 French Government, or Mieusement Collection, Exteriors, Interiors and Details of Chateaux and Cathedrals, roxi4 in size, usually sold at 60 cents each.
164. English Manor and Half-Timbered Houses, Gardens, Public Parks, Driveways, Scenery and Landscape, 7 xir in size, sold in England at 50 cents each.
18 English Interiors, 9xir, sold in England at 75 cents.
220 Italian Detail, Ornament, Ceilings and Mosaics, $7 \times 9$, usual price $\$ 3.00$ per dozen.
69 English and Scotch Stained Glass Windows, 5x8, sold in England at 25 cents each.

43 Public Buildings in Oxford, Cambridge, London and Liverpool, $5 \times 8$, English price 25 cents.
420 English Cathedrals, Exteriors, Interiors and Detail. $5 \times 8$, Sold in London at $\$ 3.00$ per dozen.
234 Small Italian Villas, Bits of Detail, Doors, Windows, Mosaics, Old Lettering, etc., taken by Philadelphia Archi. tects on a bicycle tour through remote sections of Italy; all of subjects impossible to buy at stores. $5 \times 8$.
450 English Country Houses, Exteriors and Interiors, $5 \times 8$, $61 / 2 \times 81 / 2,7 \times 9$, always sold at $\$ 4.00$ per dozen.
50 Exteriors and Interiors, English Churches, 5x8, English price $\$ 3.00$ per dozen.

These Photos will be sold in lots of 100 only, each 100 containing an assortment of subjects as above designated, divided proportionately. The lots cannot be broken and will not be sent on approval. Cash must accompany each order, on receipt of which the photographs will be forwarded by registered mail. $\$ 9.00$ for 100 or $\$ 25.00$ for 300 , ordered at one time and sent to one address.

EDWARD J. JONES, Jr., Watertown, Mass. DEALER IN ARCHITECTURAL PHOTOGRAPHS.


# The Duplex I Beam Hanger 

MADE OUT OF MALLEABLE IRON

Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E , Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER CO.

CLEVELAND, 0HIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.
Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co.
P.O. Box 8929.

Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted. It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




Geo. W. Maher, Architect, Chicago.

## Ulse <br> Dexter 'Sbrotbers' English $\mathfrak{w b i n g l e ~} \mathfrak{w t a i n s}$

ON ALL SHINGLED SURFACES interior stains a specialty

Send for sample boards and color plates to

## Merter Jbrothers,

55 and 57 jbroad $\mathfrak{F t r e e t}$, fboston, IISass.

## Folsom New Model Snow Guard. <br> Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.

> Faneuil Hall,
> Old South Church, King's Chapel, Boston,

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.


Every three feet of
The best SASH CORD Made

IS NOW MARKED

## SILVER LAKE "A"

Architects can tell at a glance
whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish

 Shipoleum for Standing Finish.White Enamelite $\underset{\substack{\text { Anteriors. }}}{\text { Enaint }}$ for Colonial
Send for our "Suggestions" on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## Notes.

In this issue Mr. Edward J, Jones, Jr., advertises another lot of photographs in hundred lots at $\$$ g.oo per hundred. Several draughtsmen by clubbing together can hardly make a mistake in buying one or more lots, and dividing them, for Mr. Jones' collections of subjects have been made with pretty clear ideas as to what are salable photographs, and his only object in offering these at so low a price is to dispose of broken sets. His last advertisement of i200 Italian subjects at the same price brought orders for the whole lot within a few days after publication, and the greater variety now offered will surely bring orders as readily; we would advise ordering at once to secure a lot at this price.

The American Bridge Company will make quite an elaborate building exhibit at the PanAmerican Exposition, furnishing two buildings each about 60 feet in width, about 150 feet in length. One of the buildings will be of extremely plain construction, being designed for use as a manufacturing plant. The second, however, will be of ornamental design, such as would naturally be used for freight depots, street car barns and that class of structures. The American Bridge Company will also make an extensive exhibit of parts of large bridges.

Among the important contracts recently closed are, one for thirty-six bridges for the Chicago, St. Paul \& Missouri Railway; one for four bridges for the Province of New Brunswick and one for two bridges on the Jamaica Government Railway.

## Massachusetts Institute of Technology, BOSTON.

Henry S. Pritchett, Ph.D., LL.D., President.
FOUR-YEAR COURSE IN ARCHITECTURE.
special advantages are offered to draughtsmen.
Summer Courses in June and July in Architecture, including work in Shades and Shadows, Elementary Design and Stereotomy.

Catalogues and detailed circulars of information will be sent free on application.

## H. W. TYLER, Secretary,

49 r Boylston St., Boston.

## Interior Decorations

$\mathbf{S}^{\text {PECIAL Stuffs and Wall Papers. Fine Casts }}$ and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms.
Miss Woodville, Mrs. H. Markoe
110 S. 17 th ST., PHILADELPHIA
CORRESPONDENTS IN LONDOV AND NEW YORK


Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.


MADE OF STEEL GALVANIZED, $\frac{1}{16} "$ THIK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, AN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY

## WHITE TERRA COTTA

of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renais sance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

## RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.



A New Era in

## Screens \& Awnings

Just think this over !
Do you want Solid Comfort, No Flies, No Sun, Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Screen and Awning.
Send for Catalogue.
PHENIX MFG. CO.
028 Centre St.,
MILWAUKEE, WIS.


THE LOGICAL RESULT OF ITS SUPERIOR QUALITIES. Postal for Circular and Color Card. THE CARTER'S INK CO., BOSTON, MASS.



THE $\mathbb{N} T$ TERIOR HIRRDWOOD CO., Mlantrs.
INDIANAPOLIS, IND.

PLIIN OR ORNMIEMTRL Thick or Thin

## PARDUET

## King Edward VII.

The new King of England, uses a Rider Engine in his palace at Sandringham. The Khedive of Egypt has a Rider Engine at Ras-El-Tin palace at Alexandria, Egypt. The Paris Exposition gave the highest medal of its class to both our Rider and Ericsson Engines. ***Rider and Ericsson Hot Air Pumping Engines are appreciated in other countries besides their own apparently. ** Catalogue "A 8 " on application to nearest office. $* * * * * *$


## Rider-Ericsson Engine Co.

22 Cortlandt St., New York 239 Franklin St., Boston<br>22 A Pitt St., Sydney, N.S.W. Teniente-Rey 71, Havana

40 Dearborn Street, Chicago
40 N. 7th St., Philadelphia
692 Craig St., Montreal, P.Q. Merchant and Alakea Sts., Honolulu

# THE <br> BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 



SPANISH CHURCHES IN MEXICO
FIFTEENTH CENTURY MARBLE ROSETTES ENGLISH COTTAGES AND FARM HOUSES

BATES AND GUILD COMPANY boston mass.


## STRATHMORE PAPERS

Visit the Strathmore Exhibit at the Pan= American Exposition, Buffalo, N.Y. Graphic Arts Building * Original Draw= ings by Noted Artists on Drawing Board, Illustrating Board and Charcoal Paper

WRITE FOR SAMPLE BOOK OF STRATHMORE
Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL I LLUSTRATION 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS


#### Abstract

SUBSCRIPTIONS: Subscription price, $\$ \mathrm{r} .00$ a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$_{1} .50$. Single copies, io cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January. REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender. CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the ryth of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price. BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for 1897,1898 , 1899 and 1900 , $\$ \mathrm{r} .00$ each. Bound Volumes, in specially designed buckram covers, for $1896, \$ 3.50$ : for $1897,1898,1899$ and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.


## SIR EDWARD BURNE-JONES

England's greatest painter in our own day Sir Edward Burne-Jones - once wrote to a friend, "By a picture I mean a beautiful romantic dream of something that never was and never will be, in a light better than any light that ever shone, in a land no one can define or remember only desire." And surely in his own works he has achieved something of his ideal.

The July issue of "Masters in Art" (ready June 25) will illustrate and describe Burne-Jones' achievements and art. The ten paintings selected for illustration in the plates of this number are, the deservedly celebrated "Golden Stairs," ""Mirror of Venus," " Days of Creation," "Chant d'Amour," "Love among the Ruins," and "Annunciation." In addition to these are reproduced the "Prioress' Tale," "Laus Veneris," "Pan and Psyche" and the magnificent "King Cophetua and the Beggar Maid," - all pictures considered by critics as among the artist's greatest achievements, but which, owing to the reluctance of their owners to allow them to be generally reproduced, are vary little known. As a whole the number will be one of the most beautiful yet issued in the Series.

The remaining five issues of "Masters in Art" which are to complete its second volume, will probably deal with the following artists: Terborch (the quaint Dutch "little-master") the Della Robbias, makers of the beautiful Della Robbia reliefs, Gainsborough, Correggio, "The Faun of the Renaissance," and Andrea del Sarto, called "the perfect painter."

Messrs. Bigelow, Kennard \& Co. of Boston are showing some very fine hall clocks which deserve the attention of architects who are assisting their clients in the selection of furnishings for new houses.

## DETROIT ARCHITECTURAL CLUB

The Detroit Architectural Club has elected the following officers and committees for the ensuing year: President, Francis S. Swales; Vice-President, C. F. J. Barnes; Secretary, Dalton R. Wells; Treasurer, John Frauenfelder; Librarian, C. R. Green.
Directors: George H. Ropes, Cheri Mandelbaum, Adolph Eisen.

Entertainment Committee: John A. Gillard, J. R. McEchron, W. F. Girard.

House Committee: J. Frauenfelder, F. C. Baldwin, H. A. Odell.

Exhibition Committee: F. S. Swales, J. A. Gillard, George Ropes.
Class Committee: Cheri Mandelbaum, G. H. Ropes, C. F. Barnes.
Publicity Committee: A. Eisen, J. A. Gillard, W. F. Scott.

## PERSONAL

Edward R. Swain, architect of San Francisco, has opened a branch office in the Stanginwald Building, Honolulu, H.I., and desires manufacturers' catalogues and samples.

Ed. H. A. Volkmann has resumed the practice of architecture, with offices on the eighth floor of the Koken Building, St. Louis, Mo. He requests catalogues, samples and price lists of materials and fixtures.

William Arthur Bennett, one of the younger architects who has been in the South for two years, has returned to Chicago, where he has resumed the practice of his profession at Rm . 601, 85 Dearborn Street.

# The Recent Architectural Development of Harvard University 

(In the ARCHITECTURAL REVIEW for JUNE.)


Harvard Union. McKim, Mead \& White, Architects.
The Classes of ' 57 , ' 70 , ' $74,75,{ }^{\prime} 76,{ }^{\prime} 77$, ' 80 , ' $86, ~ ' 89$, and ' 90 and the Porcellian Club are each now building, or planning to build, a gate at an entrance to the Yard, somewhat similar in style to the Johnston and Meyer Gates already erected. The Class of ' 73 is to set a tablet in the Yard wall.

In addition to this embellishment of the Yard, the University has recently erected the Perkins and Conant Dormitories, the Phillips Brooks House, the Randall Dining-Hall, and an Infirmary, and is now in process of building an Engineering Building and an Architectural Building. Near the Yard the private dormitories Randolph Hall and Apley Court, the Big Tree Court Swim-ming-Pool, the A. D. Club House, and the Radcliffe Gymnasium have all been completed, and the Harvard Union is nearly finished.

All of these structures are so meritorious in design, and the recent architectural development of the University has been so remarkable, that the June, igoi, issue of the Architectural Review has been made a special Harvard number, illustrating all the above-named buildings, either by photographs or from the architects' drawings. Messrs. McKim, Mead \& White, the designers, have also contributed perspective sketches of all the projected gates, showing how they will appear when completed.

50 cents per issue. $\$ 5.00$ a year.
Bates \& Guild Company, 42 Chauncy St., Boston, Mass.

## "The Georgian Period"

This publication, which now consists of seven Parts, contains more than a hundred pages of text, illustrated by some two hundred and fifty text-cuts, and two hundred and forty-nine full-page plates, of which fifty-five are gelatine or half-tone prints. It is in truth a work of superior excellence and great usefulness.

The matter already illustrated may in small part be classified thus :

## IMPORTANT HOUSES

Fairbanks House, Dedham, Mass. . . . Date 1636 Royall Mansion, Dedham, Mass. . . . " 1737

and others Philipse Manor House, Yonkers, N.Y. . . " 1745 Tudor Place, Georgetown, D.C. . . . " 179Mappa House, Trenton, N.Y. . . . . " 1809 Woodlawn, Va. ". 1799
Mount Vernon, Va
and others

## CHURCHES

King's Chapel, Boston, Mass. . . . . Date 1749
Seventh-day Baptist Church, Newport, R.I. . " 1729
Christ Church, Alexandria, Va. . . . . " 1767
Christ Church, Philadelphia, Pa. . . . " 1727
St. Paul's Chapel, New York, N.Y. . . . " 1764
Old South Church, Boston, Mass. . . . " I729

| First Church, Hingham, Mass. . . . . . Date | 168 r |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| St. John's Chapel, New York, N.Y. . . . . | " | 1803 |  |  |
| First Congregational Church, Canandaigua, N.Y. | " | 18 r 2 |  |  |
| St. Peter's P. E. Church, Philadelphia, Pa. | . | " | 1758 |  |
| Gloria Dei Church, Philadelphia, Pa. | . | . | " | 1700 |

Incidentally there are shown special measured drawings or large views of the following features and details:-Porches and Doorways, 54 subjects; Staircases, 18 subjects ; Mantelpieces, 76 subjects ; Pulpits, 6 subjects ; Fanlights, 60 subjects.

In addition to the subjects enumerated above there is a large quantity of measured and detailed drawings of Cornices, Ironwork, Gateposts, Windows, Interior Finish, Ceiling Decoration, Capitals, etc., together with elevational and sectional views of entire buildings.

The Drawings in this publication have been made by such well-known draughtsmen as

DAVID A. GREGG
FRANK E. WALLIS
WALTER M. CAMPBELL
CHARLES L. HILLMAN
P. G. GULBRANSON

JAMES ROSS
E. ELDON DEANE

JOHN C. HALDEN
FRANCIS S. SWALES
CLAUDE F. BRAGDON

GEORGE C. GARDNER
GLENN BROWN
FRANK A. HAYS
AND OTHERS

PRICE


Bates \& Guild Company, 42 Chauncy Street, Boston

## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford $\mathcal{E}$ Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia. The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

# KEASBEY \& MATTISON CO. 

AMBLER, PENNA.
NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA
Authorized Selling Agents

BOSTON
NEW YORK,
S. C. NIGHTINGALE \& CHILDS

PHILADELPHIA, MAGNESIA COVERINGCO. BALTIMORE,
RICHMOND,
NORFOLK,
CHARLESTON,

# Details of Building Construction 

Ey CLARENCE A. MARTIN<br>Assistant Professor of Architecture at Cornell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper ioxi2 $1 / 2$ inches, and substantially bound in cloth.

Price, Postpaid, \$2.00
Bates $\mathcal{E}$ Guild Co., 42 Chauncy Street, Boston, Mass.



## THE <br> Brochure Series

OF ARCHITECTURAL ILLUSTRATION

## SPANISH CHURCHES IN MEXICO

SUCH was the religious fervor of the Spanish nation at the time when Mexico was discovered that we may safely say that its conquest was undertaken no less with the object of planting the Cross on a virgin soil than
lished a cathedral was erected in every city, a church in every town, and a chapel in every hacienda. Indeed, as late as 1859 one-third of all the real and personal property in the country was still owned by the church. Almost


SANCTUARIO DE OCOTLAN, NEAR TLAXCALA
MEXICO
because of the desire for aggrandizement, the former motive indeed being the more potent of the two. Naturally, therefore, a great part of the wealth of the newly acquired country was turned to religious purposes, and as soon as the Spanish rule was estab-
every ecclesiastical building that now exists in Mexico can date its original foundation back to the period immediately following the conquest, and the sites on which the present churches stand were, seemingly without exception, chosen because of some event in the



history of the struggle or, more frequently, because of some miraculous apparition of Virgin or saint to a pious friar or an emotional newly converted Indian.

The monkish priests who built these churches were the same men whose zeal had inspired them. They had not been trained as regular architects and were probably far better versed in the "Legenda Aurea" than in the work of Vetruvius. As guides they had only the memory of what was being done in their own country, though they perhaps possessed more or less imperfect drawings of the more celebrated Spanish churches of that day. Moreover they were forced to adapt their memories to the local circumstances and materials, and to carry out their designs with the assistance of untrained natives. It is not surprising, therefore, that we find in a new land merely the architecture of the Spanish Renaissance repeated in a cruder form. It is, however, truly amazing that churches so designed and so built should be as beautiful as in many instances they are.

It should be remembered, too, that the fountain head was at this time corrupted. Notwithstanding the assistance the Spaniards had received from Italy and France, they had shown themselves inartistic in dealing with the Renaissance motives in their own country. The debasing style of the Spanish sculptor architect Churriguera and his two sons was abroad in the land during the latter part of the seventeenth and eighteenth centuries, - if a complete disregard of the canons of classical design and the combination of its features in incongruous and grotesque assemblages of broken pediments, twisted shafts, and contorted scrolls, can, in spite of a certain theatrical splendor, be considered a style. In Mexico we find this influence repeated, and indeed throughout, Mexican architecture is but Spanish Renaissance architecture followed step by step under another sky. There are the same de-fects,- the same misuse of the Orders, the same over-thickening of the walls, the same over-enrichment with orna-


CHURCH OF SALTO DEL AGUA City of mexico
ment which still betrays the influence of the Arab and the Moor. There are the same excellences of scale, massing and general proportion, the same beautiful and characteristic towers, and the same general pleasing effect (at least as respects their exteriors, for inside they are today usually either bare or vulgar) which even the architectural purist must recognize, even though he may grumble at short-comings in detail.

Borrowed architecturally though they were, however, there is a wholly indigenous charm and one wholly individual in these Mexican churches. The domes and towers, tinted in soft shades of pink, blue and warm amber, and roofed with red tiles, rise against the intense radiance of the azure Mexican sky, often with startling loveliness. The massive stone walls, enriched and over-elaborated with complex arabesques as they are, seem, in this glowing sunshine, hardly too luxuriant and tropical, and almost invariably the towers which rise from the front of the churches are of remarkable beauty.
S. F. N.



FIFTEENTH-CENTURY MARBLE ROSETTES FROM THE

ARCHIEPISCOPAL PALACE, PISA


FIFTEENTH-CENTURY MARBLE ROSETTES FROM THE

ARCHIEPISCOPAL PALACE, PISA



OLD COTTAGES AND FARM HOUSES IN KENT AND SUSSEX, ENGLAND*

PHOTOGRAPHS of the charming cottage and farm houses, with which England abounds have hitherto been exceedingly difficult to procure. The professional photographers seem not to have recognized their architectural value, and travelling architects have taken only snap-shots here and there. It has remained for an amateur photographer, also fortunately a professional architect, Mr. Galsworthy Davie, to make a collection of views showing examples of well-nigh every type of cottage and farm house in the counties of Kent and Sussex, and his excellent photographs have been recently published in England, with a descriptive preface by Mr. E. Guy Dawber. It is from this valuable work in a new field that our illustrations have been taken, and the following notes are based upon Mr. Dawber's commentary.

Owing to their poor materials and fragile construction, the domestic abodes of the middle ages have long since disappeared; but when, in later years, cottages and farm houses began to be built with enough solidity to last to our own day, we find certain well-defined characteristics marking one and all of them. They were built primarily not for beauty but for comfort and convenience. There seems to be no effort in either their construction or ornamenta-


COTTAGE AT WEST BURTON, WEST SUSSEX
tion. Simple and well-worn traditions of building were handed down from generation to generation and carried out in the local materials at hand Well-defined styles continued for many years with but minor changes in detail and design; and yet these traditional forms were used with such freshness and individuality of treatment that each house, though it contain no new feature, seems to stand distinct from its neighbor.

The counties of Kent and Sussex were formerly covered with forests, and until these were destroyed most of the smaller houses were built of timber, only the more important mansions being of stone or brick. Many of the timber houses of this district still remain, and although more or less altered in form, still clearly evidence what the arrangement of a yeoman's house in the sixteenth century was. The usual plan was practically a continuation of an older mediæval one,an oblong hall, with rooms at one or either end forming wings, - and this plan (probably the origin of the $E$ and H shaped plans of the more imposing houses in the reigns of Elizabeth and James I.), did not lose its distinc-

[^5]


SUSSEX
tive character until the eighteenth century. In the earliest arrangements throughout Kent and Sussex, the plan was a simple parallelogram with the ends slightly carried forward and the upper story projecting at the floor level. The recessing of the center was also a typical feature, and examples of this treatment may be seen in the Stonehill farm at Chiddingly (page 132) and the Inn at Hollingbourne (page I43).

As they resembled each other in general plan, so the earlier timber houses were similar in their simple construction. A base or foundation wall was first built of brick or stone, high enough to raise the sill above the ground. Into this sill-piece heavy posts of timber were fixed upright about seven or eight feet apart, those at the angles being generally formed of the butt of a tree placed root upwards, with the top part curving diagonally outward to carry the angle-posts of the upper story. (See the farmhouse at Chiddingly, page 132.) Upon these main posts, beams were laid across the building, project-
ing forward some eighteen inches in front of the framing below, and into these beams others were set longitudinally, and to the latter the floor joists projecting forward the same distance as the main beams, were tennoned. The framing of the upper story then followed that of the ground floor, the sill being now laid on the ends of the overhanging timbers. The spaces between the main uprights were then filled in with windows and framing timbers, the latter set generally about eight or nine inches apart, closeness of timbering being one of the characteristics of early work. It was not until later that wider spacing and curved and shaped braces were introduced. The divisions between the timbers were then stopped with wattles or laths and chopped straw and clay, and the surface plastered flush with the wood work. At Stonehill farm, Chiddingly (page 132), the method of framing the timber can be plainly seen. When, as often happened, the main timbers shrunk and the buildings settled, they were either plastered all over on the
outside, or hung with tiles, or covered with deal boarding;-indeed, many of the tile-hung and boarded houses are but sixteenth century framed ones in a new shell.

As a rule, the windows were small, with moulded wooden frames and mullions, filled with lead lattice-glazing. Most of the original windows are gone, but enough remain to show what they were like. An effective arrangement of windows was the bay, sometimes swung out on the first floor only, but oftener carried up from the ground under a projecting gable. (See cottage at Little Dixter, page 144.) In the cottage at West Burton (page 133), there is an example of a window treated as an oriel, swung forward on moulded sills.

Later, the whole method of framing houses changed and a plainer treatment prevailed. The timbers were placed further apart with larger plaster panels, and curved braces were inserted. (See houses at Pulborough, page 138 , and

Pattenden, page 136.) Much of the elaborate over-hanging was also given up, or carried out only on the sides or ends. In the gables the builders had an additional opportunity for the display of their ingenuity, and not content with filling up the spaces with timbering of varied patterns, the whole gable was in many cases brought forward on brackets beyond the face of the wall, and the barge-boards to these gables came in for attention. An example is shown in the farm house at Sedlescombe (page 135).

Throughout Sussex and Kent chimneys are most important elements in the external effect. The variety of their design is almost endless, and the utmost ingenuity in arrangement is shown. Chimneys were generally placed at either end of the building, or rose in a mass from the center of the roof; and when the latter plan was adopted various projections and settings forward appear, for no other reason, apparently, than the love of variety



and change. Although many of the cottages are of stone, which was freely quarried in these districts, the builders were confronted with the difficulty of constructing the chimney in stone above the roof line, for the local stone was not adapted to splitting into thin slabs, and the ordinary walling thickness would have made them too cumbrous and bulky. Before leaving the roof line, therefore, stone was usually abandoned and brick substituted. Hence the frequency in this region of the pleasing combination of a chimney with a projecting stone base and a diminishing stack in red brick above. At Tillington (page 140), is a cottage in which the chimney shafts are separate and placed diagonally.

In these old buildings the roof is a principal feature, sheltering the whole house and conveying a kindly feeling of homeliness; and there is no doubt that they owe much of their charm to the bold outline and unbroken surface and treatment of their roofs. If we except an occasional dormer, the roof usually consists of simple spans, and in the earlier houses is uninterrupted by gables or projections, but simply carried
from end to end and hipped at all the corners. Typical examples are shown in the cottage at Hollingbourne (page 143) and Chiddingly (page 132). Hips are more frequent than gables in the tiled and thatched roofs, which, indeed, hardly seem complete without them, though where stone-walling and mullioned windows are used gables are more common.

The old red tiles that we find on the roofs of these cottages are thicker and more unevenly burnt than our modern ones, and the irregularity of the tiling and the texture of its surface produces a softness and play of light and shade that is exceptionally pleasing. Thatched roofs are numerous, and here the hip treatment is even more prevalent than with tiled roofs. An excellent specimen is shown in the cottage at Hardham (page 137). Some of the Sussex houses in the stone districts are roofed with thick and heavy stone slates, which are, it must be confessed, somewhat incongruous among the red tilings of the others. (See Stonehill farm, Chiddingly, page 132.)

Though plaster was the usual filling between the timbers of these houses,


COTTAGE AT MAYFIELD
SUSSEX



brick was occasionally used, and there are several instances where the bricks are laid herring-bone fashion. In many parts of Sussex, too, an admixture of local stone is used with brick, and the post-office at Wickhambreaux (page 134) is an admirable example of the use of flint and stone in checkered squares with gables and chimneys of brick.

From roofs and walls we come to consider what is perhaps the most striking characteristic of these small Kent and Sussex cottages, - namely, the hanging tiles. Hardly a house is to be found in which such tiles are not somewhere used. Only the upper story may be covered, or only the gables, while in others almost the entire house is tiled down to the ground. These hanging tiles were laid for the most part with straightforward simplicity, and when fish-tailed or fancy tiling is seen occasionally the lack of repose is at once manifest.

Simple plaster fronted houses abound, especially in Kent, though somewhat
later in date than the timber-framed ones. Many of them were never intended to be finished in any other material than plaster; but a few are old timber houses covered with a plaster skin.

Weather-boarded houses are also typical of this district, and when these are treated in a thoroughly architectural manner and with due appreciation of the material, the method is often peculiarly effective. Examples are shown in the cottages at Hurst Green (page 142 ) and Mayfield (page $I_{3} 8$ ).

One of the main features of building generally in the olden time was suitability to situation and the use that was invariably made of the local materials at hand. The geological formations of England not only give distinctive character to the districts which they compose, but also to the buildings themselves; and where we find the materials that nature provides used in any given part of the country, then without doubt we see the most beautiful architecture
because it is the most appropriate. Consequently these examples of homely and unpretentious building are as full of vitality and interest as many of the larger and more noticeable edifices.

The architecture of the larger houses of England lies, too, somewhat in a category by itself, and doubtless owes much to foreign influence and execution, but in these smaller and more homely buildings, standing modestly by the way, we find work purely and solely national, conceived and carried out by English hands. The pre-eminent beauty of the English countryside is in no small measure due to its cottages and farm houses, almost invariably pleasing in themselves and in harmony with their surroundings, each built for comfort and convenience, each suiting its position, and each a renewed proof, if one be needed, that what is best adapted to its purpose is the most beautiful.

The two counties of Kent and Sussex contain so many and such admirable
examples of simple building, from the early timber framed-houses to the later eighteenth century brick ones, that a careful study of them is sure to repay the lover of English architecture. Unfortunately many of these structuresare now being swept away; and the dwellings which have been so closely interwoven with the life and history of the country are being rapidly destroyed, to make way for what in many cases can only be regarded as very doubtful improvements.
Taken as a whole, it is impossible not to be impressed by the beauty and subtle charm of these old English village houses with their mullioned windows and latticed frames, many tinted tile roofs and venerable, lichen-covered walls, while the absence of any meritricious or needless ornament and the wonderful feeling of homeliness that pervades every feature, combine to produce the essence of simple and beautiful architecture.




SAVETIMEANDLABOR BY USING

## GILLESPIE'S

## PERSPECTIVE CHARTS

HESE charts are the result of the development and perfection of labor saving methods which I have used for years in my professional work. In preparing them for publication, I have kept in view their adaptability for all the problems in perspective ordinarily arising in an architect's practice, and feel warranted in offering them as an indispensable adjunct to an office. The pads will be found useful in studying designs in perspective and in preparing outlines for preliminary sketches in pen, pencil or color. The charts, while answering this purpose also, may be used in the preparation of nearly all kirds of large perspective drawings. Transparent diagrams accompany the charts for reading the dimensions on plans and elevations. A knowledge of perspective is not essential to the use of this system and every architect and draughtsman should investigate its merits. A descriptive circular will be mailed on application. The system comprises interior angular, parallel, bird's eye view, and exterior angular (two charts) perspective.

## PRICES

Large Set of Five Charts, $\$ 5.00$ Size, $22 \times 28$ inches, Bristol board.
Small Set of Five Charts, . 75 Size, Imxi4 inches, thin paper.
Pads of 50 Sheets, $11 \times 14$, each, 1.25
Five different Pads, $\quad 5.00$
Large Set and Five Pads, $\quad 10.00$

## G. CURTIS GILLESPIE

ARCHITECT
7 Warren Street, New York




# The Duplex I Beam Hanger 

MADE OUT OF MALLEABLE IRON
Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E., Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER CO.

CLEVELAND, 0HIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.
Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co. P.O. Box 8929.

Boston, Mass.

SAMSON SPOT CORD,
You can tell at a glance that no other cord is substituted. It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




Geo. W. Maher, Architect, Chicago.

## uns <br> Dexter $\mathfrak{J B r o t h e r s}$ ' English wbingle $\mathfrak{w t a i n s ~}$

ON ALL SHINGLED SURFACES<br>interior stains a specialty<br>Send for sample boards and color plates to

## Derter $\mathfrak{j B r o t b e r s}$,

55 and 57 Jbroad $\mathfrak{m t r e e t}$, Jboston, IISass.

## Folsom New Model

 Snow Guard.
Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.

> Faneuil Hall,
> Old South Church, King's Chapel, Boston,

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.


Every three feet of

The best SASH CORD<br>Made

IS NOW MARKED

## SILVER LAKE "A"

Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish Shipoleum tor Seanding Finish.

White Enamelite An Eramel Paint or Colonial Interiors.

Send for our "Suggestions", on Wood Finishing and our booklet, " The Treatment of Floors." You will find them of service.

## Notes.

The Jos. Dixon Crucible Co. have just issued a complete catalogue of their graphite products. It is an admirable example of printing, illustrating and arranging catalogue material.
The Merrimac Ceramic Company of Newburyport, Mass., has opened an exhibition room at 5 Park St., Boston, where some exceedingly attractive pottery is displayed. A special feature of the exhibition is a line of garden pottery designed for formal garden effects and for use with foliage, plants and shrubs in doorways, on verandas, lawns and terraces. It is made in rich red terracotta and buff, and will interest all architects who are laying out garden plans.

## An English Fire Test of Expanded Metal.

The British Fire Prevention Committee have in London facilities for careful tests of all kinds of building materials. Recently a series of tests of different methods of floor and partition constructions have been made and among them was a test of expanded metal floor construction which will interest American architects. We quote the following from The Architects' Magazine of London:
"We now come to floors having pretensions to be fire-proof, i. e., the constructional parts of the floor are of non-combustible material . . . . The construction of the floor is by iron joists 4 feet $91 / 2$ inches apart, on the top of which the expanded metal is stretched and three inches of furnace ash and Portland cement concrete laid and finished on top with half an inch of cement and sand. The joists are protected with a suspended ceiling, as shown, of expanded metal and ordinary plastering applied. The space between the floor and ceiling was ventilated by means of holes in the walls of the chamber. The floor was loaded i40 pounds per foot distributed. The test was to last one hour and fifteen minutes and the maximum temperature was to be $2000^{\circ}$ Fahr. The result was that during this period the fire did not pass through the floor. The plaster ceiling remained intact until the application of water, when some of it was washed away. There was a slight deflection of the floor and ceiling. It is to be observed that considerable advantage was gained by the space for ventilation, which in practice is not always obtainable."

## WANTED!

An architect, in a progressive Southern city within nine hours of New York, desires to employ a young draughtsman of good habits, technical training and experience in first-class offices for design and detail work. Good salary and permanent place for the right man. Address " $\mathrm{X}_{3}$," care Bates \& Guild Co., Boston


SEND FOR OUR CATALOGUE OF FLY SCREENS
Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.
 MADE, AN BE BENT TO ANY SHAPE INEXPEN SIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY

## WHITE TERRA COTTA

of the VERY BEST QUALITY. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance siyle. Limestone and Other Shades made to order. All goods vitrified to withstand elements.

## WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City. <br> RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## A New Era in

## Screens \& Awnings

Just think this over !
Do you want Solid Comfort, No Flies, No Sun, Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Soreen and Awning.
Send fir Catalogue.
PHENIX MFG. CO.
028 Centre St.
MILWAUKEE, WIS.
For All Laundering Purposes


THE LOGICAL RESULT OF ITS SUPERIOR QUALITIES. Postal for Circular and Color Card. THE CARTER'S INK CO., BOSTON, MASS.

## PARQUET

PLAIIN OR ORNMIENTLL Thick or Thin

We have representatives and stocks of floors in the leading cities. Write for Prices and Book of Designs.


THE INTERIOR HRRDWOOD CO., ITantIS. INDIANAPOLIS, IND.



## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can have water every day in the year, and your cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


## Rider-Ericsson Engine Co.

## THE BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION



AN ENGLISH RURAL BRIDGE
ROTHENBURG ON THE TAUBER
FRENCH WROUGHT-IRON GATE GRILLES THE ITALIAN COUNTRY-SIDE

BATES AND GUILD COMPANY BOSTON MASS.


## STRATHMORE ARTISTS' PAPERS

Used nearly altogether by the leading Artists and Draughtsmen of the country * Send for sample books or visit our exhibit at the Pan=American Exposition, Graphic Arts Building

Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES of architectural illustration 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS


#### Abstract

SUBSCRIPTIONS: Subscription price, $\$ \mathrm{r} .00$ a year, in advance, postpaid to any address in the United States or Canada: to f reign countries in the Postal Union, $\$ \mathrm{I} .50$. Single copies, io cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January. REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mall usually comes safely, but should be securely wrapped, and is at the risk of the sender. CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price. BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for 1897,1898 , 1899 and 1900 , $\$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for 1896, $\$ 3.50$ : for $1897,1898,1899$ and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.


## MASTERS IN ART FOR AUGUST.

The August issue of " Masters in Art," ready July 25 , will consider and illustrate the work of Gerard Ter Borch, the greatest of the Dutch "Little Masters." Aside from Ter Borch's wonderful technical qualities his pictures are extremely interesting as glimpses into the Dutch life of his time, for no other painter has shown with more simplicity and truth the actual society of his day as it existed about him. His subjects were of the simplest character, the reading of a letter in a quiet Dutch interior, a young woman washing her hands, a family concert, a housewife peeling apples, but, as Michel has written,
Were his subjects still more modest than they are, they would be no less captivating because of the life that has been put in them," and, in commenting upon his workmanship, the same critic goes on to say, " The too carelessly applied word 'perfection' was not too far from its true significance when applied to Ter Borch, and the fusion of the factors which make up his talent is so complete and balanced as to make it difficult to detect one among them which seems superior to the others."

In spite of his increasing popularity among connoisseurs, Ter Borch has not heretofore been sufficiently widely known to take the rank in art that he deserves, and among those who do not know his work this issue of "Masters in Art" will provoke admiration and surprise.

The remaining four issues of the magazine to complete its second volume, will deal with the Della Robbias - Luca and Andrea - makers of the beautiful Della Robbia reliefs; Gainsborough, perhaps the most charming of English portrait painters; Correggio, "the faun of the Renaissance," as he has been called; and Andrea del Sarto, "the perfect painter."

## Executive Board Architectural League of America.

The Architectural League of America having elected as President for the ensuing year Mr . Joseph C. Llewellyn of Chicago, the choice of the remaining members of the Executive Board devolved upon the Executive Committee of that Club, of which he is a member.

Said Executive Committee now desires to announce that they have filled the Executive Board by the reappointment of the members who served last year.

The Board is as follows: President, Joseph C. Llewellyn, Chicago Architectural Club, 1218 Association Building; Vice-President, Richard E. Schmidt, Chicago Architectural Club, I72 Washington street; Corresponding Secretary, Emil Lorch, Detroit and Chicago Architectural Club, 172 Washington street; Recording Secretary, Hugh M. G. Garden, Chicago Architectural Club, 172 Washington street; Treasurer, August C. Wilmanns, Chicago Architectural Club, Journal Building ; Member of Executive Board, Prof. Newton A. Wells, Architects' Club, University of Illinois, Urbana, Ill.; Member of Executive Board, Robt. C. Spencer, Jr., Chicago Architectural Club, 1 ro7 Steinway Hall
J. H. Phillips,

Secretary Chicago Architectural Club.
Two or three years ago Samuel Cabot issued an ingenious set of lithographed color schemes, taking one of Wm. R. Emerson's picturesque houses as a subject, the several lithographs showing different color schemes for the staining of the shingles, being so cut as to be interchangeable. This was so successful that he has just issued a similar but larger set, making possible a far greater number of color combinations. A set of these lithographs will be mailed on application.
"IT HAS TAUGHT ME ALL THAT A TEACHER COULD HAVE TAUGHT - HOW TO BEGIN RIGHT, HOW TO AVOID DIFFICULTIES, AND THE 'TRICKS OF THE TRADE'"

## Pen Drawing

Charles D. Maginnis

〇NLY practice will make an accomplished pen-draughtsman; but this little treatise teaches whatever can be taught of the art; namely, how to practice, what "style" is and how to attain it, what pens, inks and papers have been found most serviceable, how to use line and hatch, how to produce textures and to represent various surfaces, values and colors, how to depict and treat details, - in a word, imparts a knowledge of all the ways, means and processes that experience has proved useful. The key-note of the book is practicality. Each of the 72 illustrations is a specific example of some important method. It is written interestingly and clearly. With this treatise at his elbow the draughtsman can make most valuable use of his spare minutes.

## Price, $\mathbf{\$ 1 . 0 0}$, Postpaid

THE BOOK MEASURES $7^{1 / 2} \times 5$ INCHES, CONTAINS 130 PAGES AND 72 ILLUSTRATIONS, IS PRINTED ON HEAVY PAPER AND BOUND IN GRAY CLOTH. SECOND EDITION.

42 CHAUNCY STREET, BOSTON, MASS.



# IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS 

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford of Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

## KEASBEY $\mathcal{E}$ MATTISON CO.

## AMBLER, PENNA.

NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA
NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE

## Authorized Selling Agents

BOSTON,
S. C. NIGHTINGALE \& CHILDS

ST. LOUIS,
NEW YORK,
IA, MAGNESIA COVERING CO.
PHILADELPHIA, MAGNESIA COVERINGCO.
BALTIMORE,

# Details of Building Construction 

Ey CLARENCE A. MARTIN<br>Assistant Professor of Architecture at Cornell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper roxi2 $1 / 2$ inches, and substantially bound in cloth.

Price, Postpaid, $\$ 2.00$

Bates $\mathcal{E}$ Guild Co., 42 Chauncy Street, Boston, Mass.

AN ENGLISH RURAL BRIDGE

ROTHENBURG ON THE TAUBER

FRENCH WROUGHT-IRON GATE GRILLES

THE ITALIAN COUNTRY-SIDE


# THE <br> Brochure Series 

OF ARCHITECTURAL ILLUSTRATION

1901
JULY
NO. 7

## ROTHENBURG ON THE TAUBER

IT IS only within the last ten years that Rothenburg has become widely known. A few architects and artists and a few such travelers as shun main-travelled roads had previously discovered the place, but they selfishly kept the knowledge of it to themselves as a sort of hidden treasure. In 1882, however, the little town, fired perhaps by the example of Oberammergau, decided to present at Whitsuntide an annual festival play based upon a picturesque episode in its history, and Rothenburg was discovered by the tourist.

The unique distinction of the place will be apparent when we say that for three centuries not a new house has been built within the massive old city walls The town is today like a dream of the Middle Ages, more vivid than any picture, more convincing than any description, of what the free city of Germany was three hundred years ago. Nothing


KOBELZELLERGATE ROTHENBURG
like it can be seen anywhere, except, perhaps, in the stage settings of some of the best Parisian and German theatres; and the visitor who walks through its steep irregular streets feels as if he were a spectator who had strayed in modern dress from his orchestra chair onto the stage at some old-fashioned play.

As seen from the valley below, the little city looks exactly like such a town as is depicted in the background of one of Albrecht Dürer's prints. A gray and moated wall, set with the many picturesque towers and turrets of its gateways, and overgrown here and there with masses of foliage, encircles it, while above show glimpses of red-roofed houses rising on the hilly streets within, and, to crown the whole, the late-Gothic Church of St. Jacob, with its two fine spires, making a picture quite unsurpassed for picturesqueness and wholly mediæval character. Nowhere is the handiwork of the modern



PUNISHMENT TOWER AND ST. JAMES CHURCH
ROTHENBURG


A HOUSE NEAR ST. JAMES' CHURCH
builder to be seen. At the first sight of the walls and towers one is conscious of a certain vulgarity and modernity in approaching the place by means of the twentieth century appliances of steam and locomotive. A litter and a procession of sumpter mules would seem a more fitting way of entering such a town than to rattle, in a hotel omnibus, under the arch of the old Röderthor, with its time-worn, massive towers and its double walls enclosing a deep trench, grassgrown, and in spring a mass of flowering fruit trees. But the omnibus is the one concession to the modern spirit of travel.

The burghers of Rothenburg did not, indeed, build on the lavish and imposing scale of those of Nuremburg, nor was the town like Würzburg ever the residence of powerful patrons of art; but it must have been architecturally one of the finest towns of the second class in Germany nevertheless, and its perfect preservation makes it more fascinating as a whole than its more celebrated rivals.

The town has been doubly walled in. Inside its present boundaries many of the streets are spanned by gateways, surmounted by massive towers which
mark the boundaries of an earlier wall, which was allowed to remain when the city had grown to such an extent as to demand a larger cincture. The new wall was, like the old, furnished with many gateways and with towers of manifold shapes, often surmounted with quaint carved roofs. Both walls are well preserved, but it is impossible to say when the oldest portions of either may have been built, so much have they been patched, altered and restored. Distinct traces of Romanesque work are, however, often visible. Most of the existing buildings within the town date from the late Gothic and Renaissance periods, the lack of many earlier remains being due to the destruction by the Bavarian vandals, whose name is still a byword in the mouth of Rothenburg. From the prostration which followed this destruction Rothenburg was slow in recovering and the Renaissance revival was late in reaching the town. Its impulse seemed to have come from Nuremburg, since builders from that city are credited with most of the finer structures, a certain architect named Wolff, who remodelled the Rathhaus in 1572, being conspicuous among them.

It is the general aspect of Rothen-


burg, however, rather than any of its particular buildings, that makes it valuable to the architect, for although there are many fine and curious structures in the place, they are surpassed, as we have said, by others of similar sorts in various German towns. Outside of Rothenburg, however, it is impossible to find such an unchanged mediæval aspect as every street and square presents. Within the walls cluster the high red roofs with their steep gables and quaint
yellow, green or lavender, with which they have been coated. It is not easy to imagine the extremely picturesque effect this sort of coloring, when subdued by time, can give to these quaint streets.

One would like to be able to give in this paper some idea of the history which makes the student as enthusiastic in the streets of Rothenburg as is the architect. It was already spoken of as a town in a document dated 942 ,

chimneys, crumbling portals, old fountains, carved wooden galleries and long stretches of ivy-covered wall. The greater part of the town is made up of comparatively small, low dwellings, two stories in height at the most, some of them facing the street, while others stand, for no other apparent reason, with their gable ends to it. They are undoubtedly very old for the most part, but their simple construction does not lend itself to the exact fixing of dates, and their heavy, half-timber construction is only occasionally visible through the delicate washes of pale tints, pink,
and from 1274 to 1803 was a free city of the Empire. In the fourteenth and fifteenth centuries it was an energetic member of the Franconian League; in 1543 it joined the revolt of the peasants, and in 1543 it embraced the Reformation. We have no space to tell here the many stories, true or fictitious, or mingled fact and fiction, which hover around every structure. Yet even the picturesqueness of the town becomes doubly interesting when we know- the scenes its stones have witnessed, - when we read how the peasants were slaughtered by the hundred


"GAME WARDEN'S HOUSE", ROTHENBURG
after their celebrated revolt, till the steep Schmiedgass ran with blood in streams; when we are shown the place where some of their leaders were lowered over the wall by the friendly monks of the Franciscan convent; when we peer into the dungeon where one of the greatest of the city burghers, Heinrich Toppler, met an unjust and dreadful death at the hands of his jealous fellow citizens, and, above all, when we are told the chief story of the town, upon which the Whitsuntide play is founded.

This incident relates that during the Thirty Years' War, Tilly, after a long siege, entered the town, and, surrounded by his troops, made his way to the Rathhaus, vowing in wrath that the chief burghers, who had been responsible for the stubborn defense, should die. The burghers, assembled before him in the great hall, heard the sentence in silence - they knew that argument or appeal would alike be useless - and then, with a courtesy surely admirable under the circumstances, ordered the city vintner to set before their conqueror some of Rothenburg's oldest wine. So the butler brought and set before Tilly the great municipal loving-cup (which is still shown to the visitor) holding thirteen schoppen or about thirteen pints,
filled to the brim with the priceless vintage. Tilly tasted it and tasted it again, and then passed the enormous glass from hand to hand among his officers. But when they had all drunk and returned it to him it was but half emptied. Perhaps the wine had made him merry;--at any rate he cried, as he weighed the goblet in his hand: -
"Come, you Rothenburghers have a reputation for deep drinking. If one of you will empty this cup at a single draught I will spare the lives of your magistrates!"

Tilly's officers roared with laughter and even the burghers were forced to smile at so impossible a proposal; but one of their number stepped forward.
"I am an old man," he said, "and, after all, since I must die, what matter how! I will attempt the feat."

So the great goblet was filled again, filled till the wine brimmed over; and, after a brief prayer for strength, the old man raised the cup to his lips. Breathlessly the burghers watched him tilt it higher and higher, inch by inch. The wine was a quarter gone - a half -three-quarters - but the burgomaster seemed to waver. Could he finish it? They fell on their knees around him and prayed aloud. With a supreme effort the old man forced the remaining drops down his throat and then fell back



unconscious; but the lives of Rothenburg's magistrates were saved. (It is pleasant to read, as a sequel, that the heroic burgomaster recovered, and that his first words on coming to his senses were, "I could never save another town!")

This is Rothenburg's chief legend, but it is by no means the only one. House after house is pointed out as that in which one emperor or another has lodged on some famous journey north or south, and each tower and gateway has its own tale, ghastly or grotesque. But were this not so, every street corner and every vista within and without the gates offers such views of quaint beauty and pictorial charm that he who knows nothing of Rothenburg's history is amply repaid by a visit. Neither modern history nor modern building has a word to say when the little town tells its tale of mediæval and Renaissance days.

The two edifices of the town, which may be singled out as having special architectual merit, are the Rathhaus and St. James' Church. In the case of the Rathhaus, a picturesque old Gothic building was partially removed in the sixteenth century to give place to Renaissance additions, but much of the Gothic portion still stands, and the fine façade on the Herrenstrasse and the picturesque tower are Gothic. The newer portion facing on the square is one of the finest structures which the Renaissance gave to Germany, with its many stories, its octagonal staircase, rising through the centre of the entire elevation, its small turrets at either end, its splendid open portico in the Italian rustica style surmounted by a flat roof edged by a beautiful balustrade. The Gothic and Renaissance portions combine singularly well, and together make a group which for architectural as well as pictorial effect cannot be easily surpassed. It was in the great hall of this Rathhaus that Tilly's famous wager was made with the burghers, and it is here that the chief scene of the festival play is enacted.

Ecclesiastical buildings of the Renaissance period are much rarer in Protestant towns than those which remained longer faithful to the Catholic faith. Rothenburg is an example. All the churches here are late Gothic. Of the two chief churches, St. James' and St. Wolfgang's, the former, very high in proportion to its breadth for a German church, with its towers equal in size but not alike in design, is the only one that affords anything remarkable to the architect. German builders were noted for adapting their designs to the nature of their sites, and apparently thought no problems offered by situation impossible of solution. Thus the builders of Jacobskirche, when they found that a street interfered with their work, did not close it up, but merely bridged it over, letting it run through a sort of tunnel underneath the western end. From the outside the church, with both its choirs, appears as a whole, merely pierced by the tunnel, but inside there is an actual, structural division. The organ loft at the west end stands on the top of the tunnel and there is no interior communication between the nave and the apse which is used as a little museum.

It is, however, as we must repeat, not the individual buildings that makes Rothenburg so fascinating in its charm, so bewildering in its divergence from all other towns. It is the fact that while everything else in Germany, as elsewhere, is changed and changing, so that even the glories of Nuremberg and Hildesheim are passing, the little city has proved refractory in the face of allleveling cosmopolitanism. This gives Rothenburg its special claim on the imagination and its certain hold on the memory. The burghers are quite conscious of the distinction of their town and are - at least for the present - the safe guardians of its beauty.

## S. F. Nutter.

Note. - Many of the illustrations of this article have been reproduced, by permission, from photographs in the collection of Miss Bertha von Seckendorff, Boston.

FRENCH WROUGHT-IRON GATE GRILLES


> GATE OF THE PALAIS DE JUSTICE


FRENCH WROUGHT-IRON GATE GRILLES



FRENCH WROUGHT-IRON GATE GRILLES


GATE OF THE PLACE STANISLAS
NANCY


THE ITALIAN COUNTRY-SIDE

THE first impression of Italy upon an unaccustomed eye is that of a superb affluence in all the arts. Above all others it is the land of sculpture, of painting, and of architecture. The light of its lambent skies searches the marble encrusted walls of its cathedrals and finds no flaw; and penetrates beneath the great arches of its noble cloisters only to reveal unsuspected treasures. It is a land of color, the gamut of which ranges from the glories of mosaics to the subtle faded tints upon sunwashed walls; a land of form from the majestic sweep of Roman arches to the impalpable intricate reliefs of Renaissance pilasters.

But though the greater marvels of Italian architecture overwhelm all small achievements, and cause the traveler to neglect and overlook what elsewhere would court his attention, to him who knows the land and lives with her as a lover, her wandering roads, her walled ways crowned with flowers, and her girdled hills are constant and familiar delights; and to him there comes the knowledge that the same spirit of noble effort, of appreciation of form, of color and of effect that compels admiration from the masterpieces is to be found everywhere. Not alone in great portals, columned halls, and storied towers is to be found care for proportion and composition, breadth and simplicity of detail; but every wayside gate, every stepped ascent which leads to some neglected shrine, every little fountain


MOLTRASIO, LAKE OF COMO
of the public square bears witness to the loving labor of a master hand. Elsewhere, it may be, the common thing, the utilitarian requirement receives only so much attention as it demands, and is put forth uncared for in its conception and uncriticised in its results; to the great opportunity only is devoted the great effort. It has not been so in Italy. Her art has created its own tradition which does not brook the existence of work of unskilled minds. Whether from the unconscious effect of environment, and the persistent, pervasive influence of the noble work of the past, or whether from the innate perception of the Latin people, or from whatever cause, a sense of broad scale, of elimination of unnecessary detail, of simplicity of mass, and of the concentration of interest is constant in all minor Italian works. Those who have adorned Italy were not unmindful that the greatest of virtues may show in the least of things, and took pleasure in creating beauty from the humblest of materials.

The broad high roads that lead out from the Italian towns, often barred at their point of departure by the shadows of mediæval gates and towers, do not conduct us at once amidst green fields, but run at first between vineyard walls which wind with the road itself and are broken here and there by gates. One side of the way blazes in sunshine; the tinted plaster, which has scaled away from the brick in places, and has been
patched again and again but never twice in the same tone, is pink or lilac or pale pearly gray or saffron yellow, and athwart it fall deep shadows of the swaying foliage which pours over its top, while little emerald lizards flash from shadow to shadow and search the crevices. A net work of narrow lanes, each with its wall, lead right and left from the road, and occasional openings into these byways show us vistas of tempting shade. Here and there a more imposing gateway appears, with perhaps tall supporting posts topped with urns, or, it may be, a fragment of sculpture wreathed and well nigh lost in foliage, and peeping between the bars we may perchance catch a glimpse


ENTRANCE, VILLA MEDICI, ROME
of overgrown stepped terraces, and white balustrades, and behind them the placid, basking façade of a villa. At times the walls of such a villa may also form the walls of the road itself, but the windows are set too high for us to glance in.

If the road be hilly, as are those delightful vias outside Florence and Siena, the summit of each rise gives us a view over the walls, which stretch in a great net over the countryside, holding within their meshes fields of color, the shimmering gray of the olive, the rich green of grass land, and the deep bronze of the cypress. Everywhere stand these cypress sentinels, their fin-ger-like tops pointing the way for the wind. On the heights in the distance we see the walls rising again and lead-


YILLA MEDICI FROM REAR, ROME
ing to long low-roofed buildings (the roofs are gray with lichen, but in the sunlight the red of the tiles gleams through like embers through the ashes) with here and there a square-topped tower. As the road winds on, however, the bordering walls become lower until they may be but waist high, and at times disappear altogether. The gates are now light iron grilles, often masterpieces of twisted and curved blacksmith's work. Even the locks have given the craftsman pleasure, and are


IN THE ENVIRONS OF FLORENCE


A GLIMPSE IN VERONA
full of quaint scrolls and leafage. Underfoot our road, which was paved with cobbles near the town, now becomes a hard white fillet of earth, and runs on past farm houses and store houses, with here and there a group of buildings clustered at a cross road, and now and then a Spaccio da Vino, or wine shop, with its accustomed frequenters lounging at the door.

There are many noticeable features about the farm buildings of Italy, and


OUTSKIRTS OF ORVIETO
one of the most conspicuous of these features - as it is in fact of all Italian buildings outside of the cities - is the very large proportion of wall space to window opening, a feature due principally to the desire to keep the interior cool and dim in the summer heat. Indeed there is nothing more refreshing than the spacious, high, bare rooms of an Italian farm house on a hot day with the glow of the outer sunlight filtering in through the small windows. The floors are tiled and against one wall
is a stone platform with benches at either side, while above this a great inverted hopper-shaped hood descends within seven or eight feet of the ground, and beneath it, in the centre of the platform, stand two towering fire-irons with a cross-bar at the bottom, a crane in the middle and wrought-iron brackets at the top, to hold hot plates. Between these irons is banked the fire of logs and twigs, and wreaths of smoke ascend into the hood, which is red with rust and soot. In the stone hearth are


OUTSKIRTS OF ORVIETO
little depressions of greater or less diameter, into each of which is scooped a handful of glowing charcoal, covered by a barred grating, and over which the different dishes are simmering; - the pleasures of smell are quite as conspicuous as the pleasures of sight. Upon the walls are the copper pipkins and deep bowls with burnished surfaces reflecting every glint of light, while from the ceiling beams, which are black with age, hang long festoons and streamers of

on the road to rome


A WAYSIDE DWElling
herbs and leeks. In this room, or upon the loggias, according to the season, is placed the long table, its wooden surface scrubbed, its steaming viands flanked with straw-guarded long-necked fiasche of the wine of the country.

Upon one side of the house, recessed between wings or towers and usually opening towards the view or towards the sunset, is the loggia, often two and even three storied, arcaded or colonnaded. Upon it in the twilight the table for the evening meal is set, and during the day, when the shadows of the deep eaves fall upon it, lounges and hammocks are stretched here for the afternoon siesta. Such loggias as these are delightful places for al fresco repasts, and memories of them linger in our recollections; - one at the inn at Corneto (which was at one time the small palace of the Vitelleschi) ; another at the rear of the Palazzo Piccolomini at Pienza, overhanging a garden which falls in terrace after terrace to the river below, across which the uplands rise and


A FARM HOUSE
fold to the slopes of Monte Amiata against the western sky; another at Vallambrosa, and, nearer Florence, at Monte Senario which opens upon a view across the valley. But loggias are not confined to palaces, villas and inns only, each little farm house has its breathing space.

The staircase to the upper story of the wayside dwelling is often on the outside. In fact, at Corneto, and Viterbo, and around Naples it is only occasionally that an inside staircase is to be found. But these staircases are not the ephemeral, light wooden ones like those of Switzerland, the Tyrol, and of northern lands, but solid affairs with walled balustrades and broad platforms, and are features of the design. It has been

thought worth while to consider their symmetry even in small farm houses, and frequently they are double, meeting in the centre over a springing arch, with a nobility of treatment that is elsewhere only adopted in monumental works.

Another feature of the Italian villa is the broad cistern - a sheet of water confined in a low curb. These great rectangular basins, fed either by a slender fountain jet, or by a falling spray at one end, are the reservoirs which serve for all household uses, - for washing, watering the garden, for drinking troughs and the like. Over them droop the leaves of the plane trees, and the pomegranates, and reflected in their surfaces the white of the walls gleams between dark cypresses. In the greater


APPROACHING BOLOGNA
villas, such as the Villa Lante at Bagnaja, the Villa Madama, outside Rome, and the Villa d'Este at Tivoli, these sheets of water are made ornamental, and connected with each other by cascades and rushing streams; but each simple farm house has also its pool to enhance its charm.

The fountain basins in the village squares, too, are full to the brim, and from their rippled surfaces rise shafts bearing the sculptured devices of the town (such as the palm tree at Viterbo) from which flow films of water, plashing as they fall, - for the Italians know, as do the natives of all southern lands, how grateful to the senses is the sight and sound of running water.

The square pavilions at the ends of the façades, which at times rise almost to the dignity of towers, are the relics of fortified houses of the past. They still dominate the masses below them, and are to be seen penetrating the surrounding verdure upon every hill-top in Etruria and Tuscany; and at the long vistas of road in the Campagna.

The materials of the architecture differ in the various provinces. In the south, the walls are more frequently covered with plaster than in the Lombard plains. In Emilia, the great undu-
lating land in the midst of which lie Bologna, Mantua, Parma and Piacenza, rise square brick towers, pierced at the top with delicate arcades, and here and there, when more delicate detail is desired, inlaid with the white marble of Carrara. Such white notes amid the glowing reds of the tiles and bricks, give staccato passages in the architecture, accent string and belt courses, and add brilliancy to the already studied composition. They sparkle in the sun and gleam in the shadow, and form delicate lace-like patterns above the stern walls of mediæval towers.

Across the streams spring low, arched bridges, crowned at their centers and buttressed by walls at their abutments; and the streams themselves are prevented from encroaching upon their banks by long, low walls nearly hidden in verdure. Indeed every space is enclosed, and the land announces its long past by this alone, were there no other indications.

After its meanderings across the country, the road, as it again approaches a town, enters between high walls. At first it hugs the base of the town height, so that the wayfarer sees the houses on the terraces high above him, and often winds entirely about the place before


VIEW IN FIESOLE


AT PONTICINO
making its final entry through the gates. Such a road runs back of the Pincio in Rome at the base of the walls of the city. This road is for the most part of the day in deep cool shadow, while high above, on the summit of the wall, wave spreading stone-pines and cypresses, the only hints of the hidden garden behind- that sombre, delightful garden of the Villa Medici, with its statues and fountains and shadowy walks.

To the student of books the famous places of Italy are, at least in their light and shadow, familiar; but the byways, the nooks and corners of the countryside in the glow of Italian sunshine are open only in those who follow its ways from village to village, whether in the Campagna, the valley of the Po, the plains of the north, or the mountain towns of Etruria or of the Sabine Hills.

Above all else in Italian work is there a sense of amplitude, of space. The nooks of Gothic and Northern lands find no place in the Italian conception of comfort or use. The rooms are four-


GATEWAY AT AREZZO
square, not worried into petty alcoves; the ceilings are high and vaulted, and arched forms are everywhere. The combination of broad wall-surface, spacious plan and springing arch produces a dignity, a breadth of effect, which is most grateful, especially in comparison with the romantic and bizarre architecture of parts of Germany and of France. It is in harmony with the broad expanses of the Italian landscape, the undulations of her hills, the sweeping curves of her rivers. There is no agitation in these forms, no nervous activity, fretting, attracting attention, presupposing an audience; all is quiet, simple, broad and, to every sense, restful. The lowlying farms bask in the sunlight, the long lines of walls follow the curves of


A FARM-HOUSE CISTERN
the hills, and here and there a tower accents a height. There is no discordant note, no appeal for isolated or individual attention; and if the jewels of wonderful carving or of burning mosaic are desired, they must be sought for, and will be found subordinated to the general simple, peaceful masses of the architecture.

The influence of such work gradually permeates the mind of the student so quietly that he is unaware of the effect, but none the less permanently until the time comes that he again sees the architecture of other lands Then he realizes with surprise the struggle for effect, the strained effort for achievement to which he has been a willing exile.

[^6]
w. R. EMERSON, ARCHITECT, BOSTON

Our new Color Chart is now ready for distribution, and will be sent on request to any architect or draughtsman who has not yet received it. It shows 64 harmonious and artistic combinations in

## Cabot's Shingle Stains

on the W. R. Emerson house which is reproduced above, and has a cover designed by Edmund I. Leeds.

Samuel Cabot, Boston, Mass.


## The "Neptune" Flushing Valve

A SIMPLE AND RELIABLE FIXTURE WHICH DISPENSES WITH THE TANK OVER THE WATER CLOSET

THIS valve is designed to dispense with the use of a tank over each closet $\varnothing$ It may be con= nected to the main house tank or to the direct supply from street main


I$T$ is simple in construc= tion, practically noise= less in action and not liable to get out of order. For schedule of pipe sizes for different pres= sures see Catalogue $E$ We invite a critical in= vestigation of this valve

## DALTON =INGERSOLL COMPANY

Established 1847
Manufacturers of Sanitary Specialties and Plumbers'supplies 169 TO 175 HIGH STREET, BOSTON, MASSACHUSETTS

## 



## The Duplex I Beam Hanger

MADE OUT OF MALLEABLE IRON

Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E , Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER CO.

CLEVELAND, 0HIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.
Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.

Philadelphia \& Boston Face Brick Co. P.O. Box 8929.

Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted.
It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, <br> BOSTON.




Geo. W. Maher, Architect, Chicago.

## Use

## Dexter Sbrothers' 

ON ALL SHINGLED SURFACES
interior stains a specialty
Send for sample boards and color plates to
Dexter $\mathfrak{j B r o t b e r s}$,
55 and 57 Jbroad $\mathfrak{w t r e e t , ~ J b o s t o n , ~} \mathbb{K}$ Sasg.

## Folsom New Model N Snow Guard. <br> Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

$$
\overline{=}
$$

THREE HISTORIC BUILDINGS.

> Faneuil Hall, Old South Church, King's Chapel,

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.


Every three feet of

## The best SASH CORD Made

IS NOW MARKED
SILVER LAKE "A"
Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.
 CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

Supremis Floor Finish Shipoleum tor Standing Finish.
White Enamelite An Enamel Paint for Colomial Interiors.

Send for our "Suggestions", on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## Masters in Art

for 1901

| January | Rubens | Part 13 |
| :---: | :---: | :---: |
| February | Da Vinci | Part $\mathrm{I}_{4}$ |
| March | Durer | Part I |
| April | Michelangelo (sculpture) | rt 1 |
| May | Michelangelo (Painting) | Part ${ }_{7} 7$ |
| June | Corot | Part 18 |
| July | Burne=Jones | Part 19 |
| August | Ter Borch | Part 20 |
| September | The Della Robbias | Part 2 I |
| October | Gainsborough | Part 22 |
| November | Correggio | Part $2^{3}$ |
| December | Andrea del Sarto | Part |

SINGLE COPIES FROM DEALERS OR BY MAIL, I5 CENTS
YEARLY SUBSCRIPTION, \$r.50. STRICTLY IN ADVANCE

Bates \& Guild Company, Dub's 42 Chauncy Street, Boston, Mass

## B O O K S O N Colonial Furniture

The Furniture of
Our Forefathers Price, $\$ 1600$

English Household
F U R N It U R E Price, $\$ 10.00$

Illustrated Circulars on Request Bates $\mathscr{O}$ Guild Company BOSTON, MASS


Stongest, simplest, neatest, most durable. Door swings on fixed pintle-cannot sag. No other hinge so good.
Builder's Catalogue mailed Free.
Stover Mfg, Cor,
181 River st.
Freeport, Illinois.

SEND FOR OUR CATALOGUE OF FLY SCREENS
Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.
 MADE OF STEEL GALVANIZED, ${ }_{16}^{1 / \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. J0HNST0N, NEWP0RT, R.I.

## ABSOLUTELY

WHITE TERRA COTTA
of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

## RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


A New Era in
Screens \& Awnings
Just think this over!
Do you want Solid Comfort, No Flies, No Sun Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Screen and Awning.

Send for Catalogue.
PHENIX MFG. CO.
028 Centre St.,
MILWAUKEE, WIS.



PLPIN OR OBNAIIENTHL Thick or Thin

We have representatives
and stocks of floors in the and stocks of floors in the Prices and Book of Designs.,

## FLOORS

 THE INTEEIOR HRRDWOOD CO., MIIAnITS.INDIANAPOLIS, IND.

Modern
Lights for
Modern Stores
I. P. FRINK 551 Pearl St. New York

> OUR SPECLAL PATENT REFLECTORS FOR SHOW WINDOWS, OUR SECTIONAL GLASS CLUSTER LIGHTS FOR INTERIORS, AND SPECIAL REFLECTORSFOR SHOW, WALL AND SIDEWALK CASES MEET THE PROBLEM OF STORE LIGHTING MORE PERFECTLY THAN ANY OTHER LINE OF LIGHTING FIXTURES MADE. CORRESPONDENCE INVITED

## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can have water every day in the year, and your cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


Rider-Ericsson Engine Co.

# THE <br>  <br> SERIES <br> OF <br> ARCHITECTURAL ILLUSTRATION 



ST. MARK'S CHURCH: VENICE
CAPITALS, PALAZZO GONDI: FLORENCE
THE CHÂTEAU OF PIERREFONDS
BATES AND GUILD COMPANY BOSTON MASS.

## THE ELEIMENTS OF ARCHITECTURE

By the Curious Pensil of the
Ever Memorable
SIR HENRY WOTTON, Knight
(LONDON 1651)
(w?

A COMPLETE REPRODUCTION OF THIS FAMOUS WORK, PRINTED ON IMPORTED HAND-MADE ANTIQUE PAPER \& ${ }^{\circ}$ HANDSOMELY BOUND : SENT POSTPAID, ON RECEIPT OF PRICE: $\$ I .50$ A COPY

THE F. A. BASSETTE COMPANY © Springfield, Mass.


T FROM REGINALD BLOMFIELD'S HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND: "Bacon's Essay is too well known to need description. Scarcely inferior in literary charm, and far more valuable in its sound sense and practical insight into the subject, is Tbe Elements of Arcbitecture, collected by Henry Wotton, Knight, from the best authors and examples."

# STRATHMORE DRAWING BOARD 

The following letter is one of the many proofs that our papers are the best:
"MITTINEAGUE PAPER CO.
Dear Sirs: I have just received the 25 sheets. It is the best paper I have seen and I wish you would send me 150 more sheets. Sincerely yours,
C. D. GIBSON."

WRITE FOR SAMPLE BOOK
Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES of architectural illustration 

PUBLISHED MONTHLY BY

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS

SUBSCRIPTIONS : Subscription price, $\$ 1.00$ a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$ 1.50$. Single copies, Io cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mal usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be respongivle for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each sible for copies lost through failure to notify them of such changes. THE Brochure series is maned
month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for 1897,1898 , 1899 and 1900 , $\$ \mathrm{r} .00$ each. Bound Volumes, in specially designed buckram covers, for 1896, $\$ 3.50$ : for $1897,1898,1899$ and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## NOTES.

The Bates \& Guild Company announce for early fall publication, a book which they believe will prove of great value to every architect and draftsman, and supply a place hitherto unfilled in the working library of any one who uses a pen for artistic purposes. This book will will be a treatise on "Letters and Lettering " by Mr. Frank Chouteau Brown, who is a recognized expert on this subject. Mr. Brown has long been at work on this manual, and has collected a great number of alphabets of all times and styles, and from these he has chosen over one hundred of the most representative, useful and beautiful examples designed by ancient and modern masters. In making this selection it has been his aim to include none, no matter how quaint or beautiful in itself, which because of its character could not be applied to work of the present time, and the publishers believe that they can safely assert that no such valuable material on this subject has ever been collected within the covers of one book, no matter what its cost. In addition to these examples, Mr. Brown has written a careful preface explaining the methods of lettering, dealing with the appropriate use of various alphabets, the arrangement of letters, their spacing, processes of enlarging and reducing, and the like, and has discarded historical discussion in favor of purely practical and helpful matter. In spite of the great number of examples to be included, and the labor which has gone into the preparation of this book, the publishers count on a large enough sale to enable them to produce the treatise at a very moderate price. In size and general appearance it will resemble "Pen Drawing" by Mr. Charles D. Maginnis, to which it may be considered a companion volume.
"Pen Drawing," the illustrated treatise by Mr. Charles D. Maginnis, first published less than two years ago, has nearly exhausted its second large edition, and a third is now in preparation. The unusual success of this little handbook proves that the intention of its author, to make it a practical guide which should take the place of a teacher in the art of pen drawing, has been most admirably fulfilled. One purchaser wrote of it, "It has taught me all that a teacher could have taught - how to begin right, how to avoid difficulties, and the 'tricks of the trade.'" It is written interestingly and clearly and with this treatise at his elbow a draftsman can make most valuable use of his spare moments.
I. P. Frink of New York reports a number of important orders which go to show the appreciation architects have for really well made reflecting fixtures. St. Joseph's Orphan Asylum, Pittsburg, of which Alden \& Harlow are the architects, will use three hundred sectional glass cluster reflectors which are used very largely in institutional buildings of all kinds. The new store of Hahne \& Co., Newark, N.J., one of the largest department stores in the country, will use about five hundred feet of Frink's special patent show window reflector, about the same amount of show case reflectors, and over two hundred cluster reflectors. There are no store lighting fixtures that compare with the special line manufactured by Frink; they have not only been adopted by hundreds of the largest retail stores in this country, but a considerable number are exported. Among the unusually large orders recently received are one for a large department store in Monterey, Mex., and one for a large dry goods store in Dublin, Ire.

 1901, OF "THE STUDIO" ENTITLED

## " (IISodern Jkritisb Bomestic Hrcbitecture and Pecoration

N order that the progress made during the last few years in DOMESTIC ARCHITECTURE AND DECORATION may be prominently set forth at the commencement of the New Century, THE INTERNATIONAL STUDIO, in pursuance of its persistent advocacy of Art Revivalism, has devoted its Special Summer Number for 190 to the consideration of the latest and best examples of these Arts by British Designers.
CHAPTERS by expert writers, upon ARCHITECTURE, DECORATION, FURNITURE, STAINED GLASS, METAL WORK AND EMBROIDERY are given, and the illustrations include a large number of original and hitherto unpublished Designs, many of which are reproduced in Colors.
NO pains or expense have been spared to make this the most remarkable work upon Modern Decorative Art ever published.
ON account of the great cost involved in a reprint, only ONE EDITION of this Special Number can be issued, and in order that copies may be secured, applications should be forwarded to the Publisher without delav. This reminder is given in view of the fact that several Special Numbers of THE INTERNATIONAL STUDIO have been SOLD OUT shortly after publication, and many intending purchasers have been unable to obtain copies.

## EXAMPLES OF WORK BY THE FOLLOWING ARCHITECTS AND DECORATORS APPEAR:

Messrs. Bedford and Kitson
Frank Brangwyn
C. C. Brewer
W. H. Brierley
R. A. Briggs
Walter Cave
C. J. Harold Cooper
Crouch and Butler
E. Guy Dawber
Nelson Dawson
G. M. Ellwood
H Granville Fell
Alexander Fisher
R. L1. B. Rathbone M. H. Baillie Scott W H. Seth=Smith Edgar Simpson James Smithies Charles Spooner Heywood Sumner Ingram Taylor Philip Tree David Veazey C. F. A. Voysey George Walton And others.

## AMONG THE REPRODUCTIONS IN COLOR EXAMPLES OF WORK BY

Frank Brangwyn Edgar Wood M. H. Baillie Scott George Walton
L. Gammell

Ambrose Heal, jun.
Ralph Heaton
Selwyn Image
A. Wickham Jarvis
C. R. Mackintosh

Herbert McNair
F. Marriott

Arnold Mitchell
Ernest Newton
Oscar Paterson
Edward S. Prior
W. Bainbridge Reynolds

Frank Brangwyn
W. H. Brierley R. A. Briggs C. J. Harold Cooper Crouch and Butler E. Guy Dawber G. M. Ellwood H Granville Fell Alexander Fisher
C. F. A. Voysey
Miss Mary Newill Oscar Paterson H. Granville Fell

Ingram Taylor
A. Wickham Jarvis
R. A. Briggs

## PRICE, TWO DOLLARS NET

## JOHN LANE, Publisher, ${ }^{67 \text { fifth avenue york city }}$

 nannanan
## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford $\mathcal{E}$ Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

## KEASBEY $\mathcal{E}$ MATTISON CO.

## AMBLER, PENNA.

NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA
NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE

NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE
Authorized Selling Agents

NEW YORK,
ST. LOUIS,
OMAHA.
PHILADELPHIA, MAGNESIA COVERING CO.

# Details of Building Construction 

Ey CLARENCE A. MARTIN<br>Assistant Professor of Arckitecture at Cormell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper foxi2 $1 / 2$ inches, and substantially bound in cloth.

Price, Postpaid, $\$ 2.00$
Bates $\mathcal{E}$ Guild Co., 42 Chauncy Street, Boston, Mass.

ST. MARK'S CHURCH, VENICE

CAPITALS, PALAZZO GONDI, FLORENCE

THE CHÂTEAU OF PIERREFONDS


# THE <br> BRochure SERIES 

OF ARCHITECTURAL ILLUSTRATION

1901
$\begin{array}{ll}\text { AUGUST } & \text { NO. } 8\end{array}$

## ST. MARK'S CHURCH, VENICE

"KNOW it as well as you may from description and picture," writes Théophile Gautier, " the first actual sight of St. Mark's, rising at the end of the Piazza San Marco, will strike you breathless. It seems like some oriental dream, turned into actual stone by the enchanter's wand."
"It rises," says Mr. Ruskin, "a vision out of the earth, and all the great square seems to have opened from it in a kind of awe, that we may see it far away;-a multitude of pillars and white domes, clustered into a long, low pyramid of colored light; a treasure-heap, it seems, partly of gold, and partly of opal and mother-of-pearl, hollowed beneath into five great vaulted porches, ceiled with fair mosaic, and beset with sculpture of alabaster, clear as amber and delicate as ivory, -sculpture fantastic and in-
volved, of palm leaves and lilies, and grapes and pomegranates, and birds clinging and fluttering among the branches, all twined together into an endless network of buds and plumes; and, in the midst of it, the solemn forms of angels, sceptred, and robed to the feet, and leaning to each other across the gates, their figures indistinct a mong the gleaming of the golden ground through the leaves beside them, interrupted and dim, like the morning light as it faded back among the branches of Eden, when first its gates were angel-guarded long ago. And round the walls of the porches there are set pillars of variegated stones, jasper and porphyry, and deep green serpentine spotted with flakes of snow, and marbles, that half refuse and half yield to the sunshine, Cleopatra-like, 'their


bluest veins to kiss' - the shadow, as it steals back from them, revealing line after line of azure undulation, as a receding tide leaves the waved sand; their capitals rich with interwoven tracery, rooted knots of herbage, and drifting leaves of acanthus and vine, and mystical signs, all beginning and ending in the Cross; and above them, in the broad archivolts, a continuous chain of language and of life - angels, and the signs of heaven, and the labors of men, each in its appointed season upon the earth; and above these, another range of glittering pinnacles, mixed with white arches edged with scarlet flowers, - a confusion of delight, amidst which the breasts of the Greek horses are seen blazing in their breadth of golden strength, and the St. Mark's Lion, lifted on a blue field covered with stars; until at last, as if in ecstasy, the crests of the arches break into a marble foam, and toss themselves far into the blue sky in flashes and wreaths of sculptured spray, as if the breakers on the Lido shore had been frost-bound before they fell, and the sea-nymphs had inlaid them with coral and amethyst."

Built to enshrine the bones of St. Mark, which were brought by the Venetians from Alexandria in 828 , the
church was originally a Romanesque edifice. In the twelfth and following centuries it was remodelled and magnificently decorated in the Byzantine style, and in the fifteenth century its façade received the Gothic additions. During the long period from its dedication in 1085 till the overthrow of the Venetian republic by Napoleon, every doge's reign saw some addition to the rich decorations of the church - mosaics, sculpture, wall-linings, or columns of precious marbles. By degrees the walls, inside and outside, were completely faced either with glass mosaics on gold grounds, or with colored marbles and porphyries, plain white marble being. used only for sculpture, and then thickly covered with gold. In general plan the church is a Greek cross, covered with Byzantine domes over the crossing and at the end of each arm, and around the west part of the north transept runs a vestibule covered with a series of smaller domes.
"Its architecture," writes Gautier, "is of that primitive Christian type which seems to have but just emerged from the stage of the catacombs, and which, having not yet formulated any individual canons of art, here built itself a church out of the ruins of antique


PORTAL IN THE FAÇADE
ST. MARK'S

temples and the spoils of pagan shrines. Enriched in each successive century by some new treasure and adorned by some new beauty, this temple is in style a hodge-podge of Greek, Roman, Byzantine and Gothic. Here the pagan will find the altar of Neptune, adorned with dolphin, trident and Triton's horn, serving as a holy-water basin. Here the Mohammedan, seeing everywhere inscriptions in antique writing, like the texts from his Koran, might believe himself in the mihrab of his mosque. The Greek Christian will find here his Panagia crowned like a Constantinopolitan empress, his own strange figure of Christ with the interlaced symbolic cypher, and the saints of his own calendar, drawn after the fashion of the monkish painters of the Holy Mountain. And the Catholic will feel in the shadows of these naves - shadows made
more transparent by the shine of gold from the mosaics - something of the fervor of his faith in its beginnings, and realize in these hieratic forms the mysterious and profound Christianity of the ages of implicit faith."

From the main façade, which faces the Piazza, five porches give entrance to the church, and two smaller lateral portals lead to the exterior galleries on either side. The main portal is adorned by two stages of antique columns of porphyry and verd-antique, which support a round arch, the archivolt being enriched with bands of sculptured ornament cut with marvellous intricacy, while its tympanum is filled by a great mosaic representing the "Last Judgment." The lesser porches - each of them differing in details - are similarly rich in adornment.

Above the central portal stand the four famous gilded horses, which are

among the finest of ancient bronzes, and which were long supposed to be the work of the Greeks, but which are now believed to be of Roman origin, dating from the time of Nero. It is certain, however, that they were brought to Venice from the Hippodrome of Constantine at Constantinople in 1204. In 1797 they were carried away by Napoleon to Paris, but in ${ }_{18} 8_{5}$ they were restored to their former position on St. Mark's by the Emperor Francis.

The range of seven portals which constitutes the first story of the façade is divided from the second story by a balustrade of white marble. The second stage consists of five arches, the largest in the centre being glazed, while the tympana of the others are decorated by mosaic pictures, which, counting from right to left as we face the church, represent respectively the "Ascension." the "Resurrection," "Christ in Hell," and the "Descent from the Cross." The outer ribs of these arches rise into Gothic points ending in richly carved pinnacles, upon each of which stands the statue of a saint. Between the arches and at the ends rise open spires,
six in all, each forming a niche for a statue of one of the apostles. Above the central arch, set against a background of deep blue mosaic dotted with golden stars, stands the symbolic Lion of St. Mark, with wings outspread and foot upon an open page of the gospel upon which is written " Pax tibi, Marce, evangelista meus"; while upon the pinnacle above is set the statue of St. Mark himself, who seems to receive the homage of the saints grouped below him. The whole church is surmounted by five cupolas, shining like silver helmets, which terminate in little melon-like domes, each of them crowned by a St. Andrew's cross with gilt balls at each point.

The lateral façades, though they differ much in detail, have the same general character as the main front, but the architecture is so hybrid that a view is worth pages of description. They are adorned, like the front, with placques of colored marbles and enriched with Byzantine and mediæval carving of birds, chimeras, and animals of all sorts, together with mosaics and arabesques.

Like an antique temple, the basilica



WINDOW, NORTH SIDE
is preceded by an atrium, or entrance hall, which serves as a chapel. The mosaics which decorate its vaultings represent scenes from the Old Testament.
"Entering the church itself," writes Ruskin, " one is lost in a deep twilight to which the eye must be accustomed for some moments before the form of the building can be traced; and then there opens before us a vast cave, hewn out into the form of a cross, and divided into shadowy aisles by many pillars. Round the domes of its roof the light enters only through narrow apertures like large stars; and here and there a ray or two from some far-away casement wanders into the darkness, and casts a narrow phosphoric stream upon the waves of marble that heave and fall in a thousand colors along the floor. What else there is of light is from torches or silver lamps, burning ceaselessly in the recesses of the chapels; the roof sheeted with gold, and the polished walls covered with alabaster, give back at every curve and angle some feeble gleaming to the flames; and the glories round the heads of the sculptured saints flash out upon us as we pass them, and sink again into the gloom. Under foot and over head, a continual succession of
crowded imagery, one picture passing into another, as in a dream; forms beautiful and terrible mixed together; dragons and serpents, and ravening beasts of prey, and graceful birds that in the midst of them drink from running fountains and feed from vases of crystal; the passions and the pleasures of human life symbolized together, and the mystery of its redemption; for the mazes of interwoven lines and changeful pictures lead always at last to the Cross, lifted and carved in every place and upon every stone; sometimes with the serpent of eternity wrapt round it, sometimes with doves beneath its arms, and sweet herbage growing forth from its feet; but conspicuous most of all on the great rood that crosses the church before the altar, raised in bright blazonry against the shadow of the apse. And although in the recesses of the aisles and chapels, when the mist of the incense hangs heavily, we may see continually a figure traced in faint lines upon their marble, a woman standing with her eyes raised to heaven, and the inscription above her ' Mother of God,' she is not here the presiding deity. It is the Cross that is first seen, and always, burning in the centre of the temple; and every dome and hollow of its roof has the



figure of Christ in the utmost height of it, raised in power, or returning in judgment."
The general scheme of interior decoration is as follows: The whole of the domes and vaults, and the upper part of the walls down to the level of the floor of the triforium, are completely covered with mosaics of brilliant glass tesseræ, the ground being in most cases of gold. Below this every inch of the surface of the walls is covered with richly colored marbles, porphyries and alabaster, relieved by pure white marble, sculptured in panels, string-courses and the like. From the ceiling hangs a great lamp in the form of a cross depending from a wrought golden ball. At the back of the church stands the choir-screen, with its ranges of statues, its columns of porphyry, and its great cross of metal, and through it we see, beneath a verdantique canopy borne upon four columns of marble enriched with reliefs, the high altar itself. The mosaic pavement, which undulates like the sea, shows a marvellous assemblage of arabesques, interlaces and lozenges, together with
griffins, chimeras, and other animals which seem like the distorted forms of heraldic art.
" One's first impression of the interior as a whole," writes Gautier, "is not that of a church, but rather of some great golden cavern, encrusted with precious gems - splendid and sombre, shining and mysterious. What time, what care, what genius, what patience, what treasure eight centuries have lavished upon this immense heap of riches! How many golden sequins have been melted into the glass of these mosaics! How many antique temples and mosques have lent their columns to support these cupolas! How many quarries have emptied their veins for these pillars and wainscots of travertine, onyx, alabaster, veined granite, verdantique, red, black and white porphyry, serpentine and jasper! How many generations of artists have designed and inlaid, chiselled and sculptured here!
"As the atrium of the basilica was, as we have seen, decorated in mosaic with scenes from the Old Testament, the interior of the church pictures forth the

whole of the New Testament with the Apocalypse for epilogue. Indeed, the cathedral of St. Mark is a great illuminated bible, a gorgeous and enormous missal of the Middle Ages. For eight centuries a whole city has pored over this monument, as over a book of images, without ever tiring in its pious admiration. The text supplements the picture, too, for throughout, in every unfilled space and around every mosaic, run inscriptions in Greek and in Latin characters, texts, verses and sentences, together with names and monograms, samples of the writing of all countries and of all times. It is indeed rather the Temple of the Word than the Church of St. Mark, - an intellectual temple, which, in despite of all the laws of architecture, has built itself out of the verses of the Old and the New Testaments, and has found its ornament in the exposition of its faith.
"It is useless to attempt a detailed description of the mosaics of the interior, but I would convey, if I could, some impression of the wonder, almost the dizziness, which overcomes us in
the presence of this whole world of angels and apostles, of evangelists and prophets, that people cupola and vault, tympanum and arch, pillar and pendentive, and the least spaces of the wall. At certain hours, when the shadows deepen and the sun throws only oblique jets of light through the small openings of the domes, strange effects are produced, and the true inner sense of the cathedral, -mysterious, awful, solemn - seems to quicken. One might then imagine that this Christian church antedated Christ, and was a church built before its religion. Centuries seem to recede in infinite perspective. Is this indeed the Virgin, or is she rather Isis or Devaki? does she hold upon her knees Horus or Krishna? Does this form upon the cross suffer the divine Passion or the trials of the Vishnu? Are we in Egypt or in India, in the temple of Karnak or the pagoda of the Juggernaut? Indeed, do these Christian figures, in their constrained postures, differ greatly from those solemn stone processions which wind forever about the pylons of Egypt?"


## CAPITALS FROM THE PALAZZO GONDI, FLÓRENCE

A
FTER Brunelleschi, Alberti and Bramante, Giuliano da Sangallo is more noted than any Florentine architect of the fifteenth century, though his celebrity comes rather from the volume and variety of his work than from any single masterpiece. A jack-of-all-trades in art, we hear of him now building a palace, now repairing a church, now convoying artillery, now building bridges or fortifying for popes, dukes and republics alike, and now, note-book in hand, investigating the remote Italian cities which few architects had visited. Later he is a prisoner, held for ransom; but, turning the tables upon the Pisans, and their River Arno from its course, he captures his captors. He was ambassador for Lorenzo the Magnificent, guardian to the future Pope Clement VII., and during the last years
of his life, enjoyed the brilliant, if in his case somewhat empty, title of Master Architect of Saint Peter's, and died, after an active, useful and honorable career, the founder of a brilliant succession of artists.

It was about i494, though the exact date is uncertain, that he began one of his most important works, a palace " in the Tuscan manner" for a rich Florentine merchant, Giuliano Gondi! The Palazzo Gondi cannot be considered as a remarkable effort. The exterior is poor and cold in effect, and the most successful portions are the courtyard and stairway. The capitals from this palace which we illustrate, possess, however, a special interest, for tradition has it that not only did Sangallo design them all, but that he executed many of them with his own hand.
J. G. G.



CAPITAL
PALAZZO GONDI, FLORENCE



CAPITAL
PALAZZO GONDI, FLORENCE





[^7]
## THE CHÂTEAU OF PIERREFONDS

THE Château of Pierrefonds dates from the very last of the fourteenth century, when Louis of Orleans, brother of Charles VI., believing that he had been cheated of his just rights as protector of the realm, withdrew from the court, and began to strengthen his duchy of Valois in preparation for civil war. He built or rebuilt no less than eight castles, and resolved
sinated, and the subsequent history of Pierrefonds is the history of the internecine wars of France, for its unusual strength made it a place of prime strategic importance. It was defended against the armies of four kings; it was twice set on fire, and its walls crumbled under many bombardments; but even as late as the time of Louis XIII. it was still so strong that the royal forces were


CHATEAU OF PIERREFONDS
FROM THE LAKE
to crown his preparations by erecting, at the most important strategic point, a château which should surpass all others of France in impregnability. Louis was, however, not only a warrior, but the most magnificent lord of a luxurious court, and he planned that Pierrefonds should be the most sumptuous residence as well as the mightiest stronghold in the land.

Shortly after the completion of his castle, however, Duke Louis was assas-
obliged to subject it to a two days' unremitting cannonade before they could dislodge the revolutionaries; and Louis, to avoid such danger for the future, had those of its towers that were still standing in 1617 blown up with gunpowder.

During the French Revolution the ruin was sold; but in $\mathrm{I}_{1} \mathrm{I}_{3}$ the First Napoleon, recognizing its historical and artistic importance, repurchased it for the State, and his successor, Napoleon III., set aside a considerable amount



COURT, SHOWING CHAPEL AND GRAND STAIRCASE
CHATEAU OF PIERREFONDS
from the public revenues and added more from his private purse with the object of completely restoring the castle to its original condition. The work of restoration was begun in 1858 , under the charge of the learned Viollet-le-Duc ; and thanks to him, Pierrefonds has been made to resume, as far as possible, its original aspect, and now stands as the most complete and beautiful existing example of a fifteenth century fortified château and princely residence - a type of mixed architecture in which, from the time of Charles V. to that of Louis XI., the French were preëminent, and from which the splendid Francis I. style developed.

In plan the château is approximately rectangular, with an open courtyard in the centre, and with battlemented walls and great machicolated towers rising at every corner and from the middle of every side The wing to the left of the entrance (looking from inside the courtyard) was mainly occupied by the keep or donjon, in which the lords' living apartments were situated. On the ground floor of this wing the private kitchens and offices were located, and above, reached by the Staircase of Honor, was a great banqueting hall,
with its dependent ante-rooms and the seigniors' chambers. The three remaining sides of the courtyard were devoted to the chapel and to arsenals, apartments and chambers for lodging the garrison. At the back of the courtyard rises the Grand Staircase which led to the great Hall of State, where the lord held audience on formal occasions. Before this staircase now stands a modern equestrian statue which was designed to show, in minutest detail, the arms and equipment of the mediæval war lord when arrayed for battle.

At the time when Pierrefonds was built, the peasant vassals of the various French barons had come in great measure to substitute money payment for personal military service; and in consequence, though the lord always maintained an armed retinue of faithful retainers, he was obliged on occasions of special need to hire a great body of mercenaries. These mercenaries were merely adventurers who sold their services to the highest bidder, regardless of cause or leader, and were consequently easy subjects for corruption. It is interesting to observe how this state of things influenced the architect of Pierrefonds. He found it necessary to make



THE SEIGNIOR'S ANTE-ROOM
his castle as safe from treachery within the walls as from attack from without. The towers were, of course, the key points of the defense, and in them in time of siege, the troops whose loyalty could be relied upon were posted. The entrances to these towers from the courtyard, where the mercenaries would be stationed, were, however, only through narrow winding staircases, so narrow that a faithful few within could guard and hold a tower indefinitely against a treacherous attack from the court. The château was, therefore, merely a strong shell, equally guarded from attack within and without, but which could, in case of need, be filled with mercenaries previously quartered in the courtyard, should no reason appear to doubt their loyalty.

Most of the interior apartments of Pierrefonds were mere bare stone halls, well built, commodious and lofty, but affording little architectural interest. The private rooms of the lord, within the donjon, however, even in their ruined state, contained so many fragments of richly carved wood and stone, and so many patches of brilliant, poly-
chromatic wall-decoration, that the restorers were able to almost completely rehabilitate them, and show us how the chambers of a mediæval baron looked in his own day.
A. M. N.


A fireplace
CHATEAU OFPIERREFONDS



## The "Neptune" Porcelain Urinal

 $T$ HIS is the most sanitary urinal on the market. It is made in one piece of solid porcelain. Each stall is separate. One or

PLATE $267-E$. more may be used. Floor slab, capping and front strips may be marble or slate. The waste is 3 inch with 3 inch local vent. Plate 267 -E shows urinals flushed by foot valve placed in floor. They can be flushed by automatic tank or as desired. The cost is but little higher than the regular stall with earthenware urinal.

## DALTON=INGERSOLL COMPANY

Established 1847

Manufacturers of Sanitary Specialties and Plumbers, Supplies 169 TO 175 HIGH STREET, BOSTON, MASSACHUSETTS


## The Duplex I Beam Hanger

MADE OUT OF MALLEABLE IRON

Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E , Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

THE DUPLEX HANGER CO.
CLEVELAND, 0HIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.

Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.

Philadelphia \& Boston Face Brick Co. P.O. Box 8929.

Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted. It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDAGE WORKS, BOSTON.




Geo. W. Maher, Architect, Chicago.

## Folsom New Model

 Snow Guard.
Specified by leading architects to hold the snow on all pitch roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.
Faneuil Hall, Old South Church, King's Chapel,
Boston,

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## Nise <br> Derter 'Kbrothers' Englísh Fbíngle Ftaíns

## ON ALL SHINGLED SURFACES

interior stains a specialty
Send for sample boards and color plates to
Werter $\sin$ otbers, $103=105=107$ Jbroad $\mathfrak{F t r e e t}$, JBoston, (ISass.


Every three feet of

## The best SASH CORD Made

IS NOW MARKED

SILVER LAKE "A"
Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish

 Shipoleum for Standing Finish.White Enamelite $\underset{\substack{\text { Anterios. }}}{\mathrm{An} \text { El Paint for Colonial }}$
Send for our "Suggestions", on Wood Finishing and our booklet,
"'The Treatment of Floors." You will find them of service.
CHICAGO VARNISH CO. Establishd ris5.
CHICAGO.
NEW YORK. BOSTON.

## The Architectural Reprint

published at 1424 New york avenue, washington, d.c.

## - -

A periodical publication which reprints themostrare and famous books on architecture and the allied arts Until September first we offer a special Supplement to all yearly subscribers containing reprints of all the Compositions in Volumes I. and II. of the

## Cours D' Architecture

By 7. F. BLONDEL, Published at Paris in 1771; one of the rarest and most famous books on Architecture ever published. Fifteen plates and title page. The first volume of the reprint will contain, in addition to a collection of miscellaneous plates from Blondel, Ludwig Hoffman Palladio, Epoque Louis XVI., etc., complete reprints of the following books: -

GELIS-DIDOT ET LAMBERT.
Hotels and Maisons de Paris
Renaissance Architecture and Ornament in Spain PRENTICE.
Portfolios including title pages FREE. ioo plates $\mathrm{II} 1 / 2$ by $131 / 2$ inches in each volume of the Reprint.

Subscription Price $\mathbf{\$ 2 . 5 0}$ per annum three months' trial subscription 50 Cents

## ARCHITECTURAL STUDENTS

should inform themselves about our NEW EDITION of
VI G N O L A
The Five Orders of Architecture From the French of PIERRE ESQUIÉ french government architect

THIS new edition is the latest, most complete and most authoritative work upon the Orders and Elements of Architecture, and is now specified for use in the Ecole des Beaux-Arts, Paris.
The old plates have been entirely redrawn, new ones added to include the Greek Orders, and the explanations of the plates translated into clear English, with many notes.
The book contains 78 plates, foxi2 inches; mounted on cloth guards, bound in cloth

Bates \& Guild Company, Pubs. 42 Chauncy St., Boston, Mass.

Thenllewldea


SEND FOR OUR CATALOGUE OF FLY SCREENS
Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.


MADE OF STEEL GALVANIZED, $\frac{1}{16}^{\prime \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY

WHITE TERRA COTTA
of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renaissance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements
WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

## RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


## A New Era in

## Screens \& Awnings

Just think this over!
Do you want Solid Comfort, No Flies, No Sun, Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Screen and Awning.
Send for Catalosue.
PHENIX MFG. CO.
028 Centre St.,
MILWAUKEE, WIS.


## PARQUET

We have representatives and stecks of floors in the leading cities. Write for Prices and Book of Designs. ET THE INTEHIOR HRRDWOOD CO., Mantrs. INDIANAPOLIS, IND.

PLIIN OR ORNMIENTRL Thick or Thin

## Modern

Lights for
Modern
Stores
I. P. FRINK 551 Pearl St. New York

OUR SPECIAL PATENT REFLBCTORS FOR SHOW WINDOWS, OUR SECTIONAL GLASS CLUSTER LIGHTS FOR INTERIORS, AND SPECIAL REFLECTORS FOR SHOW, WALL AND SIDEWALK CASES MEET THE PROBLEM OF STORE LIGHTING MORE PERFECTLY THAN ANY OTHER LINE OF LIGHTING FIXTURES MADE. CORRESPONDENCE INVITED

## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can have water every day in the year, and your cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


Rider-Ericsson Engine Co.


THE ARCHITECTURE OF SICILY I-GRECO-ROMAN PERIOD

ITALIAN RENAISSANCE DOORWAYS
ELIZABETHAN INTERIORS: "PLAS MAWE"
BATES AND GUILD COMPANY bOSTON MASS.

## THE ELEMENTS OF ARCHITECTURE

By the Curious Pensil of the Ever Memorable

SIR HENRY WOTTON, Knight<br>(LONDON 165I)<br>(u2)

A COMPLETE REPRODUCTION OF THIS FAMOUS WORK, PRINTED ON IMPORTED HAND-MADE ANTIQUE PAPER ध HANDSOMELY BOUND: SENT POSTPAID, ON RECEIPT OF PRICE: $\$ I .50$ A COPY

THE F. A. BASSETTE COMPANY \& Springfield, Mass.

```
men
```

TFROM REGINALD BLOMFIELD'S HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND: "Bacon's Essay is too well known to need description. Scarcely inferior in literary charm, and far more valuable in its sound sense and practical insight into the subject, is Tbe Elements of Arcbitecture, collected by Henry Wotton, Knight, from the best authors and examples.'

## STRATHMORE Artist Papers

## CARRIEDIN STOCK BY THE FOLLOWING


C. P. Lesh Paper Co. . . Indianapolis, Ind. Deuther \& Beek : Buffalo, N.Y. A. B. Clossor, Jr.. \& Co. : : Cincinnati, O. Sanborn, Vail \& Co. . . : San Francisco
H. P. Whitmore Omaha, Neb.
Hirshberg-Hollander \& Co.
E. Meininger

Barnard, Potter \& Vail Baltimore, Md.
Barnard, Potter \& Vail : Denver, Colo.
F. F. Hansell \& Bro. : Rochester, N.Y.
A. F. Hansell \& Bro.

Architects \& Engineers Supply Co., Kansas City, Mo.
Wm. E. Stieren
$\underset{\text { Elliott Electric Blue Print }}{\text { Clicer }}$. $\mathrm{Ar}+$ Metropole

ASK YOUR ART DEALER FOR STRATHMORE Mittineague Paper Co., Mittineague, Mass.

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHERS' ANNOUNCEMENTS

SUBSCRIPTIONS: Subscription price, $\$$ r.oo a year, in advance, postpaid to any address in the United States or Canada: to foreign countries in the Postal Union, $\$ 1.50$. Single copies, ro cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the isth of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for $1897,1898,1899$ and $1900, \$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for $1896, \$ 3.50$ : for $1897,1898,1899$ and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1goo, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## Publishers' Notes.

## MASTERS IN ART.

The October issue of Masters in Art will illustrate the works of Andrea del Sarto, the Florentine, with ten examples of his works. The November issue will deal with the English portrait and landscape painter, Gainsborough, and the Second Volume of the magazine will close with the December number on Correggio.

## " Masters in Art" for 1902.

The Prospectus for Masters in Art for 1902 testifies that the third volume will be even more attractive than its predecessors. Early in the year two consecutive issues will show the greatest works of art which the world has yet produced, namely, the masterpieces of the Greek sculptors of the best period.

Among other masters whose achievements will be considered in the Volume may be mentioned Tintoretto, that audacious and intrepid draughtsman, majestic colorist and prodigious executant, who is as absolute a type of the born painter as any in the history of art, and one of the greatest of the Venetians or, indeed, of any school.

To the student of art history, Giotto will be a most interesting figure. Lorenzo Ghiberti, the oldest historian of the Florentine Renaissance, wrote, "In a village of Etruria painting took her rise," meaning thereby to refer to the birth of Giotto; and his is one of the few names which, having become great while its bearer lived, has
sustained no loss of greatness through subsequent generations.

The art of landscape painting will be represented in the Volume by the best nown name in English art - Turner. Mr. Ruskin wrote his monumental "Modern Painters" to prove him greatest landscapist the world has seen.

Animal painting will be represented by Paul Potter, the Dutchman, whose celebrated "Young Bull" is well known, but whose other pictures have not yet received the attention they deserve.
In this Volume, too, a number of Masters in Art will for the first time be devoted to drawings, the exquisite sketches of Hans Holbein being chosen for this purpose.

Among the other painters to be represented may be mentioned Perugino, whose lovely figures show us "Renaissance bodies inhabited by souls animated by the religious fervor of the middle ages "; Luini, the follower of Leonardo da Vinci, who stands so near his master in the fascination of his work; and Hogarth, the moralist and satirist of the English school, who is, on the whole, its most original exponent.

The remaining painters to be considered in the igoz volume will be announced later.

## New England Colonial Architecture.

The many architects who have been disappointed at not being able to secure a copy of Corner and Soderholtz's "Domestic Colonial Architecture of New England," which has been out of print for some time, will be glad to learn that the Bates \& Guild Company are shortly to publish a new edition of this standard work. The plates will be printed from the original negatives, and the book presented in improved form. Advance orders now received. Portfolio, \$12.00 Bound, \$14.00.

ARE YOU EVER CALLED UPON TO DESIGN
A DECORATIVE DETAIL OF ANY SORT IN THE FRENCH OR ITALIAN RENAISSANCE STYLES? IF SO, YOU NEED TO OWN

## Details of Decorative Sculpture

French Renaissance Italian Renaissance

THEY are working "tools of the trade," designed and made expressly to save you laborious hunts through old books and the fumbling over of a confused and dusty heap of photographs and loose prints from the architectural magazines. Each book contains 50 photographic plates, so carefully chosen for usefulness, that it is twenty to one that you will find among them in half a minute, not "something that will do," but the exact detail you have in mind. The plates are large enough to show all lines clearly, and small enough to be conveniently handled; loose so that you can use them separately on the drawing table, enclosed in a portfolio and slide box so that they are easily kept together and shelved. They cost one-tenth what corresponding photographs would cost; and so many architects have found them valuable that each set is now in its third edition.

French Renaissance Details, $\$ 2.50$ Postpaid Italian Renaissance Details, $\mathbf{\$ 2 . 5 0}$ Postpaid

EACH SET IS SOLD SEPARATELY, AND CONTAINS FIFTY PLATES, REPRODUCED BY THE MEZZOTYPE PROCESS, $7 \times 9$ INCHES IN SIZE, ENCLOSED IN A PORTFOLIO AND SLIDE BOX.

## ARCHITECTURALSTUDENTS

should inform themselves about our NEW EDITION of

## V I G N O L A

The Five Orders of Architecture From the French of PIERRE ESQUIÉ french government architect

THIS new edition is the latest, most complete and most authoritative work upon the Orders and Elements of Architecture, and is now specified for use in the École des Beaux-Arts, Paris.
The old plates have been entirely redrawn, new ones added to include the Greek Orders, and the explanations of the plates translated into clear English, with many notes.
The book contains 78 plates, $10 \times 12$ inches; mounted on cloth guards, bound in cloth.


Bates \& Guild Company, Pubs. 42 Chauncy St., Boston, Mass.

## INTERIOR

 DECORATIONS$\mathbf{S}^{\text {PECIAL Stuffs and Wall Papers. Fine }}$ Casts and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms.

# MISS WOODVILLE <br> MRS. H. MARKOE 

110 S. 17th STREET, PHILADELPHIA

Correspondents in London and New York

PERSPECTIVES RENDERED in Pen-and-Ink and Water Color.
W ALTER M. CAMPBELL 8 Beacon Street, Boston, Mass.

## Thurlue Pencil Slietches

## By CHARLES HERBERT WOODBURY

Facsimile reproductions, full size of the originals, printed on cream tinted paper, ${ }_{11} \times 14$ inches, and suitable for framing.

The Boston Transcript says:-
No one equals Mr. Woodbury in his knowledge of how to use with best effect the soft lead-pencil; his sketches are full of color, of tone, of light; they are thoroughly artistic, and nothing that we have seen lately approaches them for quality.

Set of Twelve, sent flat . . \$3.00

BATES \& GUILD CO. 42 CHAUNCY ST., BOSTON.

BOOKSON
Colonial Furniture
The Furniture of
Our Forefathers
Price, $\$ 16.00$

English Household
F U R N I T U R E Price, \$10.00

Illustrated Circulars on Request Bates $\mathscr{\odot}$ Guild Company. B O S TON, MASS

## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford of Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf, Jesse W. Starr, C. W. Trainer Manufacturing Company and C. W. Trainer, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereo to be made perpetual, and also demands an accounting and damages.

088All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

## KEASBEY \& MATTISON CO.

 AMBLER, PENNA.NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA

BOSTON,
NEW YORK NEW YORK, BALTIMORE,
RICHMOND,
NORFOLK,
CHARLESTON,
S. C. NIGHTINGALE \& CHILDS ROBERT A. KEASBEY WACOVERING CO.
W. M. BIRD \& CO.

Agents
ST. LOUIS, OMAHA, KANSAS CITY, CHICAGO,
DETROIT,
SAN FRANCISCO, SEATTLE,

Ey CLARENCE A. MARTIN<br>Assistant Professor of Architecture at Cornell University

A collection of thirty-three plates, showing working drawings for the construction of windows, doors, cornices, stairs, interior trim, etc. Each plate has the descriptive matter carefully lettered upon it. The size of the prints is $7 \times 9$ inches. Prices on paper $\operatorname{toxi} 21 / 2$ inches, and substantially bound in cloth.

## Price, Postpaid, $\$ 2.00$

Bates © Guild Co., 42 Chauncy Street, Boston, Mass.



OF ARCHITECTURAL ILLUSTRATION

# THE ARCHITECTURE OF SICILY 

I - GRECO-ROMAN PERIOD *

"TALY without Sicily leaves no image in the soul-Sicily is the key to all," wrote Goethe ; and his dictum has been echoed by every traveler who has visited this enchanted island. It has been called the "architectural museum of Europe," and, indeed, in no other part of the world are to be found within an equal space so many well preserved specimens of the work of the master builders of ancient and mediæval days. In the midst of settings of incomparable beauty we find more and better preserved examples of Greek architecture, touched here and there by the altering hand of the Roman, in Sicily than in ancient Greece itself. We find, too, ruins of Byzantine architecture, the mosques and towers of the Saracens, and finally the wonderful edifices which, under the influence of their Oriental predecessors, were wrought by the Normans.
"When the Mediterranean was the only ocean whose expanse had been explored by civilized people," writes Paton in his recent book on Sicily, "the lands washed by its waves composed the whole of the known world of antiquity, and Sicily, the ancient Trinacria, was the very centre of civilization. The nations that have dwelt around the

[^8]Mediterranean waged almost incessant war for the possession of the island. For more than fifteen hundred years Sicily was the battlefield upon which men of European blood contended with men of Asiatic blood for the dominion of the world. In Sicily, no less than in old Greece, was waged the war of civilization against barbarism, of philosophy against mysticism, of science against astrology; and it is no exaggeration to say that upon the result of battles fought in Sicily, or on the sea near her coast, have oftentimes hung the fate and future history of Europe.
"In Sicily were fought the many battles of the Punic wars. Pyrrhus of Epirus, and after him Belisarius, played their short but brilliant parts on Sicilian soil. In Sicily the Moslems temporarily established the dominion of the Khalifs of Africa. In Sicily the Normans won for themselves a kingdom and established a government which, for a time, was the most liberal, the most powerful, the richest and most magnificent of the governments of Europe.
" The glory of the Normans soon departed, and thereafter Sicily became the football of popes, emperors and kings, all ruling despotically, unjustly and unwisely. At last the Bourbons set up their despotism — blackest of all curses that have fallen upon Sicily, - and not
until i 860 did Garibaldi break the yoke of bondage, and for the first time in many centuries leave the Sicilians free to work out their social and political salvation."

All the nations that have dwelt in Sicily have left relics and monuments of their occupancy; but of them all, two - the Greeks and the Normans - have most distinctly and most enduringly commemorated their conquest of the island. It is our purpose in this article to illustrate and briefly to describe the principal Greek and Roman monuments in Sicily, and in a future paper to consider the Norman architecture.

As a nation the Sicilians have always displayed marked abilities. It was here that Greek comedy attained its earliest development, here that bucolic poetry originated; and nothing can be more indicative of the extent of Sicilian culture than the story of the Syracusans who once set at liberty several Athenian prisoners because they knew how to recite the verses of Euripides. It is not strange, therefore, to find that the descendants of the Ionian and Doric Greeks, who, as colonists from the mother country, settled on the coasts of Sicily, achieved an architectural development which, contemporaneous with the best period of Greek achievement, rivalled it in splendor. As we have said, there are not only more Greek ruins in the Island of Sicily than are to be found in the Peloponnesus or all Greece beside, but the ruined temples of Girgenti, Segesta and Selinus were nowhere surpassed, and the theatres of Syracuse, Taormina and Segesta, although modified by Roman additions, give us the best idea of what the Greek theatre was in plan and arrangement; while the Epipolæ of Syracuse is the best extant example of Greek fortification.

About midway in the long sweep of the southern coast of Sicily is set Girgenti, called anciently Acragas by the Greeks and Agrigentum by the Romans, and which Pindar declared "the most beautiful city of mortals." Did its
splendid array of temples stand in impressive desolation, as do the ruins at Selinus and Pæstum, they would still be wonderful in their beauty; but they are set in the midst of scenery than which nothing can be lovelier, and the sandstone of which they were constructed shows purple and pink and violet with blue-black shadows in the mellow sunlight, and presents delightful contrasts of color to the variegated greenery by which it is partly overgrown.

There were once seven temples at Girgenti, but only four of them have now an architectural interest, and indeed the greatest of all, the Temple of Zeus, is today only a gigantic array of scattered stones, barely its skeleton remaining, since a great part of the modern Molo of Girgenti has been constructed from its blocks. It is, however, said to have been 363 feet in length by 182 in breadth, and, as Diodorus tells us, was izo feet in height, so that it must have been the second largest temple ever erected by the Greeks, surpassed only by that to Diana at Ephesus. We may gain some notion of its size from the fact that the flutings of its columns are so broad that a large man standing with his back in one of the channels barely fills the space. As the temple of Apollo at Selinus, another complete ruin, was the third largest Greek temple of the world, two of the temples of Sicily were greater in dimensions, therefore, than any of the temples of ancient Greece.

Among the standing temples the erroneously named temple of Juno Lacinia was erected between 480 and 500 B.C. It stands upon a rocky platform, and is approached by a flight of steps leading to the eastern portico. It is (to be technical) a "peripteros-hexastylos," having six fluted columns in front, six at the rear and twenty-two at the sides, and is one of the best specimens of the noblest period of Doric architecture.
To the west of this stands the Temple of Concord. During the middle ages this temple was converted into a Christian

temple of juno lacinia
GIRGENTI, SICILY
church, the spaces between the columns being walled up and the cella roofed with wooden beams; but, thanks to these ad-
ditions, which have now been removed, the temple is one of the best preserved Doric structures in Sicily or elsewhere.




TEMPLE OF HERCULES
GIRGENTI, SICILY
West of the Temple of Concord lies a vast confusion of enormous blocks, in the midst of which stands a solitary column to mark the site of a temple to Hercules, which must originally have been one of the larger Greek temples, and for which Zeuxis is said to have painted his famous picture of Alcmene, the mother of Hercules.

Still further to the westward stands the most picturesque of all these ruins four columns of the Temple of Castor and Pollux (see frontispiece), surrounded by old olive trees. This temple originally had six columns at each end and thirteen at the sides. They were all thrown down by earthquakes, however, and lay upon the plain for many centuries, until recently the four columns now standing were re-erected by Professor Cavallari, and an angle of the cornice and entablature placed upon them. The columns, like other parts of this temple, bear evidences that they were once painted with red, blue and black, giving additional proof, if any be needed, that the Greeks habitually colored parts, at least, of the exteriors of their temples. So charming a feature in the lovely
scene does this re-erected Temple of Castor and Pollux make, that it seems a pity to have to add that portions of two distinct structures have been used in its restoration.

Between the Temple of Hercules and the ruins of the Temple of Zeus stands the so-called Tomb of Theron, which, like the Temple of Castor and Poilux, is of the later Greek period and shows Roman influence.

At Selinus exist the ruins of what must once have been one of the grandest temple groups in Europe; unfortunately but shapeless ruins now and of interest solely to the historian and archæologist. One hundred feet above the sea, upon a barren, wind-swept waste, lie in a vast confusion the broken columns and overthrown walls of three Doric Temples. Only on close examination is the colossal bulk of the individual fragments appreciated, and then only does one realize what must have been the stupendous size of these three temples. The largest, dedicated to Apollo, measured some 371 feet in length by 177 in width; that dedicated to an unknown divinity was 202 feet in length by 79 feet in width, and a third, also dedicated to an unknown god, was


TOMB OF THERON
GIRGENTI, SICILY


33 feet long by 83 feet broad. Many of the columns of this last temple are exquisitely fluted and some remarkably carved metopes have been discovered among the fragments.

Set in a gently sloping valley upon a rocky base which juts from a mountain, the Temple of Segesta - the best preserved relic of Greek architecture in Sicily - seems to be placed on the one


conceivable spot most fitting for it. As De Maupassant says, "it animates the immensity of the landscape, and makes it divinely beautiful." In color the stone is golden brown, and as the sunlight falls upon it glows like a carving of ruddy gold placed against the green velvet of the hill slopes. It was unfinished, for the columns are unfluted and the steps of the basement unhewn, nor was the cella begun; but in plan, detail and decoration, it is an almost perfect specimen of the work of the Doric school at its best, and owes its charm to the excellence of its proportions, so that notwithstanding its great size and the thickness of its columns it has grace, elegance and apparent lightness, and in this desolate spot surrounded by lofty mountains, its majestic outlines are profoundly impressive.

As the Greeks placed their temples at the exact point in the landscape where their beauties should most impress the beholder, they so situated their theatres that the view from them as seen by the spectator should be most exquisite. Indeed, this art of selecting sites is another of those subtle Greek refinements which
we barbarians are one after another stumbling upon. The Theatre of Segesta is an example in point. It is situated on a slope toward the sea, and forms the central point of a larger amphitheatre of mountains. Behind this background rises a still higher ring of peaks, and the spectator gazes across the stage upon a view of the sea, framed in between green hills. The diameter of the theatre, which is hewn out of the solid rock, is 205 feet. In front of the proscenium the remains of two figures of satyrs, belonging to the Roman period, are still visible. The seats were divided into seven sections by aisles. While not as large as the theatres at Taormina or Syracuse, the Theatre of Segesta is in some respects a finer structure than either, and in the grandeur of its situation is surpassed only by that at Taormina.
"Had the traveler to Sicily," writes Guy de Maupassant, " but one day to spend in that enchanted island and should ask what he were best to see, I should answer, without hesitation, 'Taormina!' There is nothing there but a ruined theatre, to be sure, but the thea-


tre is so beautiful even in its desolation and is so exquisitely enframed by the landscape, that all which can delight eyes, mind and imagination is combined."

The theatre was excavated, twentythree centuries ago, in the lap of a mountain which projects boldly toward the ocean. The great semi-circular auditorium of step-like seats opens toward the south upon a marvellous panorama of the Ionian sea, the east coast of Sicily and the pyramid of Etna. The seats, once faced with marble, rise in rough, over-grown tiers, which could formerly accommodate spectators to the number of thirty-five thousand. The entire theatre is 336 feet in diameter, and the orchestra is $\mathrm{I}_{3} 0$ feet in width. The Romans enlarged the Greek structure, but enlarged it clumsily, using brick for the most part instead of marble, and it is easy to discriminate their workmanship from that of the Greeks. The Romans also enclosed the auditorium at the rear by two great galleries, portions of which are still standing, and which were adorned with columns and niches for
statues; and these galleries, where the seats of the nobility were situated, were accessible only by stairs from the outside. The tiers of seats slope toward the orchestra, and in front of this rises the stage, the principal feature of interest in the building because of its excellent preservation, for with the exception of that of the theatre at Pamphylia it is the only Greek stage which retains its original form, and, at least as far as the ground plan is concerned, perfectly exhibits all the details of its construction. One central and two lateral doors gave entrance to the stage from the encircling corridor, and dressing rooms of great size were erected on either side. The acoustic properties of the theatre, even in its present state, are such that every word spoken on the stage is distinctly audible at the furthest extremity of the auditorium. We may see from the ruins that the background of the stage presented the appearance of a great portico, in the wall of which were niches for the statues of the gods and heroes, and behind this again, and to the eye of the spectator a part of the

scene, was a wonderful view of the shore, scattered with great rocks and strewn with golden sand, stretching to either hand to the horizon; beyond the azure of the sea, and, dominating all in the distance, the snow-crowned, smokewreathed mass of Etna.

Soluntum, once the site of a great Phœnician metropolis, is now desolate. Unlike most Phœnician cities, it was not set on the shore itself, but on a seafronting hill. In spite of its original importance it was, for some unknown reason, deserted by its Phœnician founders, and the only remains now found there date from Roman times, though a recently unearthed statuette of Isis shows that the gods of Egypt as well as those of Rome had here replaced the more ancient deities, Baal and Astoreth. The remains of the Roman town which was erected upon the older Phœnician foundation have not yet been thoroughly excavated, but the city limits, some of the ancient paved streets, which run at right angles like those of our new western towns, and the foundations of some stately dwellings have been un-
earthed. The most interesting feature of the place, however, at least to the architect, is a part of the colonnade of a Roman house which has been recently re-erected by Professor Cavallari and which is called the "Gymnasium."

Syracuse was one of the greatest cities of ancient times, famous for its wise men and for its poets; famous for its wine, famous for its papyrus and famous for possessing one of the most beautiful statues in the world - the "Venus of Syracuse." Five cities were once included within its great walls, and its recorded history is as interesting as is the history of Athens. It was the champion of Europe against Africa, as Athens was the champion of Europe against Asia, and is said to have been populated in Grecian times by from five hundred thousand to one million inhabitants. Against its walls the power of Athens at its height was hurled and shattered, never again to recover its ancient prestige. It was once the seat of the Byzantine empire, and we cannot hear its name without recalling Dionysius, Timoleon, Archimedes, Marcellus


[^9]SOLUNTUM, SICILY

and St. Paul; and Cicero wrote of it: "Syracuse is the greatest of the Greek cities and the most beautiful."

When one first beholds the commonplace modern town, where are to be seen no range of temples, no towers or spires, no relics of Greek or Roman, Saracen or Norman, one is astounded that this should be the site of the once mighty Syracuse. The ancient remains - what there are of them-lie, however, outside of the modern town, on a rocky plateau, but Syracuse was unfortunately built of a soft, friable and readily disintegrated stone, of which the great quarries hollow the plain, and in the course of years the rain and sunshine, heat and cold and the sorocco (that "petulant soft wind of the south ") have corroded and crumbled to fine powder the once extolled crown of its towers and temples, and scattered them into the sea and far and wide upon the plain.

The most interesting ruins that remain are now the fortress-like Epipolæ, which occupies the west angle of the plateau and which the Athenians seized and altered during their siege of the city, the Roman Amphitheatre and the
enormous so-called "Greek Theatre." The Amphitheatre, dating from the time of Augustus, is 231 feet long and 132 feet wide. Many of the seats still bear carved upon them the names of their original proprietors.

Beyond this lies the great Greek Theatre, the largest structure of its kind after those of Miletus and Megalopolis. It was erected in the fifth century B.C., and is hewn out of the rock in nearly semi-circular form, measuring about 495 feet in diameter. Traces of forty-six tiers of seats are still visible, of which the eleven lower rows were faced with marble. These seats were divided into nine divisions intersected by aisles, and each section is inscribed with its name.

In 210 B.C. the Greek dominion in Sicily came finally to a close, and the island was proclaimed an imperial province. In Roman hands Sicily suffered architecturally, for though her new masters did construct a few amphitheatres, temples and aqueducts, in the main they contented themselves by altering the existing Greek structures, and always altering them for the worse, while the Roman governors, especially
the notorious Gaius Verres, whose name has survived through Cicero's splendid arraignment of him, robbed her by the shipload of countless treasures of art. Indeed, toward the later years of the Roman supremacy, culture practically ceased in Sicily, for in the civil wars between the factions she was the alternate spoil of one and another party.

But still darker days were in store for her. The northern barbarians who had overthrown the Empire now made her their prey; and Genseric, Odoacer and the Ostragoths became successively her masters.

To their sway succeeded that of the Empire of the East, which was initiated under Belisarius. Indeed, in 663 the seat of the Eastern empire itself was transferred to Syracuse, but apparently there was no revival of the arts, and we find but one small Byzantine church remaining to mark the architecture of this period.

In 827 came the Saracens, and four years later they had wrested the control of Sicily from the Eastern dominion and made Palermo the Arab capital of the island, over which they gradually extended their dominion. Under their
rule intellectual life once more sprung up, and architecture was enriched with new forms of construction, while literature, commerce and agriculture flourished greatly. The Arab dominion was, however, unstable, owing to factional feuds among the chieftains; and when, at the invitation of one of them, Robert and Roger de Hauteville of Normandy invaded the island about the middle of the eleventh century, they laid the foundations of a Norman rule which was to endure for nearly a hundred years.

The Norman period was, after that of the Greeks, the most brilliant in the island's history; but although the Byzantine and Arabian rules had not been fruitful in architecture, they had sown seeds which, though dormant, were still fertile; for when the Normans gave the impetus to renewed creation there grew up a Sicilian architecture in which something of the Byzantine and the Arabian tinctured the Norman, producing a mingled style which resulted in some of the most fascinating and beautiful buildings in the world. These edifices we shall attempt to illustrate and describe in an ensuing paper.
C. De B. Garvin.













# ELIZABETHAN INTERIORS OF "PLAS MAWE," 

 CONWAY, NORTH WALES.IN a by-street of the little town of Conway, Carnarvonshire, North Wales, stands, amid its modern neighbors, a half-timber house which bears on its front the date of its construction, 1584 . This is "Plas Mawe," which in Welsh signifies "Great Mansion." It was built by the celebrated Robert Gwynne of Gwydir, and owes its unusual preservation to the fact that Queen Elizabeth, accompanied by her one-time favorite, Robert Dudley, Earl of Leicester, abode in it during a royal sojourn in North Wales.

The room in which the Virgin Queen slept and that which was used as her reception or ante-room, were, according to the traditions of the house, especially decorated for her reception, and the Queen's initials, "E. R.", may be seen
in raised letters over the mantlepiece and upon the walls, while those of her host, Robert Gwynne or Wynne (for he apparently used both names indifferently after the inexact Elizabethan fashion, much as Shakspere is said to have signed his name with two spellings in the same document), are several times repeated.

As far as the ceiling and wall decorations are concerned these rooms have been carefully preserved in the exact state that they were in at the time of the Queen's sojourn, except that the plaster enrichments of both were probably painted in brilliant colors, and not, as now, covered with a preservative coat of whitewash. Such unaltered specimens of Elizabethan interiors as these are now become deplorably rare. S.F.n.




## The "Neptune" Porcelain Urinal

 $T$ HIS is the most sanitary urinal on the market. It is made in one piece of solid porcelain. Each stall is separate. One or more may be used. Floor

PLATE 267 -E. slab, capping and front strips may be marble or slate. The waste is 3 inch with 3 inch local vent. Plate 267 -E shows urinals flushed by foot valve placed in floor. They can be flushed by automatic tank or as desired. The cost is but little higher than the regular stall with earthenware urinal.


## The Duplex I Beam Hanger

MADE OUT OF MALLEABLE IRON

Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E , Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER CO.

CLEVELAND, 0HIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.
Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ <br> and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.

Philadelphia \& Boston Face Brick Co.
P.O. Box 8929.

Boston, Mass.



Geo. W. Maher, Architect, Chicago.

THREE HISTORIC BUILDINGS.
Faneuil Hall, Old South Church, King's Chapel,

Boston,
Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## ひse <br> Derter JBrothers' English whingle $\mathfrak{w t a i n s}$

ON ALL SHINGLED SURFACES interior stains a specialty

Send for sample boards and color plates to
Texter $\mathfrak{J B r o t b e r s}$,
103=105=107 Jkroad $\mathfrak{w t r e e t}$, Jboston, ITSasg.


## Every three feet of

The best SASH CORD Made

IS NOW MARKED

## SILVER LAKE "A"

Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish

 Shipoleum for Standing Finish.White Enamelite An Remall Paint or Colomial Interiors.

Send for our "Suggestions", on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

# The Architectural Reprint 


————
A periodical publication which reprints themost rare and famous books on architecture and the allied arts
Until September first we offer a special Supplement to all yearly subscribers containing reprints of all the Compositions in Volumes I. and II. of the

## Cours D' Architecture

By f. F. BLONDEL, Published at Paris in 1771; one of the rarest and most famous books on Architecture ever published. Fifteen plates and title page. The first volume of the reprint will contain, in addition to a collection of miscellaneous plates from Blondel, Ludwig Hoffman, Palladio, Epoque Louis XVI., etc., complete reprints of the following books: -

GELIS-DIDOT ET LAMBERT.
Hotels and Maisons de Paris
Renaissance Architecture and Ornamentin Spain

PRENTICE.
Portfolios including title pages FREE. 100 plates $111 / 2$ by $13^{1 / 2}$ inches in each volume of the Reprint.

-     -         - 

Subscription Price $\mathbf{\$ 2} \mathbf{5 0}$ per annum three months' trial subscription 50 Cents


MEMORIAL TABLETS bronze and brass
GRILLE WORK bronze, brass and iron
MOSAICS
MARBLE AND TILE
Murdock Parlor Grate Co. 156 BOYLSTON ST., BOSTON Works: Middleboro, Mass.


## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can laave water every day in the year, and your cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


## Rider-Ericsson Engine Co.



THE ARCHITECTURE OF SICILY
11-NORMAN PERIOD
FRANCIS I. HUNTING LODGE: PARIS

ENGLISH FAN VAULTS

## BATES AND GUILD COMPANY BOSTON MASS.

## MASTERS IN ART FOR 1902

MASTERS IN ART for 1902 will follow the same plan and will contain all the features included in the previous issues; and the Publishers believe that the Third Volume will surpass its predecessors in interest and attractiveness.
Early in the year two consecutive numbers will be devoted to the greatest works of art the world has yet produced, namely, the masterpieces of Greek sculpture. The paintings of Tintoretto, the intrepid draughtsman and majestic colorist of the Venetian school; of Luini, who in the fascination of his work stands so close to Leonardo da Vinci; and of Perugino, "whose lovely Renaissance figures are animated by souls of mediæval fervor," ensure issues of the greatest beauty. Giotto, "who first gave life to art by making his works truly reflect nature," will be the most interesting figure to the student of art history Hogarth, moralist and satirist, will stand as the most original exponent of the English school. Paul Potter, whose pictures deserve to be more widely known, will represent-animal painting; and Turner, whom Mr. Ruskin wrote "Modern Painters" to prove the world's greatest landscapist, will represent landscape. In this Volume a number will, for the first time, be devoted to drawings, and the exquisite sketches of Hans Holbein have been chosen for this purpose. The remaining painters to be treated duting the year will be announced later.

The chosen opinions of the best critics will, in conjunction with a life, give as before, a complete estimate of the genius of each master treated, and no pains will be spared to make every reproduction in the magazine of the highest artistic excellence.

## Bates \& Guild Company, 42 Chauncy St., Boston

## STRATHMORE DRAWING BOARD

The following letter is one of the many proofs that our papers are the best:
"MITTINEAGUE PAPER CO.
Dear Sirs: I have just received the 25 sheets. It is the best paper I have seen and I wish you would send me 150 more sheets.

Sincerely yours,
C. D. GIBSON."

WRITE FOR SAMPLE BOOK
Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

PUBLISHED MONTHLY BY
BATES \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHER'S ANNOUNCEMENTS

SUBSCRIPTIONS : Subscription price, $\$ \mathrm{x} .00$ a year, in advance, postpaid to any address in the United States or Canada; to foreign countries in the Postal Union, $\$ 1.50$. Single copies, to cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January.
REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mail usually comes safely, but should be securely wrapped, and is at the risk of the sender.
CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the isth of each month. Subscribers who do not receive their copies before the end of the month will please notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price.
BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for 1897,1898 , 1899 and 1900, $\$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for $1896, \$ 3.50$; for 1897,1898 , 1899 and $1900, \$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1805 and 1896 and those for January, May and November, I897, January 1898, January and May, 1899, and September 1goo, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.

## "American Gardens"

IN no department of the Fine Arts has the recent rapid advancement of America been so exemplified as in the newly-awakened interest in gardens. It is not an over-statement to say that ten years ago there were not more than twenty private gardens worthy of the name in this country, and these (most of them survivals from the Colonial period) were yearly diminishing in number. Today there are at least one hundred American gardens worthy of comparison with the best Italian and English specimens, in spite of the differences in age.

English and Italian gardens have been well illustrated in numerous publications, but American architects and garden owners have found with disappointment that the suggestions these foreign examples offered for garden design in this country were limited, that many of their greatest beauties were dependent upon the use of alien plants and trees, and on surroundings which could not be here reproduced. It became evident that the American garden must be an indigenous product, and to the solution of the problem such architects as the Olmsted Brothers, Mr. Charles A. Platt, Messrs. Carrere \& Hastings, to the solution of the problem such architects as the Olmsted Brothers, Mr. Charles A. Platt, Messrs. Carrere \& Hastings,
Mr. Wilson Eyre, Jr., Messrs. Keen \& Mead, Messrs. Parsons \& Pentecost, Mr. Daniel W. Langton, Miss Beatrix Jones, Mr. A. J. Manning, Messrs. Little \& Browne, Messrs. McKim, Mead \& White, Mr. Nathan Barrett and many others, as well as scores of non-professional garden lovers, have set themselves, with results that will be a delightful astonishment to those who do not know what has been accomplished. Best of all, these gardens show what can be achieved in this country, and how existing conditions have been met and utilized, and will, therefore, become sources of inspiration.

With the aim of making these examples accessible to architects and to the public, the Bates \& Guild Company has had several hundred photographs made which beautifully illustrate in plan and detail all the most excellent examples, old and new, of American private gardens; and has now in preparation a book entitled

## "AMERICAN GARDENS"

in which the most suggestive of these photographs are to be reproduced, accompanied by a practical treatise on American garden design by Mr. Guy Lowell, architect and lecturer on landscape architecture at the Massachusetts Institute of Technology.

In form the book will be worthy of its subject. The illuminated cover design will be by Mr. Henry McCarter, and the illustrations, decorations and presswork will be excellent throughout. The book is now in press; detals of price, etc., will be announced shortly.

## The Only Real Stain When pou hear the pasasibles sory of another shingle stain that is

 "just as good as" Cabot's, we ask you to bear in mind the experience of a leading New Orleans architect, who writes as follows:-"......In fact, I had samples sent from all the prominent paint manufacturers, and made a personal test of same. I found them all, with the exception of yours, to be nothing but paint thinned out with benzine or something else. In other words, a poor quality of paint instead of stain.......Had used your goods with satisfaction years ago, but as I was receiving so many
 circulars, etc., from manufacturers claiming to have the best stain on the market, I thought I would give all a test, with the results as stated above."

## Cabot's Shingle Stains

are the original and only true shingle stains. They are reliable, economical and artistic, and architects should specify them and refuse all substitutes.

FULL INFORMATION ON REQUEST

Sam11el Cohot Sole Manufacturer, Boston, Mass.
Agents at all Central Points.

EVERY ARCHITECT SHOULD HAVE A COPY OF OUR BOOKLET, "FIRE PROOF OFFICES THAT ARE FIRE PROOF." SENT ON APPLICATION

Art Metal Construction Co.



## CHURCH BUILDING

A STUDY OF THE PRINCIPLES OF ARCHITECTURE IN THEIR RELATION TO THE CHURCH
RALPH ADAMS CRAM


## TABLEOF CONTENTS

CHAP. I. Introduction. CHAP. II. The Country Church. CHAP. III. The Village Church. CHAP. IV. The City Church. CHAP. V. The Chancel and its Fittings. CHAP. VI. Chapels, Baptistries and Sacristies. CHAP. VII. Decoration and Stained Glass. CHAP. VIII. The Altar. CHAP. IX. The Cathedral. CHAP. X. Conclusion.

132 Illustrations. 227 Pages.
Large Octavo, Cloth, Gold Lettering, Gilt Top. Price, $\$ 2.50$ net.

## BATES $\mathcal{E}$ GUILD COMPANY

42 CHAUNCY STREET, BOSTON, MASS.



OFFICE LETTERING
THE August issue of THE ARCHITECTURAL REVIEW contained the first part of an article by Mr. Frank Chouteau 1 Brown on Office Lettering. The second and concluding part will appear in the issue for November. This article is of the greatest practical value to draughtsmen, especially those who have not made a careful study of lettering. It contains twenty-six illustrations reproducing lettering by Maxfield Parrish; Walter Crane; Orson Lowell; Edward Penfield; Albert R. Ross; H. Van Buren Magonigle; J. A. Schweinfurth; Charles D. Maginnis; Claude Fayette Bragdon; A. B. LeBoutillier;
H. F. Briscoe, and the Author. Many of these illustrations were made especially for the article. H. F. Briscoe, and the Author. Many of these illustrations were made especially for the article.

We can fill only thirty orders for these two issues alone, but can fill about on $\rightarrow$ hundred subscriptions for rgor, sending all back numbers. Price of August and November numbers, $\$$ т.00. Yearly subscription, $\$ 5.00$.
BATES \& GUILD CO., Publishers, 42 Chauncy St., Boston

## ARCHITECTURAL STUDENTS

should inform themselves about our NEW EDITION of

## VI G N O L A

The Five Orders of Architecture From the French of PIERRE ESQUIÉ French government architect

THIS new edition is the latest, most complete and most authoritative work upon the Orders and Elements of Architecture, and is now specified for use in the Ecole des Beaux-Arts, Paris. The old plates have been entirely redrawn, new ones added to include the Greek Orders, and the explanations of the plates translated into clear English, with many notes.
The book contains 78 plates, Ioxi2 inches; mounted on cloth guards, bound in cloth.

Bates \& Guild Company, Pubs. 42 Chauncy St., Boston, Mass.


81 FRANKLIN STREET, BOSTON, MASS.

## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY \& MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford \& Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf, Jesse W. Starr, C. W. Trainer Manufacturing Company and C. W. Trainer, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereo to be made perpetual, and also demands an accounting and damages.

密 All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

## KEASBEY $\mathcal{G}$ MATTISON CO.

 AMBLER, PENNA.NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA
NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE

| Authorized Selling Agents |  |  |
| :---: | :---: | :---: |
| BOSTON, S. C. NIGHTINGALE \& CHILDS | ST. LOUIS, | FP. BOCLER |
| NEW YORK, ROBERT A. KEASBEY | OMAHA. <br> KANSAS CITY, | SPENCER OTIS |
| BALTIMORE, WALLACE \& GALE | CHICAGO, | WALCH \& WYETH |
| RICHMOND, SMITH-COURTNEY CO. | DETROIT, | P.CONKLING |
| W W. M. BIRD \& CO. | SEATTLE, | E SOLLA-DEUSSING CO. |

## INTERIOR =DECORATIONS

$S^{P E C I A L}$ Stuffs and Wall Papers. Fine Casts and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms.

## MISS WOODVILLE MRS. H. MARKOE

110 S. 17 th STREET, PHILADELPHIA
Correspondents in London and New York

PERSPECTIVES RENDERED in Pen-and-Ink and Water-Color WALTER M. CAMPBELL 8 beacon street, boston, mass



# THE <br> Brochure Series 

OF ARCHITECTURAL ILLUSTRA.TION

# THE ARCHITECTURE OF SICILY 

II - NORMAN PERIOD*

THE architectural history of Sicily up to the time of the Norman conquest has been briefly traced in the previous number of this magazine. It will be remembered that to the golden age of the Greek dominion succeeded the rapacious and unfruitful rule of the Romans; that the Romans were in their turn overwhelmed by the barbarians, who swarmed down from the dark North to quench what little light of artistic tradition still glimmered in the unhappy island; that the Byzantine Greeks were the next conquerors, who, though they transferred the seat of their Empire to Syracuse, did little to lift the pall of intellectual darkness; and that the reins of government were wrested from them by the Saracens. Under the Saracens, however, began a commercial and architectural revival, the prelude to the beginning of a second golden age in the arts for Sicily, which
may be said to date from the arrival of another race of conquerors, - the Normans.
During the latter part of the tenth and the first half of the eleventh century the Saracens had made themselves masters of the whole island; but their rule was feeble for the various chiefs could not agree as to its partition, and Sicily was torn by partisan feuds. Indeed, it was at the instigation of one of the Saracen chiefs, Ibn-Thimna of Syracuse by name, that the Normans first undertook the invasion of the island. The leaders of the Norman expedition were Counts Robert and Roger de Hauteville. Their first invasion took place in 1061; but its results proved inconclusive, and after an interval of ten years they returned with reinforcements. This time their armswere crowned with success. Indeed, so rapid was their conquest that by logo they

[^10]

CHURCH OF SAN GIOVANNI DEGLI EREMITI
PALERMO, SICILY
had subdued the whole island. It is unnecessary for our present purpose to enumerate the Norman dynasty. Suffice it to say that the second son of Roger de Hauteville, Count Roger II., united the Norman powers in Sicily and Italy, and was crowned king at Palermo in IIzo. His second son, William "The Bad," succeeded, who in turn was followed by his son, William II., "The Good."

When the Normans had established their dominion they found themselves masters of men of various creeds and various tongues. There was a Christian and Greek-speaking people and a Mussulman and Arabic-speaking people, constituting in various proportions the population in different parts of the island. The relationship between the two also differed. In one region the Christians were held in utter bondage, in another they were merely tributary; but everywhere the Mussulman-Saracen formed the ruling class with the Chris-tian-Greek as his subject. With the advent of the Normans the Roman Church of course regained her nominal
ascendency; but the special character of the Norman rule was, that all the various races in the island flourished, each after its own fashion, each keeping its own tongue, its own manners and its own arts, under the protection of an alien sovereign who belonged to none but who did impartial justice to all.

It will be clear, therefore, that though outward manifestations of Byzantine and Saracenic power had vanished, the Normans came into an inheritance of the culture and art of both of the most outwardly civilized nations of the time. It was hardly to be expected, therefore, that the revived arts in Sicily, the seeds of which had already been sown, and which were only waiting for a stable rule to bring them to fruition, should have shown hardly more than a tincture of Norman influence. The Normans were, too, after all, but a handful of military adventurers, who had conquered Sicily as soldiers of the Roman Church and who held her for the Church's aggrandizement, and who could have brought no great artistic influence to bear, even had their country then


REAR OF THE CATHEDRAL MONREALE
afforded any. It is evident, moreover, that they made no special effort to transfuse the conglomerate art of their subjects with Norman traditions. They were content that the Sicilians should erect for them palaces after their own
fashion, and that Roman priests should direct the building of churches, which, though suited to Romish rituals, were built as the Sicilians had been accustomed to build, and decorated as they, far better than their new masters, could decorate them.

The obvious occurred, and there arose in Sicily a new composite style, a style Saracenic in essence, Roman in form, and Greek in decoration; a style not only extremely interesting to the historical student of architecture because of the impress of political changes which it bears, but so intrinsically beautiful that there is no other in the world which sooner fires the enthusiasm of the artist. The square-domed plans of the Greek church gave way to the Roman basilica form and to arrangements adapted to the rites of the Roman Church; but the work was performed by Greek artists, and the Roman outline was filled up and decorated to suit the tastes and conciliate the feelings of the conquered Greeks or converted Moors. In the details, the fancy of these subject




CLOISTER OF THE BENEDICTINE MONASTERY
MONREALE, SICILY
races, richer and happier than that of their sturdy rulers, was allowed even fuller play; and if their hands were cramped a little by the architectural forms and ritual arrangements imposed upon them, their exuberance in design and their use of color make their work the ruling and beautifying principle throughout.

The fusion of three styles which resulted from the Norman conquest was, naturally, neither complete, simultaneous nor equally balanced in any part of Sicily. Indeed, the resulting architecture is so bewildering in its variations, in the preponderance in one structure of one style and of another in another, that it is a sheer impossiblity in any brief space to give an account of it as a whole which shall fit all its various manifestations. Each division of the island retained a preference for that one of the three elements which was represented by the majority of its inhabitants. Messina and the northern coast as far as Cefalù remained Italian in the main, and the churches of this region show
but a minor admixture of either Byzantine or Saracenic work. Except that it displays a certain early predilection for pointed arches and that the hand of the Greek is evident in its mosiac decoration, the Cathedral of Cefalì would hardly be out of place in Italy proper. At Syracuse and in the southern angle of Sicily, Greek feeling, on the contrary, almost entirely outweighs the Arabic or Norman ; while in Palermo and in the western part of the island the buildings erected even after the Norman dominion had been established for a century are still so preëminently Saracenic that travelers are reluctant to agree to the dates which historians are unanimous in assigning to the buildings there.

The Church of San Giovanni degli Eremiti at Palermo is a remarkable evidence of this local preponderance of Saracenic forms. It was erected, as is proven beyond doubt, by King Roger in the year $\mathrm{II}_{32}$, and was intended for purposes of Christian worship. To be sure Roger erected it upon the foundations of an earlier mosque, and indeed a

prayer niche, which survives from the original edifice, is still to be discerned in the now bare and dismantled interior ; but Roger practically reconstructed the whole, planning it for use with the Roman ritual; and yet, except for the form of its tower, it would not be out of place if transported bodily to the streets of Delhi.

Beside the difference of races in the various parts of the island, the task of the student of Norman-Sicilian architecture is still further complicated by the great alterations which most of the Norman structures have undergone. Each subsequent generation has taken its turn at remodelling them; and in many cases there now remains only a window, a door, or a bit of ornament of the original structure. Instances shown in the accompanying illustrations are the Volta di San Nicolo at Randazzo, the windows in the façade of the Palazzo Montalto at Syracuse, the fine little Norman window (only discovered in 1894), which had been completely built up in the Church of San Giovanni di Natteo at Catania, the Greco-Norman portal of the Church of San Carcere in the same city, and the portal of San Giorgio at Girgenti. The Cathedral of Messina, too, will serve as a case in point to show how little remains of
some of the original Norman structures. This unlucky cathedral was, early in its history, greatly damaged by fire. In 1559 a second conflagration destroyed its campanile; in 1682 its interior was wholly modernized, its pointed arches made semi-circular and the walls covered with stucco; and finally, in 1783 the transept was overthrown by an earthquake. The reader may judge for himself how much remains of the Norman edifice which was completed by Roger II. in 1254 .

Unquestionably the finest and most beautiful of all the churches erected by the Normans in Sicily is the Cathedral of Monreale, which, with its adjoining cloisters, was founded by William the Good in II 74. The church and its cloisters have already been illustrated in this magazine.* Latin in its shape, Roman in its colonnade, Saracenic and Norman in its many mouldings, it betrays, as Mr. Fergusson says, "in all its details that admixture of Greek and Saracenic which is the peculiarity of Sicilian architecture. There is scarcely a single form or detail in the whole building which points to any connection with Northern

[^11]

DETAIL
races or art. It is only the accident of the pointed arch, borrowed from the Moors, that has led to the idea that Gothic feeling existed in this edifice. It is evident that architectural features in the building were subordinate in the eyes of its builders to the mosaic decorations which cover every part of the
interior, and are, in fact, the glory and pride of the edifice, and by which alone it would be entitled to rank among the finest of mediæval churches-decoration unrivalled by anything in its class except, perhaps, St. Mark's at Venice." In matters of external effect, however, it must be admitted that the Gothic architects, who never allowed color decoration to interfere with the lines of their external effects, have here, at least, an immense advantage.

Of the Benedictine Monastery at Monreale, which, as we have said, adjoins the Cathedral (and which, in connection with it, has also been illustrated in previous issues of this SERIES), nothing now remains except the remarkably beautiful cloister, with its hundred arches and more than two hundred richly sculptured pairs of columns with their varied coupled capitals and elaborately carved and inlaid shafts. Of a type common to all countries lying on the Mediterranean, the Cloister of Monreale betrays its origin by a certain Oriental air, a certain aspect of Eastern elegance and lightness, which mark it as quite apart



from the similar cloisters of France and of Spain.

Four churches at Palermo exhibit the Norman-Sicilian style in varying degrees of completeness. We have already spoken of the almost wholly Eastern aspect of San Giovanni degli Eremiti. The Cappella Palatina (more fully shown in a previous issue of this Series), which is, perhaps, the most beautiful chapel in the world, was, however, built before that church by Roger II. Saracenic pointed and stilted arches, the glass mosaics and marble wainscot which sheathe the aisles of the nave and the triple apse, the inlaid floor and the polished columns, which make the whole interior gleam like some radiant jewel-casket, the carved wooden roof which resembles the vault of some stalactitic cavern, and the omnipresent inscriptions in Latin, Greek and ancient Arabic, testify to the three-fold origin of the shrine.

The church of La Martorana was erected in II 43 by Georgios Antiochenos, the Grand Admiral of Roger I. It can now, however, bear little resemblance to its original aspect. The central apse of the Norman church has been replaced by a square chapel, the dome has been removed and the mosaics have been stripped from its interior.

The Cathedral of Palermo, too, exhibits a curious medley of architectural incongruities. Since its original erection by the Englishman, Walter of the Mill (which title became peculiarly Italianized into "Gualterio Offamilio "), whom William the Good had created Archbishop of Palermo, restorations to its disadvantage have been undertaken in each century. The crowning disfigurement, however, took place in the seventeenth century, when a Neapolitan architect, one Fernando Fuga, in spite of protests which, be it remembered to their credit, were made by the Sicilians, added a dome and also completely spoiled the effect of the interior. Lacking as it now is in dignity of eutline and grace of form, the cathedral is still interesting from the remains of exterior decorations which survive from the Norman era, and which show how the bolder masonic ideas of the North were modified by the Arab love of enrichment.

We have already alluded to the Cathedral of Cefalù, and remarked how much less Saracenic and Byzantine influence dominated its neighborhood than other parts of Sicily. Indeed, with the exception of the Greek mosaics and the use of pointed arches it is almost Italian in


NORMAN WINDOW
CATANIA


THE CATHEDRAL


DETAIL OF PORTAL, MESSINA CATHEDRAL
type; and yet it is the earliest of the Norman-Sicilian churches, and was evidently, in more respects than one, a model to the architects who designed the basilicas erected later at Monreale and elsewhere.
The legend of its foundation is that King Roger, being overtaken by a storm at sea and in imminent danger of shipwreck, made a solemn vow that, if brought in safely to the land, he would raise a cathedral on that spot where he first set foot. His pilot succeeded in making the harbor of Cefalù; and about 1145 Roger erected what was for long considered the most magnificent sanctuary built in Sicily since the days when the Greek architects had reared their Doric temples.

The cathedral stands, with its rear to a rock, on a platform approached by a flight of steps. Like that at Monreale it is in the form of a Latin cross with nave, side aisles and transepts, and three apses at the eastern end. The two imposing towers connected by a colonnade, recall the huge towers of St. Etienne at Caen, erected by William the Conqueror. For the most part the interior is unembellished; but the mosaics of the tribune, plainly executed by Greek artists, are said to be the most ancient, and are certainly the most beau-
tiful in workmanship, of any in Sicily. The cloisters connected with the church resemble those of Monreale, but are less interesting and less well-preserved.

Thereare no architecturally important remains of any civil buildings in Sicily which date from the earlier years of the Norman rule. The three examples from Taormina which we give - the fine ruin of the Badia Vecchia, the Palazzo Santo Stefano, and the Palazzo Corvaia-date from between 1300 and 1400 , and show the increasing Gothic influence; but in every one of them we may still see the lingering traces of that Eastern art which has made the architecture of Sicily under the Normans a thing apart.

In summary, let us note that few buildings raised in any reasonable style of architecture which makes use of the arched construction can resemble one another less than do the buildings of the Norman kings in Sicily and the buildings of the Norman kings in England. On Sicilian soil the Greek had erected the column and the Roman had developed it; the Roman-Greek, or rather the Greek-Roman, had taught this column


WINDOW
MESSINA CATHEDRAL
to bear the cupola, and the Saracen had taught it to bear arches of his own favorite pointed shape. The pointed arch in Sicily is merely the sign of Saracenic influence, and should not be looked on as marking the approach of the Gothic of the North, for the work done under the Normans in Sicily has nothing in common with that form of arch. Sometimes purely Oriental, sometimes a basilica with pointed arches; its lines oftenest Saracenic, its details of decoration and adornment oftenest Greek, the Sicilian Church has no kinship with the Norman-French or Nor-man-English church. The Norman share in Sicilian architecture was for the most part to supply the motive power and to make Saracen and Greek work in partnership.

The Sicilians lacked only the coming of the Norman, only the moving and directing power, to create, out of elements already formed, but latent, a dignified and beautiful style, rich and graceful in detail, impressive and noble in constructive lines. With Saracen


WINDOWS, PALAZZO MONTALTO, SYRACUSE
and Greek as his subjects, the Norman had no need to innovate. He had simply to bid the men of the land he had con-quered-men of far more spontaneous artistic genius than his own - to work out their own conceptions under his guidance and stable rule.-C. De B. Garvin.




## HUNTING LODGE OF FRANCIS I., PARIS

THE so-called "Hunting Lodge" of Francis I. (or " Maison de François Ier ") was built in 1527 by that prince at Moret, in the forest of Fontainebleau, for the reception of Diane de Poitiers. As a royal hunting-box, set on a broad balustraded terrace against a background of green trees, and the scene of the picturesque and festive court life of the period, it must have been a delightful little pleasure palace. There is perhaps no better example in architecture of the treatment of a twostory façade. It shows, more markedly than any contemporary building, how strong Italian influence must have been during the early Renaissance in France ; and indeed, so different is it from the other French edifices of its time that its closest parallel is to be found in the palaces of Venice.

The ornament is singularly rich and beautiful, and the frieze, which shows scenes of the vintage, medallion portraits (including that of Margaret of Navarre, between the arms of France and Navarre) and armorial devices, has been attributed, and not improbably, to Jean Goujon. The cornice is inscribed with the Latin distich:

QVI SCIT FRENARE LINGVAM SENSVMQVE DOMARE fortior est illo Qvi frangit viribvs vrbes.

In 1826 the façade was taken down and transported, stone by stone, from Moret to Paris, where it was set up again in the Cours-la-Reine. The interior and sides of the building were not restored, and a few minor modifications were made in the façade, though not enough to in any way destroy its character.
S. F. N.



## ENGLISH FAN-VAULTS

PERHAPS no features of the English cathedrals are more impressive to the tourist or more admired than the wonderfully beautiful fan-vaulted ceilings of the Perpendicular Gothic; and yet these marvellous creations are classed by purists as degenerate members of the architectural family, the result of over-refinement and luxury, the beginnings of decay.

The Perpendicular style in England, contemporaneous with the Flamboyant in France, belongs to the period in Gothic art during which the sturdy vigor and rational construction necessitated by the struggle to overcome physical difficulties were giving place to the fanciful refinements of the designer and craftsman who no longer feared that his building might not stand, but, with accumulated knowledge and experience, could play with his materials, and work
out unfettered the creations of his imagination. It is the apogee of Gothic art, that dangerous point at which there is the mingling of growth and decay; the most fascinating and the most sorrowful point in the history of any art.

In his "Gothic Architecture" Professor Moore has thus characterized the beginning and growth of fan-vault-ing:-
"The lack of a truly Gothic spirit among the mediæval architects of England becomes more marked in the thirteenth century, as the so-called EarlyEnglish style takes form. The works of this period are distinguished by the general adoption of the pointed arch in their design, but rather for decorative ends than as the result of structural necessities, and by the development of peculiar features in the vaulting and the members connected with it, which



VAULTing of tower
Gloucester cathedral
add nothing to the strength, but much to the intricacy of the construction."

Ard proceeding, he refers as follows to one of the earliest examples of these





TOWER VAULTING LINCOLN CATHEDRAL
vaults, the nave of Lincoln Cathedral, built in the early part of the thirteenth century, the design of which is similar to the vault of the tower in the same church, shown in the small cut on this page:
" The employment in vaulting of ribs having no necessary function, which we find first in the choir of the same church, reappears in the nave, where numerous superfluous ribs are introduced. This practice seems to have had a singular fascination for the English builders ; and the predilection for such ribs gathered strength as the native taste asserted itself more and more, until, in the so-called fan-vaulting of the Perpendicular style - the first style of architecture that can properly be called English,- the rib system becomes a complicated network forming elaborate panelling on the surface of the vault."

Contrary to this theory of development, it is claimed by other writers that the fan-vault was conceived and worked out by the builder of the cloisters at Gloucester Cathedral, and was immediately adopted all over England. Perhaps this builder got his first idea from the earlier ceilings, in which equal ribs were used, or very possibly from the radiating ribs which sprung from the central column of the typical English chapter-house. It is, however, a fea-
ture peculiar to England, being found nowhere else ; and whatever may be said of its origin, or how much it may be discredited as illogical and constructionally false, it will still remain one of the loveliest and most charming creations of the mediæval builders.

Acknowledging the superiority in logical construction of the big simple French vaults, it must still be granted that their few and thin ribs and their plain surfaces are cold, bare and inappropriate to the lower portions of a fully developed Gothic interior. Contrasting the English with the French vaults Mrs. Van Rensselaer says : -
" The later English ceilings, with their rich multitude of interwoven ribs and accentuating bosses, are much more agreeable to the eye, and are more beautiful than any of a simpler kind could be when covering small elaborate rooms or chapels. But in very large constructions I think they lack dignity, decision, and constructional expressiveness. A network seems to have been substituted for a true framework of ribs. Even when we know that it is a framework properly playing its part, we do not clearly see how the pressures are trans-



BOSS IN Cloister, Norwich CAThedral
mitted to the ground. And of course such a network is least pleasing when, as we shall find to be the case in the choir of Wells, an actual barrel-vault is covered with a fretwork of ribs which have no real connection with its structure."

Fan-vaulting is, in fact, a system of construction in which the body of the


BOSSIN CLOISTER, NORWICHCATHEDRAL
vault sustains itself, and such raised lines as may appear on its surface whether simulating ribs or not - are simply superficial and decorative.

Thus, with our analysis, we have knocked the foundation from under this beautiful fabric; but we cannot destroy its charm nor can we deny its appropriateness when seen at its best. T. I. G.



VAULTING OF NORTH-EAST CHAPEL
Ely CATHEDRAL

vaUlting of south-EASt CHAPEL
Ely CAThedral

## The Architectural Annual

An Illustrated Review of Contemporaneous Architecture

## 1901

THEY said it could not be done-the architectural publication with a purpose was scouted. Better abandon the project, was the advice of even friendly critics. But we have persevered, and, adopting a fearless policy in accordance with certain broad ideas, have succeeded. Our initial venture met with success because we felt the need of life and things alive because it was edited by an active member of the profession, anxious only to present themes of interest to the most advanced and aspiring members of the profession.

The fact is proved by the unprecedented sale of the first edition and the continued demand for the second edition of Volume One (2,ooo copies). Furthermore, we have learned that high standards are no handicap to popularity, and that the highest ideals may be maintained in treating
the most modest and the most general problems.

We have learned more. Keen watchfulness, undiminished enthusiasm and unsparing effort have enabled us to improve greatly upon the Architectural AnNUAL of 1 goo.

The volume for Igor is better printed, and contains better and larger illustrations and newer and fresher ideas.

A searching criticism accompanies the presentation of illustrations, and, while much appears apparently at variance with Americanideals, we nevertheless show how strength and power is gained by assimilation, and that even the most servile copies of buildings in the Old World play their part in the development of a native architecture.

The appreciation of the year does not exploit a man or his work, but, rather, the fundamental principles underlying his
work. By means of more than a score of photographs and drawings these are illustrated and illumined by two special articles. A portrait and views of his work, however, have not been omitted.

Among the special features are several new views of famous buildings by the eminent French architect, Charles Garnier.

In contrast with these monumental problems, and the second $\cdot$ installment of the "Science of Cities," in which the organic unity of city - making is analyzed and anatomicallyset forth, is an article on the American suburban house and its relation to the garden. A charming, but very brief article, accompanied by six full-page designs of suburban homes, minutely drawn out, showing all the details of garden accessories, as well as the internal arrangement and equipment of six different types of suburban homes, is published and explodes the wasteful and almost universal practice of planting a house in the middle of a small lot. These six designs are all different in size, cost of execution and
general layout, ranging from a narrow village corner lot, 35 feet wide, to a site an acre in extent. They will be found of the greatest value to practising architects desiring to interest clients in gardening on a modest scale. Formal gardening is extensively illustrated and a series of Oriental gardens, never before published, will be found of great value. Others from Italy, France and England are equally suggestive.

The harmonious architectural treatment of greenhouses (a subject seldom attempted), walks, trellises, terraces, provision for garden games, basins and fountains, the kitchen garden and hotbeds formally laid out, illumination and color; and, above all, privacy, without introducing the forbidding walled garden of the Old World, that make village streets often look so cramped and uninviting, are among the subjects treated; in fact, containing more suggestive ideas than are to be found within the covers of any other single volume. The Architectural Annual on its second appearance will be found to be a book
of reference as well as a handbook of ideas. Indispensable and especially useful to architects in scattered communities, where clients demand something up-todate - 'something like this, that or the other they saw while traveling or visiting," but of which the architect gains no idea from their description. The Annual draws their fire: - the clients' interest is rekindled and the matter is settled! It is not a technical book, for if it had ever been we should not have sold it to a large clientele of laymen, including nearly a hundred public libraries. Nor would it have been so extensively and so favorably reviewed.

In the present volume the Buffalo Ex-
position is well illustrated, and many other leading designs of the year appear.

The disposal of human remains is considered, including drawings for a thor-


From the "Pan Am." oughly modern crematory.
The editorial department (from which the President of the Institute twice quoted in his last annual address) is again filled with incisive and timely matter, while the directory, book reviews, and lists of scholarship winners, etc., is more complete than ever.
Those who never buy an architectural book and subscribe only to a single magazine, experimenting one year with one and the next with another, unite in indorsing the Annual, and hundreds testify that so

MUCH HIGH CLASS REPRESENTATIVE MATTER IS NOT TO BE HAD ELSEWHERE IN A SINGLE VOLUME.

The Annual contains about 300 pages, $9^{\prime \prime}$ x 12 ," text and cuts printed on heavy coated paper, and is bound in Vellum de Luxe with gold stamp.

## WHAT THE CRITICS SAY:

The Inland Architect: "A year book, the best compilation yet presented to the architectural student."
The New York Times: "The volume is, in short, one for the bookshelves of every architect and every student, and is one that the layman who keeps in touch with current movements may well take pride in owning. For in its chronicle of the current effort for municipal art from the standpoint of the architects, and in its record of contemporaneous architectural conditions, it represents a fine undertaking, one of high and ambitious ideal."
The New England Magazine: "The best examples of the year's work are presented, together with reports of the most important meetings of the year, accompanied by careful essays on technical subjects.'
$\boldsymbol{L}$ ife: "It is a notable volume, and contains a wonderful amount of information and artistic pleasure."
The Review of Reviews: "The Annual has great variety both of illustration and text, and reflects in the most attractive and agreeable way the best current work at home and abroad.


# The Duplex I Beam Hanger 

MADE OUT OF MALLEABLE IRON
Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of unifor $m$ height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E , Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER C0.

CLEVELAND, OHIO.

NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.
Full Stock of All Sizes on hand.


## Fireplace Mantels

## $\$ 12.00$ <br> and up.

Made of Ornamental Brick
in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.
Philadelphia \& Boston Face Brick Co. P.O. Box 8929.

Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted.
It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES

## SAMSON CORDAGE WORKS, <br> BOSTON.




Geo. W. Maher, Architect, Chicago.

## Folsom New Model

 Snow Guard.Specified by leading architects to hold the snow on all pitch to hold the snow on all pitch
roofs, entirely obviating all chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.

THREE HISTORIC BUILDINGS.
Faneuil Hall, Old South Church, King's Chapel,

Boston,
Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.


# Ulse <br> Derter JBrothers' English ¥bíngle $\mathfrak{Z t a i n s}$ 

ON ALL SHINGLED SURFACES
interior stains a specialty
Send for sample boards and color plates to
Merter $\mathfrak{J B r o t b e r s}$, 103=105=107 JBroad street, Jboston, Slsass.


# Every three feet of 

## The best SASH CORD

Made
IS NOW MARKED
SILVER LAKE "A"

Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


A COMPLETE EQUIPMENT AND IMMENSE STORAGE CAPACITY ENABLE US TO PRODUCE ARCHITECTURAL FINISHES WHICH ARE THE STANDARD IN QUALITY

## Supremis Floor Finish Shipoleum tor Standing Finish

White Enamelite An Emamel Paint tor Coloonial Interiors.

Send for our "Suggestions" on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

CHICAGO VARNISH CO.
CHICAGO.
NEW YORK.

## The Architectural Reprint

PUBLISHED AT 1424 NEW YORK AVENUE, WASHINGTON, D.C.

A periodical publication which reprints themostrare and famous books on architecture and the allied arts
Until November first we offer a special Supplement to all yearly subscribers containing reprints of all the Compositions in Volumes I. and II. of the

## Cours D' Architecture

By 7. F. BLONDEL, Published at Paris in 1771; one of the rarest and most famous books on Architecture ever published. Fifteen plates and title page. The first volume of the reprint will contain, in addition to a collection of miscellaneous plates from Blondel, Ludwig Hoffman, Palladio, Epoque Louis XVI., etc., complete reprints of the following books: -

GELIS-DIDOT ET LAMBERT.
Hotels and Maisons de Paris
Renaissance Architecture and Ornamentin Spain PRENTICE.

Portfolios including title pages FREE. roo plates $\mathrm{IT}^{\mathrm{I}} / 2$ by $13^{1 / 2}$ inches in each volume of the Reprint.

Subscription Price $\mathbf{\$ 2 . 5 0}$ per annum three months' trial subscription 50 Cents



MEMORIAL TABLETS bronze and brass
GRILLE WORK bronze, brass and iron

MOSAICS
MARBLE AND TILE
Murdock Parlor Grate Co. 156 BOYLSTON ST., BOSTON Works: Middleboro, Mass.

The Nlewldea $\square$ Hines 6

0
$\rightarrow$
Strongest, simplest, neatest, most durable. Door swings on fixed pintle-cannot sag No other hinge so good.
Builder's Catalogue mailed Free.
Stover Mfg. Cors
171 River st.
Ereeport, Illinois.

SEND FOR OUR CATALOGUE OF FLY SCREENS
Artistic Patterns, Finest Workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.
 MADE OF STEEL GALVANIZED, ${ }_{1}^{1}{ }^{\prime \prime}$ " THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNST0N, NEWPORT, R.I,

## ABSOLUTELY

WHITE TERRA COTTA
of the very best quality. A most appropriate material for handsome fronts, or libraries in Classic or Renais sance style. Limestone and Other Shades made to order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA Co. 156 Fifth Avenue, New York City.

## RED SLATE

ROOFING SLATES, TILES, PAINT ALGONQUIN RED SLATE CO. WORCESTER, MASS.


A New Era in
Screens \& Awnings
Just think this over! Do you want Solid Comfort, No Flies, No Sun, Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Screen and Awning. Send for Catalogue.
PHENIX MFG. CO.
028 Centre St.,
MILWAUKEE, WIS,


## PARRUET

PLAIIN OR
ORNRITIENTTLL
Thick or Thin

We have representatives
and stocks of floors in the
leading cities. Write for
Prices and Book of Designs.

## OUR NEW CATALOGUE OF REFLECTING FIXTURES

For effectively lighting Churches, Stores, Schools, Theatres, Libraries, Art Galleries and Institutional Buildings of all kinds, is now ready for distribution. We have tried to make it complete, yet concise, and believe it will be of use to every architect.

Sent on Request.
I. P. PRINK, 551 PEARL ST., NEW YORK

## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can have water every day in the year, and youre cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


Rider-Ericsson Engine Co.

# THE <br> BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 



CATHEDRAL AND CLOISTERS OF ST. TROPHIME, ARLES, FRANCE

POMPEIAN WALL DECORATIONS THE DECORATIVE WORK OF THE DELLA ROBBIAS

## BATES AND GUILD COMPANY BOSTON MASS.

## The Highest $\mathcal{A}$ ward Given at the Pan=American Exposition

# GOLD MEDAL AWARDED TO THE STRATHMORE ARTIST PAPERS 

For Sale by all Deaters
Write for Sample Book
Mittineague Paper Company MITTINEAGUE, MASSACHUSETTS, U.S.A.

# APPLIED PERSPECTIVE 

For Architects and Painters
BY WILLIAM P. P. LONGFELLOW

## With 108 Illustrations

1 vol. 4to, \$3.00 net; postpaid \$3.20
Mr . Longfellow is well known as an architect and as an authoritative writer on subjects connected with his profession. His present work has an Introduction on "Perspective in Nature," which is very entertaining even to one neither architect nor painter. This is followed by a series of problems to show the application in art and architecture of what may be seen in nature. These problems are handled in a masterly way, and deal with a large variety of matters essential to the training of artists and draughtsmen. The book contains thirtythree full-page illustrations, partly from photographs of buildings and landscapes, and seventy-five text illustrations. Altogether the book is one of great practical value to those for whom it was written, and fills a place not now occupied.

Sold by all Booksellers
Sent, postpaid, on receipt of $\$ 3.20$
HOUGHTON, MIFFLIN \& CO., Boston
85 FIFTH AVENUE, NEW YORK

# The BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION 

PUBLISHED MONTHLY BY

Bates \& GUILD COMPANY, 42 CHAUNCY ST., BOSTON

## PUBLISHER'S ANNOUNCEMENTS


#### Abstract

SUBSCRIPTIONS: Subscription price, $\$ \mathrm{r} .00$ a year, in advance, postpaid to any address in the United States or Canada; to foreign countries in the Postal Union, $\$ \mathrm{r} .50$. Single copies, to cents. Subscriptions may begin with any issue, but as each yearly volume of the magazine commences with the January number, and as index-pages, bindings, etc., are prepared for complete volumes, intending subscribers are advised to date their subscriptions from January. REMITTANCES: Remittances may be made by Post-Office money-order, bank cheque, express order, or in postage stamps. Currency sent by mall usually comes safely, but should be securely wrapped, and is at the risk of the sender. CHANGES OF ADDRESS: When a change of address is desired, both the old and the new addresses should be given, and notice of the change should reach this office not later than the tenth of the month. The Publishers cannot be responsible for copies lost through failure to notify them of such changes. The Brochure Series is mailed on the 15 th of each month. Subscribers who do not receive their copies before the end of the month will piease notify the Publishers immediately, that they may be traced and any oversight corrected. If not so notified, the Publishers cannot replace losses except on receipt of price. BACK VOLUMES AND BINDINGS: Back Volumes (unbound) for $1896, \$ 2.50$; for $1897,1898,1899$ and $1900, \$ 1.00$ each. Bound Volumes, in specially designed buckram covers, for $1896, \$ 3.50$; for 1897,1898 , 1899 and 1900 , $\$ 1.75$ each. Subscribers' copies bound uniform for 75 cents a volume. Separate back numbers (with the exception of all issues for 1895 and 1896 and those for January, May and November, 1897, January 1898, January and May, 1899, and September 1900, which cannot be supplied separately), ten cents each.

Entered at the Boston Post Office as Second-class Matter.


## THE BROCHURE SERIES DURING 1902

WITH this number The Brochure Series concludes its Sixth Volume. The editor believes that he can promise those subscribers who continue the magazine's company during 1902, twelve most attractive numbers. In general the plan of the Series will remain unchanged. It will continue to present illustrations of such works in architecture and the allied arts as have been proven excellent by the test of time, with brief, but accurate historical and critical comments. In the forthcoming Volume much space will be devoted to subjects which, while intrinsically excellent, have the additional charm of novelty.

## NOTES

The semi-annual meeting of the Detroit Architectural Club was held October 7. This being the first meeting of the season a reception was given in connection with it, and the rooms had been decorated for the occasion. During the summer months the club had also been greatly improved with pieces of furniture, etc.
The election of officers held that evening resulted as follows: President, Cheri Mandelbaum; Vice-President, Walter E. Chaffee; Secretary, Dalton R. Wells; Treasurer, John J. Fraunfelder The reports, as given by the officers and different committees of the past year, proved the club to be in good standing in every particular. At this meeting it was also decided to have the regular business meetings monthly instead of bi-weekly as heretofore.
The season's work will consist of four lectures by architects of national reputation, and of
classes in design and steel construction, the former to meet Thursday nights and to be taught by Architect J. W. Case, the latter to be given on Monday evenings and to be conducted by Mr. Walter O. Chaffee.

At this meeting the medals awarded by the Michigan Chapter A.I.A. in competition for designs for an entrance to Palmer Park of Detroit were presented to Mr. Richard Mildner and F. C. Pollmar. Mr. Louis Risher received honorary mention. The medals were presented by Mr. Frank C. Baldwin of the Michigan Chapter A.I.A.

The following is a list of the committees with their chairmen for the season Entertainment, J. C. Gillard; House, John J. Fraunfelder; Class, Dalton R. Wells; Exhibition, Francis S. Swales; Publicity, Adolph Eisen. At the regular meeting on Monday, November 3, Mr. Carlo Rimanellie, the well known Italian sculptor, addressed the club, illustrating his talk with sketches in clay.

# "Tapical Architueture" <br> <br> CLASSIFIED ARCHITECTURAL MOTIVES AND DETAILS <br> <br> CLASSIFIED ARCHITECTURAL MOTIVES AND DETAILS PLATES [ONLY] $10 \times 14$ INCHES PLATES [ONLY] $10 \times 14$ INCHES PUBLISHED MONTHLY, \$3 00 PER YEAR 

 PUBLISHED MONTHLY, \$3 00 PER YEAR}

[^12]1. Renaissance Doorways.......... I.
2. Renaissance Doorways..........II.
3. Renaissance Capitals ............ I.
4. Renaissance Capitals ...........II.
5. Iron Gates and Railings ....... I.
6. Iron Gates and Railings........II.
7. Renaissance Chimneypieces .....
8. Tombs
9. Arabesques

1o. Sgraffito
$\qquad$
$\qquad$

- Ecclesiastical Domes. ..... I.11. Ecclesiastical Domes.
II.

13. Renaissance CornicesIII.
14. Iron Gates and Railings ..... IV.
15. Ecclesiastical Domes ..... III.
16. Lions18. Ecclesiastical Domes
$\qquad$$\ldots I V$
17. Renaissance Pulpits

$\qquad$20. Ecclesiastical Domes........... V.2I. Renaissance Capitals..........III.
INDUCEMENT The Subscription-Year begins in November, and with a prepaid subscription fora year from November, 190r, we will deliver without charge any three of theabove numbers already published.
" Iftalian danamiamte

CONSTITUTES THE FIRST VOLUME OF THE "TOPICAL ARCHITECTURE" LIBRARY
[No part of which has been, or will be, published in the Monthly issue of "Topical Architecture."] 104 PLATES, $10 \times 14$ : - ONE-HALF SCALE DRAWINGS, ONE-HALF PHOTOGRAPHIC REPRODUCTIONS

PRICE, BOUND IN CLOTH, \$10.00

## SPECIAL NOTICE.

The volumes of this Library (in Portfolio form) will also be sold on the Installment Plan at the same price (\$10.00), under agreement to pay in quarterly payments of $\$ 2.50$ each, the volumes being delivered to the purchaser on payment of the first quarter.

The Second Volume of this Library, now in press, is devoted to "DOOR AND WINDOW GRILLES"

American Architect and Building News Company
211 TREMONT STREET, BOSTON, MASS.

## The Architectural Reprint <br> PUBLISHED AT 1424 NEW YORK AVENUE, WASHINGTON, D.C.

A periodical publication which reprints the most rare and famous books on architecture and the allied arts.

## PRIZE COMPETITION

The publishers, desiring to be guided by the wishes of their subscribers in making selections of plates for the second volume of The Architectural Reprint, offer

## A PRIZE of $\mathbf{\$ 1 0 . 0 0}$ and a SECOND PRIZE of $\$ 5.00$

For the best and second best list of Seven Architectural Books suitable for reproduction.
The number of votes cast for each book will determine its standing. No book published in the United States will be con sidered as available, as the policy of The Reprint Company is to reproduce only books which are out of print and practically unobtainable, and in no case does it publish any modern plates without the consent of the author or publishers. Lists to be in Feb. I5, 1902 .

Why is The Architectural Reprint cheaper than any other publication of the same character? Why are "The Reprint Books" cheaper than any others?

Because
We believe in $\begin{cases}\text { Large Editions } & \begin{array}{l}\text { Reduced Cost } \\ \text { Large Sales }\end{array} \\ \text { Small Profits }\end{cases}$ We do NOT believe in $\left\{\begin{array}{l}\text { Small Editions Great Cost }\end{array}\right.$ Resulting in expensive books for the few
SUPPLEMENT No. 2 will be given with the January issue. Free with subscriptions received before February 15th.

## THE FIRST VOLUME

of the reprint will contain, in addition to a collection of miscellaneous plates from Blondel, Ludwig Hoffman, Palladio Epoque Louis XVI., etc., complete reprints of the following books:-Gelis-Didot et Lambert. Hotels and Maisons de Paris. Renaissance Architecture and Ornament in Spain. Prentice. IOO plates $11 \frac{1}{2}$ by $13^{1 / 2}$ inches in each volume of the Reprint.
-
SUBSCRIPTION PRICE $\$ 2.50$ per annum. Three months' trial subscription 50 cents. io sample plates mailed flat, 25 cents. No free sample copies. Single numbers 35 cents. Volume II. commences with the March issue.

## OUR CATALOGUE OF

## Architectural enulliations

MANY OF THEM SUITABLE FOR HOLIDAY GIFTS, IS NOW READY, AND A COPY WILL BE MAILED UPON REQUEST

## -

BATES \& GUILD CO.
$\mathbb{D} \mathfrak{U b I} \mathfrak{i} \mathfrak{G} \mathfrak{b} \mathfrak{s}$
$4^{2}$ CHAUNCY STREET
BOSTON, MASS.

PERSPECTIVES RENDERED in Pen-and-Ink and Water-Color. WALTER M. CAMPBELL 8 beacon street, boston, mass


81 FRANKLIN STREET, BOSTON, MASS.

## IMPORTANT LITIGATION RELATING TO MAGNESIA COVERING PATENTS

THE KEASBEY $\delta$ MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford \& Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf, Jesse W. Starr, C. W. Trainer Manufacturing Company and $\mathbf{C}$. W. Trainer, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereo to be made perpetual, and also demands an accounting and damages.

嘫 All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

Beware of fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

## KEASBEY $\mathcal{E}$ MATTISON CO.

AMBLER, PENNA.
NEW YORK BOSTON CHICAGO WASHINGTON ATLANTA NEW ORLEANS CLEVELAND CINCINNATI MILWAUKEE Authorized Selling Agents

# INTERIOR DECORATIONS 

SPECIAL Stuffs and Wall Papers. Fine Casts and Pottery. No commissions charged for executing orders. Sketches submitted for alterations and interior decorations. Careful attention given to doing over rooms.

MISS WOODVILLE,<br>MRS. H. MARKOE,<br>Iro S. I7th ST., PHILADELPHIA<br>CORRESPONDENTS IN LONDON AND NEW YORK

THE CATHEDRAL AND CLOISTERS OF ST. TROPHIME, ARLES, FRANCE

POMPEIAN WALL DECORATIONS

THE DECORATIVE TERRA COTTAS OF THE DELLA ROBBIAS


# Brochure Series 

OF ARCHITECTURAL ILLUSTRATION

# THE CATHEDRAL AND CLOISTER OF ST. TROPHIME, ARLES 

PROVENCE and Languedoc, respectively on the east and west of the river Rhone, are the two provinces of France bordering on the Mediterranean. With a warm, equable climate, dry air and brilliant sunshine, giving a depth of purple shadows, this is, in spring and summer, a land to entice the languid traveler; while to the student it is hardly second to Italy in richness of historic and artistic association. It was that portion of transalpine Gaul first conquered by the Romans and by them often called The Province, - a name perpetuated to th is day, although without present significance.

The Phenicians founded colonies here, and later came the Greeks from Asia Minor, the Greek colonies spreading from Massilia or Marseilles (once one of the greatest of Greek cities), along the coast as far west as Narbonne, and up
the Rhone to Avignon, Tarascon and Arles. This Greek domination, which began six centuries before the Christian era, continued until supplanted by the Romans ; and it is possibly not too great an assumption to trace in the modern Provençal something of the Greek type of character, as well as to account for the physical beauty of Provençal women by their Greek lineage.

The succession of Greek, Roman and barbarian dominions throughout southern Europe has been described in the account of the "Architecture of Sicily" in a recent issue of this Series. In southern France the same forces combined to give inimitable charm to the architectural remains, and, be it added, to confuse the student who would trace the history of architectural styles.

In 154 B.C. some of the Greek colonies asked the help of the Romans against
the revolts of the native tribes, and the Romans came - to stay permanently, supplanting the Greeks. In the fifth century the Visigoths, then Christianized and partly civilized, followed, establishing themselves in the south of Gaul on the ruins of the Roman dominion. The Franks followed the Visigoths; and, about the beginning of the tenth cen-

With such a confusion of influences, racial and political, what wonder that Provençal architecture is a mixture of styles and that the Provençal language is still distinctive - something more than a patois or a dialect. It is interesting to note in this connection the remark of Mrs. Van Rensselaer, that "the lingering, dragging accent of the Provençal,

tury, after the breaking up of Charlemagne's empire, Provence became for a time an independent kingdom. In mediæval times the political history of Provence was much confused. Both Germany and France claimed feudal overlordship, and even after the territory was formally annexed to France in I486 it was governed as a separate province down to the French Revolution.
so musical in his own language, but less agreeable when he speaks French, is very closely reproduced when a modern Greek speaks French."

The Provence of today is but a reminiscence. It lives in the past. Marseilles, it is true, is an important commercial city, some of the larger towns may also be considered modern and progressive, and in the vicinity of Nice


DOOR HINGE CHURCH OF ST. TROPHIME
winter resorts have brought crowds of foreigners seeking health or pleasure ; but these exceptions only prove the rule. Writing in 1894 of a day's journey in the steamer down the river Rhone, Mrs. Van Rensselaer says: "For ten incomparably swift exciting hours you will realize your childhood's dream of an uninjured mediæval world; and you will see, as in a sliding panorama, the change from northern to southern picturesque-ness-from river landscapes such as Corot painted, to such as only a Monet or Pissaro could translate. . . . As the landscape changes so does the architecture. The villages look like Italy or

Spain, and the churches are Romanesque with compact square bodies, sturdy central towers, semicircular apses, and round-headed windows and arcades."

On the left bank of the Rhone, twentyseven miles from its mouth, is Arles, the "Arelate" of the ancients, a town which in the time of Cæsar was a rival of Marseilles. It still boasts the ruined remains of a theatre begun in the Augustan age and of a great amphitheatre. In the centre of the town on a narrow street opposite the ancient theatre is the Cathedral of St. Trophime, which is said to have been built on the ruins of a Roman prætorium and consecrated in 606. It has, however, been several times repaired, if not rebuilt, and the present structure dates mainly from the eleventh and twelfth centuries. The choir was added in 1430, and the whole building has been recently restored. St. Trophime, built according to the Romanesque principles of construction, is a type of numerous buildings of the early twelfth century in Provence. There are few chapters in the history of mediæval architecture which it would

be more desirable to have more fully and carefully written than that of the style of Provence from the retirement of the Romans to the accession of the Franks. This country, from various causes, retained through the dark ages more of its former civilization than any other west of the Alps. The Romanesque of southern France showed from the beginning a refinement and elegance

The church of St. Trophime has a nave with a pointed vault, two low side aisles divided into four bays and separated from the sanctuary by a transept. The sanctuary is composed of a large semicircular apse and a smaller one on either side, each covered with a half domical vault. The plan strongly recalls the Roman basilica; and, as a matter of fact, the most complex plans and

which clearly distinguished it from work in the same style elsewhere. The French Romanesque architects, while adopting the new expedients of construction, still retained the character, the refined taste in ornamentation inherited through centuries of association with the works of ancient art, which were more lavishly scattered over southern Gaul than any other of the Roman possessions.

CHURCH OF ST. TROPHIME, ARLES
forms of the latest Gothic cathedrals had their germs in the civic basilica. In the basilica are found the nave and aisles divided by rows of columns, galleries above the aisles, and the tall nave wall pierced by clearstory windows, the short transept where legal contestants and clerks had sat, and the apse, prepared for the magistrate's throne. No stages in this long continued metamorphosis are lacking, and the Provençal


THE CLOISTER COURT
ST. TROPHIME, ARLES

Romanesque exhibits some of the earliest steps in the process.

The portal and the cloister of St. Trophime are the two features upon which its fame chiefly rests. "The portal,"
says Mrs. Van Rensselaer, "seems remarkably, even radically, different from the porch of Avignon Cathedral ; yet little more than a century can lie between them, for it was built soon after the

year IIOO, and intermediate types can be found in other towns. Despite its individuality, we perceive that it is a hybrid flower; another influence has affected it besides the Roman tradition and the impulses common to Romanesque art in general, and this is clearly a Byzantine influence. In the figure sculptures of the porch, as well as of the cloister, there is a fine classical casting of the
used in late Roman days, as, for example, on the arch of Constantine in Rome. In the minor enrichments we find Roman looking leafage, but carved in a sharp spiky way that reminds us of the East ; and we also find more purely classic motives, like the Greek fret and egg-and-dart, even in the cornices of the pediment above the portal, while the corbels which bear this cornice are

draperies, but they have much of the stiffness characteristic of the more formal types of Byzantine art. The central column of the doorway, supporting the carved tympanum, has no precedent in Roman or in Syrian art ; the broad lintel again is common to the Romanesque of all countries, but its prolongation, as a sort of frieze above the colonnades, reproduces those bands of figure sculpture which were often
grotesque, and therefore Romanesque in character." And so we may go on and take up each separate detail, tracing it to first one and then another influence. But all the diverse elements, architectural and sculptural, have been fused into a clear, vigorous composition, which from end to end, and down to the smallest detail, shows no disconnected feature or weak device. In one respect we find the sculptures of this porch simi-

lar to those of the same period in other parts of Europe. They represent the hopes and terrors inspired by the prospect of the Judgment Day. Christ, the Judge, seated in glory, occupies the centre of the tympanum ; below, on the lintel, are the twelve apostles; to the right is the procession of the blessed dead; and to the left are the wicked, chained together and dragged by a demon through the flames of hell. These and the Bible stories in all their details are found in the same imagery on the portals of the northern churches.

There is a singular quality of texture and color which adds to the charm of this
portal. It is not cracked and eaten by frost and weather like the sculptures of the north, but the stone has been mellowed and softened by the sun and rain of centuries until it has acquired almost the patina of antique bronze. It has been suggested that a coat of oil long since applied has helped to produce this effect.

On the south of the church is the cloister enclosing a square court. Two of its sides were built at the same time as the portal, when the Cistercian order, with its rigorous ascetic tenets, had not succeeded in suppressing the Provençal love for beauty. The other two sides
are later and Gothic, and show an effort, if not an entirely successful one, to conform to the spirit and effect of the earlier work.

In all collegiate churches the cloister forms an important part of the establishment, and is frequently, as at Arles, more beautiful than the church itself.
architecture for this special purpose. In the north of France and in England a cloister is generally enclosed with a range of traceried windows like those of the church. In the south the openings are unglazed and have no resemblance to windows, but are composed of colonnades of small and elegant pillars, some-


In the cold wet climates of the north the cloisters, although always used, lose much of their appropriateness, but in the warm sunny south their charm is increased tenfold. As Fergusson has pointed out, the designers of these cloisters seem to have felt this, and to have devoted a large share of their attention to them, creating in fact, a new style of
times single and sometimes coupled, generally alternately single and paired, which support arches of light and graceful design, all these features being suited to the place where they are used, and to that only. The cloister at Arles has long occupied the attention of travelers, and perhaps no other has been so much admired or so often drawn. G.P.

## POMPEIAN WALL DECORATIONS

THE principal decorations of the Pompeian house consisted of its wall paintings. The great majority of these paintings that have come down to us date from between the year 63 A.D. (when the city was shaken by an earthquake and many of its important houses were necessarily rebuilt,) and the year 79 A.D., when it was buried by Vesuvius.

The main characteristics of Pompeian mural decoration are well known, - the
ornate work. The effects of architectural perspective are sometimes too violent, and the spaces are often disagreeably broken by overcomplicated schemes of design and studded with pictures of various scales which have but little relation to their surroundings. On the other hand, scant justice has been done to their unquestionably high artistic merit. From Vitruvius down the Roman wall paintings have been condemned as meretricious because of the theatrical effect


DECORATION IN THE FIRST STYLE
HOUSE OF SALLUST, POMPEII
division of the wall surface into panels by ornamental columns and arabesques, the bands and backgrounds of black, or deep colors, reds, umbers and greens, the dancing or floating figures relieved against them, the framed mythological groups and genre scenes with landscape backgrounds, the exotic landscapes, and the deceptive painting of such architectiral features as windows, corridors and porticos which seem to open out of the flat of the wall. These decorations may doubtless be accused of many defects, especially in the later and more
with which, in disdain of constructive laws, heavy gables were set upon reedlike colvmns of no supporting power, and openings were depicted where they could not possibly have existed. But the writers who have thus condemned the Roman type of mural decoration seem to have lost sight of the cardinal fact that a certain scenic effect was the aim and object of the designers. The intention was not to produce a realistic representation, but to obtain a general openness and cheerfulness of aspect which could be best achieved without


DECORATION IN THE SECOND STYLE

naturalism or unity of idea. Indeed, the very fantastic unreality of Pompeian decoration, -an unreality not unlike the painting upon Japanese lacquered wares, - was its chief charm. The impossible architecture plainly renounces all pretence to possibility, and aims merely to be decorative ; the opened vistas were not intended to deceive, but

The greatest merit of the paintings is, however, only to be discovered after a careful examination of their details. Such an examination has only been made possible in late years when competent artists have, with the aid of photography, made such careful restorations of the principal examples as allow us to judge of their actual effect in the


DECORATION IN THE SECOND STYLE
rather contrived sentimentally, that the eye might find an opening through the narrow walls of small rooms and take contrasting pleasure in a long perspective. The coloring, too, in so far as we may now judge it, after the altering effects of time and volcanic fumes, is very harmonious, and bears witness to a love of vivid polychromy doubtless inherited from the Greeks.
eyes of the Pompeians. If we discard such frescos as ornamented the poorer houses or inferior rooms, and which were manifestly but the reproductions of stock designs from some pattern-book by mere nechanical artisans, and concern ourselves mainly with those which show the hand of the true artist, we shall be struck with the unsurpassed lightness and charm of the decorative lines, the

fertility of invention, and above all, with the rapid skill and extreme verve and freedom with which the designs are, as it were, flung onto the walls. It is perhaps not the slightest tribute to their quality to remember how very largely the Pompeian wall-decorations contributed to the later ornamental art of the Renaissance. The fanciful pilasters, the patterns of scroll work mixed with semi-realistic foliage and grotesque figures of boys, animals and birds, thoroughly fascinated Raphael and many of his pupils and contemporaries, and the loggie of the Vatican and the Farnese Palace are full of carefully studied reproductions of Pompeian motives.

The wall decorations of Pompeii may be divided into four distinct styles, representing as many different epochs in the history of the city. The first, and least pretentious, of these styles dates
from pre-Roman times; and may be called the style of "incrustation," for it was mainly concerned with the imitation of marble slabs and columns by colored stucco reliefs. In this style the wall was lined with square or oblong blocks of stucco in low relief, sometimes broken by pilasters, also in relief, with a cornice resting upon them. All these embossed features were then painted in imitation of veined marbles. In this early style figures were not introduced, and ornamental borders rarely, the object of the decoration being to imitate as closely as possible, in paint and stucco, a room wainscoted with blocks of colored marbles.
The second style of decoration was roughly contemporaneous in date with the Roman Republic. Its usual division of the wall spaces into panels cut by pilasters was borrowed from the pre-
ceding style, but the effect of relief in the panels, pilasters and cornices was now no longer accomplished by an actual overlaying of stucco, but solely by painted imitation of this relief. As the first style had imitated slabs of colored
usually supported a painted architrave, and, toward the last of the period, the columns on the most important wall of the room were made to support a pediment, and in this pediment fanciful figures and landscapes began to be depicted.


DECORATION IN THE THIRD STyLE
HOUSE OF MESOR, POMPEII
marbles in actual relief, the second style imitated both the marbles and the relief by painting. Moulded cornices were still sometimes employed, but their projection became very slight. The panels were divided by painted columns which

As motives for the decoration, details borrowed from the Greeks prevailed, but were often intermingled with others borrowed from Egypt. Many of the columns are clearly Egyptian in style, and this influx of Egyptian art marked
a vogue, then growing in Pompeii, for things Egyptian, a fashion still more noticeable in the style which immediately followed.

This, the third style was, in time, contemporary with the early Roman emperors. It was charracterized by exquisite delicacy in ornament and great refinement in workmanship. The columns were now for the most part painted white with greenish shadows, and were relieved by bands of violet, umber and pale green. As the style developed, these


DETAIL IN THE THIRD STYLE
columns became more and more delicate, and finally served as mere detached ornaments, taking almost the forms of candelabra. Sometimes the columns were but delicate pedestals; sometimes they appeared as slender wands ornamented by fanciful patterns and from which branched sprigs of leaves. This third style was, in the harmony of its coloring and the richness and delicacy of its ornament, the most refined and least faulty of all those which flourished at



DECORATION IN THE THIRD STVLE (DETAIL)
HOUSE OF JUCUNDUS, POMPEII

Pompeii. Its white columns, the sphinxes and winged animals which peopled its
thousand decorative details, the lotus flowers and Egyptian vases, the light


DECORATION IN THE THIRD STYLE
FROM A HOUSE AT HERCULANEUM


DEtAIL, THIRD STYLE
golden chains from which swung masks and cups,all were depicted with a lightness of touch and elegance which marks the style with a peculiar distinction.
It was during the later years of this style that the rectangular lines which had previously bounded the wall-panels first show indications of becoming curved and winding, foreshadowing the freer treatment of the style which was to follow. Another element in which the third style opened the way for that which succeeded, was in its increas1 ng depiction of architecture. Small painted pediments were raised upon the delicate painted columns; porticos seemed to jut from the wall; windows opened on distant views of fantastic landscapes. (This imitation of architecture, however, though it began within the limits of the third style, was not fully developed until the fourth style succeeded to it.) Figures, too, assumed greater importance, and were painted with inimitable airiness and vivacity. Nymphs floated in diaphanous drapery against solid backgrounds of deep color; servants were seen entering through half open doors or descending stairs bearing water jars and vases filled with fruit. Fauns and bacchantes danced
endless sarabands under light porticos in the friezes. The composition was so unfailingly ingenious, and the obvious defects were so cleverly masked that in spite of its growing bizarre quality the later paintings in this third style rival in effectiveness the more restrained work which had preceded.

The fourth and last style may be said to date from the year $63 \mathrm{~A} . \mathrm{D}$. to the destruction of the city. Though naturally the style of which the most examples remain, because, as has been said, many of the houses were wrecked by an earthquake in the year 63, and were rebuilt and redecorated in the current mode,



DECORATION IN THE THIRD STYLE
HOUSE OF EPIDIUS SABINUS, POMPEII
it is far inferior in artistic quality to the preceding style. The decoration became overcharged; the rectangular panels were bordered by arabesques, the colors became livelier, and the ornamentation, while more elaborate, was less restrained and delicate than that of the previous mode. As a whole, the effect, though decorative, was somewhat pompous and
theatrical. Canopies and curtains were painted on the walls, the frail columns or candelabra were used too freely, and the fantastic painted architecture outgrew the limits of sanity.

The plates illustrating this article are reproduced orthochromatically, to show relative color values, from the colored drawings by Herr A. Sikkard. S. F. N.


# THE DECORATIVE TERRA COTTAS OF THE DELLA ROBBIAS 

THE use of glazed terra-cotta for architectural ornamentation is attended with many embarrassments. To the technical difficulties of securing satisfactory colors, and glazes of proper texture as well as permanence, are added the artistic difficulties of harmonizing the material with its surroundings. This has, without doubt, stood in the way of its more general use, for it has many advantages to recommend it, and there can be no question of its appropriateness for architectural work both on the exterior and interior of buildings. The questions which arise in regard to its use relate merely to the details of its design and production, and the fitness for the particular purpose or place to which it is to be applied. The use of color in figure sculpture and its employment in purely architectural decoration upon the exterior of buildings have for years furnished subjects


NATIONALMUSEUM
FLORENCE
ANDREADELLAROBBIA


Andrea dellarobbia
for spirited discussion, and an agreement between the opposing factions appears to be now as remote as ever. From the time of the Greeks to the present there has, however, been but one important attempt to apply color to sculpture, - that of the Della Robbias in the fifteenth century ; though for interior decoration colored tiles with a vitrified enamel have been used in Europe since their introduction by the Saracens, and glazed earthenware was made by the Babylonians, Egyptians and Persians. The use of color on the exterior of buildings has not been infrequent, but in this field again the work of the Della Robbia school occupies a prominent and important place.

The work of this school begins with its founder, Luca della Robbia, who was born in Florence in 1400. After serving his apprenticeship as a goldsmith, he at first devoted himself to work in bronze


POPPI PALACE
CASENTINO
ATTRIBUTED TO GIOVANNI DELLAROBBIA
and marble, and with such enthusiasm that, as Vasari assures us, he forgot to eat or sleep, and spent the day in drawing and the night in modeling, careless of cold and hunger. The earliest work which can with certainty be attributed to him is the set of ten bas-reliefs for the organ gallery in the Cathedral of Florence, for which he was given the commission in 143r. At this time he had already reached the height of his powers. For the following eight or nine years he continued to work upon the reliefs for the organ gallery, and in 1437 was entrusted with the execution of five bas-reliefs for the base of Giotto's tower, and in 1446 with the bronze doors to the sacristy of the cathedral which had originally been assigned to Donatello.

From these important works it will be seen that Luca had already established his fame as a sculptor before undertaking the work with which his name is more particularly associated. His fertile genius, however, sought for a new means of expression which, less costly and less tedious to work than marble or bronze, should make it easier for him to give expression to his lively invention and sure technique. In his search he dis-
covered a medium exactly suited to his wants. Vasari intimates that Luca della Robbia was the first to apply a glaze of enamel to pottery. This is a mistake. Majolica had long been manufactured in Italy. There seems little doubt, however, that Luca was the first to apply enamel to works of sculpture in terracotta, thus giving the clay a beautiful transparency and brightness, and at the same time rendering it durable enough to resist centuries of exposure to the air.

The first examples of Luca's work in glazed terra-cotta to which a definite date can be given are the reliefs representing the Resurrection and the Ascension, over the sacristy doors in the Cathedral of Florence, executed respectively in 1443 and 1446 , though there can be little doubt, judging by internal evidence, that these are later than many other works to which no date has been definitely assigned. How long he had labored over his new invention, therefore, and how many times he failed in his experiments we cannot know; but that his success was in 1443 complete may be judged not only from these works for the cathedral themselves but also from the fact that Luca ventured to place them in so important a position.


CEPPO HOSPITAL
PISTOJA
GIOVANNI DELLA ROBBIA

The new art seems to have become immediately popular with the Florentines, and Luca was called upon to adorn one building after another. Tombs, medallions, lunettes, friezes, and even isolated figures in full relief were fashioned by Luca, and in endless variety. In all this wonderful series no two are precisely alike. It was he who invented the fruit and flower frameworks that were to become such characteristic features of the Della Robbia ware; but his interest was centered rather upon

the figures themselves than upon their accessories, and the main development of the architectural and decorative details of Della Robbia work began under Andrea della Robbia and his successors.

Andrea della Robbia, the nephew and pupil of Luca, was born thirty-five years later than the uncle with whom his name is inseparably linked. During ninety years he led the same quiet life and worked with the same devotion to his chosen art, which grew in everincreasing popularity. His works are


NATIONAL MUSEUM
florence
attributed to andrea della robbia
to be found not only in every part of Tuscany but amongst all the cities and convents of Umbria and Romagna. He availed himself of all the possibilities of the process which Luca had bequeathed to him. In his hands glazed and tinted terra-cotta work advanced almost to the rank of painting, and he produced reliefs which in richness and complexity are not undeserving to rank as pictures. This development kept pace with the change in artistic and religious thought going on all over Italy. The simplicity and the great nobility of sentiment


NATIONAL MUSEUM
FLORENCE
SCHOOL OF THE DELLA ROBBIA

which we find in the work of Luca no longer existed in Andrea's day ; but, on the other hand, Andrea's art was more profoundly and exclusively religious. As compared with his uncle, Andrea was less inspired and less natural in his conceptions, and did not carry to the same degree of perfection either the art of modeling, glazing or coloring. Nevertheless, if we may assign to him the work with which he is credited, Andrea may be said to have surpassed his uncle in rendering grace and charm and the milder virtues, and many of the more purely decorative and architectural works of the school are either by him or suggested by his examples.

Andrea had seven sons, six of whom were brought up as sculptors and assisted in the work of their father. No one of this generation can, however, be ranked with Luca or Andrea. The work of these brothers shows great inequality. Some examples still retain much of Andrea's delicacy and refinement and show a strong impress of his influence, while others are pretentious, with
frames overcrowded with diminutive figures, marred by careless workmanship, inferiority of style, and a mixture of pictorial and sculptural design.

Giovanni, born in 1469 , is probably the best known of the sons of Andrea. During a great part of his life he worked as assistant to his father, and in many cases the enameled sculpture of the two cannot be distinguished. Some of his independent works are of great merit, especially the earlier ones; but during the latter part of his life his reliefs deteriorated in style, owing mainly to the universal decadence of the time. The lavabo at Sta. Maria Novella is one of Giovanni's earlier works and plainly shows the influence of his father. The authorship of the polychromatic frieze of the Ceppo Hospita at Pistoja is still a puzzle and has been attributed to almost every member of the school. Professor Marquand, one of the later authorities, asserts without hesitation that the circular medallions in the spandrels below the frieze are by Giovanni, but questions the attribution to him of the frieze. william w. Eastman.


CHURCH OF THE ANGELS LA VERNA
ANDREA DELLA ROBBIA


## "Puritan'' Enameled-Iron Bath



The "Puritan" has a 3 -inch roll-rim. The bath sets into the floor 2 inches and rests on a flange cast on the bath. Height from floor to top, 18 inches (4 inches lower than any other bath). It eliminates fouling space under the bath and dispenses with unsightly legs. It is the most convenient bath to get in or out of.
Furnished with any style of fittings. Quality guaranteed. The price is reasonable.

Plate $533-E$
Dalton-Ingersoll Company
$E S T A B L I S H E D \quad I 847$
I6g TO I75 HIGH STREET, BOSTON, MASSACHUSETTS

## CHURCH BUILDING

A STUDY OF THE PRINCIPLES OF ARCHITECTURE IN THEIR RELATION TO THE CHURCH

BY<br>RALPH ADAMS CRAM



TABLE OF CONTENTS
CHAP. I. Introduction. CHAP. II. The Country Church. CHAP. III. The Village Church. CHAP. IV. The City Church. CHAP. V. The Chancel and its Fittings. CHAP. VI. Chapels, Baptistries and Sacristies. CHAP. VII. Decoration and Stained Glass. CHAP. VIII. The Altar. CHAP. IX. The Cathedral. CHAP. X. Conclusion. 132 Illustrations. 227 Pages. Large Octavo, Cloth, Gold Lettering, Gilt Top. Price, $\$ 2.50$ net, $\$ 2.70$ postpaid.

## BATES $\mathcal{E}$ GUILD COMPANY

 42 CHAUNCY STREET, BOSTON, MASS.

Geo. W. Maher, Architect, Chicago.

## Folsom New Model

 ( chance of injury to life or to the property it protects. The only perfect device for this purpose. It is made in various forms for old and new roofs, of slate, shingle, tile, or metal. Full information on application.THREE HISTORIC BUILDINGS.
Faneuil Hall,
Old South Church, King's Chapel, Boston,

Are Fitted with This Snow Guard.

Folsom Snow Guard Co., Boston, Mass.

## Use

## Dexter $\mathfrak{J B r o t h e r s}$ '

 English $\mathfrak{w b i n g l e ~} \mathfrak{W t a i n s}$ON ALL SHINGLED SURFACES interior stains a specialty
Send for sample boards and color plates to

## Dexter $\mathfrak{J B r o t b e r s}$,

 103=105=107 Jbroad $\mathfrak{F t r e e t , ~ J B o s t o n , ~ I I S a g g . ~}$

## Every three feet of

The best SASH CORD Made

IS NOW MARKED

## SILVER LAKE "A"

Architects can tell at a glance whether their specifications have been followed. Former substitution of inferior cord is now impossible.


Works. Erected 1888.

## Supremis Floor Finish

Shipoleum for Standing Finish,
White Enamelite $\underset{\substack{\text { An Enamel Paint for Colonial } \\ \text { Interios. }}}{\substack{\text { En }}}$
Send for our 'Suggestions", on Wood Finishing and our booklet, "The Treatment of Floors." You will find them of service.

## FITCHSASHLOCKS



Adjust the Sashes, prevent Rattle and securely Lock the Window
"THE PERFECT WVINDOW FASTENER"
SEND FOR CATALOGUE AND WORKING MODEL THE W. \& E. T. FITCH CO., NEW HAVEN, CONN.


## The Duplex I Beam Hanger

MADE OUT OF MALLEABLE IRON
Is without a doubt the most practical and economical method of framing joists to I beams.

The hanger is made with a rib in the bottom so as to tie the joist to the hanger and thereby to the I beam. All our hangers are of uniform height, and a $3 / 4$ inch hole punched 6 inches from the bottom of the beam will fit all our hangers.

Mr. F. E. Kidder, C.E., Ph.D., the author of numerous works on construction, endorses the hangers. Write for catalog.

## THE DUPLEX HANGER CO.

CLEVELAND, 0HIO.
NEW ENGLAND BOLT AND NUT WORKS, Agents for New England.

Full Stock of All Sizes on hand.


## Fireplace Mantels <br> $\$ 12.00$ and up.

## Made of Ornamental Brick

in Red, Cream, Buff, Pink, Brown and Gray.
Our Sketch Book shows 59 designs of these artistic, durable and inexpensive mantels. Send for it. Our Moulded Brick Catalogue contains many suggestions for outside brickwork. Send for it.

## Philadelphia \& Boston Face Brick Co. <br> P.o. Box 8929. <br> Boston, Mass.

IF YOU SPECIFY


You can tell at a glance that no other cord is substituted. It is guaranteed free from waste and imperfections of braid.

SEND FOR SAMPLES.

## SAMSON CORDACE WORKS, BOSTON.



# Ready Fanuary I <br> ＂American Gardens＂ 

Illustrated from Photographs Edited by Guy Lowell，Architect

## \％

THE illustrations in this book will prove a delightful astonishment to those who do not know what America has accomplished in garden making during the last ten years．

$$
\begin{array}{lll}
\circ & \text { 品 } & \text { 品 }
\end{array}
$$

THEY show that，through the necessary use of native plants and surroundings，America has evolved a garden－type of her own－ and one not inferior in beauty to that of Italy or England．As example of what can be here achieved，and how existing conditions may be utilized，the pictures will therefore prove rich sources of suggestion．

THE book will contain reproductions of over two hundred specially made photographs，beautifully illustrating in detail more than fifty of the best American private gardens，small and large，old （Colonial）and new，the majority of them being from the designs of our foremost architects．Accompanying sketch－plans will show their arrangements．
$\begin{array}{lll}\text { 吅 } & \text { 哭品 } & \text { 品 }\end{array}$
THE introduction，by Mr．Guy Lowell，architect and lecturer on landscape architecture at the Massachusetts Institute of Tech－ nology，will treat specifically of garden designing in America．

哭品

$$
\text { Price } \$ 7.50 \text { Net }
$$

吅

## Bates \＆Guild Company Publishers

```
42 CHAUNCY STREET
    BOSTON,MASS.
```


## THE

## ARCHITECTURAL REVIEW <br> for 1902

$T$HE GENERAL POLICr of the Review is so firmly established and so well known to its readers, that it is sufficient to announce its continuance with such changes in detail as may result from constant effort towards improvement. The Editorial Page which has always been authoritative, the department of "Current Periodicals" acknowledged to be the best critique of current architectural work, and the insert plates, reproducing for the most part scale drawings from the best offices, will be features of all regular numbers.

$T$HE LEADING ARTICLES, always a strong feature, will be well up to the established standard of interest, as the subjects and writers secured for the earlier issues indicate. Mr. C. H. Blackall will write upon the Esthetics of Architectural Construction, considering the principles which underlie constructive design, and illustrating the subject by comparative examples of historic and modern work. "English Farm Buildings," by Mr. R. Clipston Sturgis, will be illustrated with photographs by the author ; Mr. Myron Hunt will write upon the planning and design of Suburban Apartment Houses; HalfTimber Work, and its use in this country, with illustrations of construction methods will be the subject of an article by Mr. Lawrence Visscher Boyd.

GARDEN DESIGN is a subject to which the Review has always given considerable attention, and it now offers a series of short articles, descriptive of the work in this line that Americans are accomplishing, illustrated by photographs and drawings.

$T$HE BEST ENGLISH WORK does not, as a rule, find its way into the architectural papers of that country; arrangements are nearly completed for a quarterly correspondence which will keep Review readers informed upon the very best work of English architects. The illustrations will be from original drawings and photographs not published elsewhere.

DOMESTIC ARCHITECTURE will receive more attention than heretofore and interesting examples will be illustrated by the grouping of a number of photographs on one page, as several times done in recent issues. Frequently, these pages will supplement insert plates, giving that most useful combination of scale drawings and photographs of the executed work.

$\tau$HE ONE MARKED INNOVATION of the year will be the publication of from three to four large numbers devoted exclusively to special classes of buildings. So far as it is possible to make them, these numbers will be complete and exhaustive treatises, edited with the assistance of specialists who are acknowledged authorities. The price at which these numbers will be sold to non-subscribers will make a regular subscription the cheaper way of securing them. On the opposite page is a description of the first one. As this will be published in January, subscriptions to start with it should be sent in at once.

Subscription \$5.00, invariably in advance

## B A T ES \& G U I L D C O M PAN Y <br> 42 CHAUNCY STREET, BOSTON

## THE

## SPECIAL LIBRARY NUMBER January

$\tau$HE FIRST NUMBER of the year will also be the first of the series of special numbers. It is being prepared with the assistance of Mr. Charles C. Soule, an acknowledged authority upon library planning, author of the articles on Libraries in Sturgis' Encyclopædia of Architecture, and of the widely quoted article: "Points of Agreement Among Librarians as to Library Architecture," which was published in the Brochure Series for November, 1897. Mr. Soule will endeavor to present in this number the essential requirements of plan, for the economic administration of different classes of libraries.

SPECIAL ARTICLES treating in detail of certain features of library buildings and of their fittings, will be contributed by writers who are fitted by practical experience and special study to write authoritatively.

$T$HE ILLUSTRATIONS, of which there will be a great many, will consist of photographs and plans of recently completed buildings; drawings of libraries now in course of construction ; and a selection of designs submitted in important competitions.

$\tau$he special Numbers of The Review will be made as complete and up-to-date as possible, with a view to making them absolutely necessary to every progressive architect. Owing to the extra size of these numbers and their heavy cost, only a moderate edition will be printed to carry in stock. Therefore, we call particular attention to

## The Price of Special Numbers

$R$EGULAR SUBSCRIBERS will receive the numbers published during their subscription without extra expense, but extra copies will cost them the same as non-subscribers. In future we shall not date subscriptions back, and back numbers can be obtained, if at all, only at single number prices.

S
INGLE COPIES of special numbers will be $\$ 2.00$ each after publication. Up to the day of going to press, which in the case of the library number is January 10 , orders accompanied by remittance, will be received at $\$ 1.00$ each. This difference in price is made as an inducement to order at once, so that we may be able to gauge our edition for immediate delivery. No exceptions will be made to this rule.

$T$HE ADV ANTAGE that regular subscribers have, is in getting at least three and probably four large special numbers well worth $\$ 2.00$ each, with the remaining eight or nine regular numbers, for only $\$ 5.00$. You may not be reminded of this again until too late. To be on the safe side send in your order now ; $\$ 5.00$ if for a subscription, $\$ 1.00$ if for the Special Library Number.
\$1.00 before January 10; \$2.00 after January 10
B ATES\& GUILD COMPANY
42 CHAUNCY STREET, BOSTON


MEMORIAL TABLETS bronze and brass
GRILLE WORK bronze, brass and iron
MOSAICS
marble and tile
Murdock Parlor Grate Co.
156 BOYLSTON ST., BOSTON
Works: Middleboro, Mass.

## ARCHITECTURAL STUDENTS

should inform themselves about our NEW EDITION of

## VI G N O LA

The Five Orders of Architecture From the French of PIERRE ESQUIE french government architect

THIS new edition is the latest, most complete and most authoritative work upon the Orders and Elements of Architecture, and is now specified for use in the École des Beaux-Arts, Paris.
The old plates have been entirely redrawn, new ones added to include the Greek Orders, and the explanations of the plates translated into clear English, with many notes.
The book contains 78 plates, , $\mathbf{x} 12$ inches; mounted on cloth guards, bound in cloth.

## PRICE, \$5.00

Bates \& Guild Company, Pubs. 42 Chauncy St., Boston, Mass.

## 

## SEND FOR OUR CATALOGUE OF

 FLY SCREENSArisisic Patteras, Finest workmanship Delivered anywhere at Reasonable Prices Finely equipped Factory Open all the year THE A. J. PHILLIPS CO., FENTON, MICH.
 MADE OF STEEL GALVANIZED, $\frac{1}{16}{ }^{\prime \prime}$ THICK, THIN ENOUGH FOR FINE JOINT, THE BEST TIE MADE, CAN BE BENT TO ANY SHAPE, INEXPENSIVE, SAMPLE FREE, HAS ALL THE GOOD POINTS. MFD. BY J. D. JOHNSTON, NEWPORT, R.I,

## ABSOLUTELY

WHITE TERRA COTTA
of the very best quality. A most appropriate material
for handsome fronts, or libraries in Classic or Renais-
sance style. Limestone and Other Shades made to
order. All goods vitrified to withstand elements.
WHITE BRICK \& TERRA COTTA CO. 156 Fifth Avenue, New York City.

## THRESHOLDS

Carpeted thresholds soon look ragged. Varnished ones stay varnished but a short time Red Slate thresholds are ideal thresholds. They never need carpeting or varnishing; never look ragged or unsightly, but, on the other hand, always look bright and fresh and handsome. Write us.
Algonquin Red Slate Co., Worcester, Mass.
Thresholds, Floor Tiles, Hearths, Treads, Roofing Slates, Roofing Cement, Paint.


## A New Era in

## Screens \& Awnings

Just think this over!
Do you want Solid Comfort, No Flies, No Sun, Ideal Ventilation, Clean Windows? Get the
"Phenix" Combined Window Screen and Awning.
Send for Catalogue.
PHENIX MFG. CO.
028 Centre St.,
MILWAUKEE, WIS.


## DON'T FORGET

that

## ARTER'S

 LIQUIDINDIA
INKS
are indorsed by Artists, Architects, and Draughtsmen as Architects,
THE BEST.
Postal for Color Card and Circular THE CARTER'S INK CO. BOSTON, MASS

## PARRUET

PLAIN OR ORNGITIENTHL Thick or Thin

We have representatives and stocks of floors in the leading cities. Write for leading cities. Write for
Prices and Book of Designs. FLOOMS THE INTERIOR HIRRDWOOD CO., Mllanifs. INDIANAPOLIS, IND.

## Architects of

SCBHOOLS, HOSPITALS, ASYLUMS AND OTHER INSTITUTIONAL BUILDINGS, LIBRARIES, ALL PUBLIC BUILDINGS, STORES, OFFICE BUILDINGS, RAILROAD STATIONS, LODGE BUILDINGS, ETC., ETC.,
Are invited to investigate the merits of our sectional glass cluster reflectors for economically and brilliantly lighting all rooms of large size. Send for a copy of our new catalogue if you have not already received it. It is a cisely as possible, information about all kinds of reflectors.
I. P. FRINK, 551 PEARL ST., NEW YORK


## HALF ENOUGH WATER

Half enough water is quite enough for some people, but most people want water every day. If

## RIDER OR ERICSSON HOT AIR PUMPS

are used you can have water every day in the year, and your cook or stable boy is the only engineer needed. 25,000 in daily use. Catalogue on application to nearest store.


Rider-Ericsson Engine Co.


[^0]:    * Note. - The illustrations of this article are taken from an excellent collection of plates recently published by Bruno Hessling, New York, and entitled, "Dentsche Fachwerkbauten der Renaissance."

[^1]:    * The illustrations shown herewith comprise the second prize set of photographs submitted in "Brochure Series Competition P,' by Mr. Anthony P. Valentine, Jr., of Philadelphia.

[^2]:    NEW MOSQUE (DJAMA EL DJEDID)

[^3]:    * The Gargoyles of Notre Dame were illustrated in the June, 1goo, issue of this Series.

[^4]:    * Brochure Series for April, 1900 .

[^5]:    *" Old Cottages and Farm Houses in Kent and Sussex:" by W. G. Davie and E. G. Dawber. London: B. T. Batsford. New York: Longmans, Green \& Co. 1900.

[^6]:    C. Howard Walker.

[^7]:    Chateau of pierrefonds

[^8]:    *To be followed by an article on the Norman architecture of Sicily.

[^9]:    "GYMNASIUM"

[^10]:    * See previous issue for an article on the Greco-Roman Architecture of Sicily.

[^11]:    * Note. - See Brochure Series 1895, No. 3; 1898, No. I; and 1900, No. 3.
    

    CHURCH OF LA MARTORANA PALERMO

[^12]:    "TOPICAL ARCHITECTURE", in some ways is like, but is an improvement on, Raguenet's well known serial "Matériaux et Documents $d$ 'Architecture et de Sculpture," and so is especially suitable for draughtsmen and students. the numbers already issued illustrate the following topics:-

