

PRICE 15 CENTS.

251 Miss I H Lehman
1100 12th st Sep 98

MARCH 19, 1898.

THE
AMERICAN ARCHITECT
AND BUILDING NEWS

VOL. LIX.

* REGULAR EDITION *

NO. 1160.



ARCHITECTURE

ENGINEERING

DECORATION

211 TREMONT ST.

CONSTRUCTION

BOSTON, MASS.

CONTENTS.

EDITORIAL SUMMARY.
THE EVOLUTION OF DECORATIVE MOTIVES.—III.
"WORKS OF ART" IN THE TARIFF.
BOOKS AND PAPERS.
COMMUNICATIONS.
NOTES AND CLIPPINGS.

ILLUSTRATIONS.

ENTRANCE TO THE CORCORAN ART GALLERY, WASHINGTON, D. C.
[Gelatine Print, issued with the International and Imperial Editions only.]
COMPETITIVE DESIGN FOR PUBLIC LIBRARY, NEWARK, N. J.
SIDE ELEVATION AND SECTION OF THE SAME.

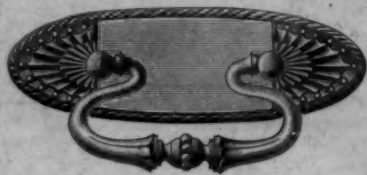
COMPETITIVE DESIGN FOR THE PUBLIC LIBRARY, NEWARK, N. J.
DESIGN FOR THE COSTER MAUSOLEUM.
COMPETITIVE DESIGN FOR TOWN-HALL, COLCHESTER, ENG.
OLD GATEWAY OF THE ABBAYE SAINT PERE, AUXERRE, FRANCE.

Additional Illustrations in the International Edition.

CORCORAN ART GALLERY, WASHINGTON, D. C.
[Gelatine Print.]
ONE OF THE SCULPTURE GALLERIES IN THE SAME BUILDING.
[Gelatine Print.]
DESIGN FOR THE ABBATOIR, LEEDS, ENG.
THE CORRIDOR: NORTHAMPTON INSTITUTE, CLERKENWELL, ENG.

Generally

the matter of hardware trimmings is left to the architect. He can please his clients in no better way than by selecting Sargent's Easy Spring Locks and Artistic Hardware. The locks give satisfaction for generations; designs are beautiful in proportion and properly made. It pays to use Sargent's Hardware, which costs but little more than the cheap, trashy stuff so often used.



SARGENT & COMPANY,
Makers of Fine Locks and Artistic Hardware,
New Haven, Conn., New York, Philadelphia and Boston.

Our galvanized sheets bear this stencil



We make only one quality and use no other brand as a trade mark

Apollo Iron and Steel Company
Vandergrift Building
Pittsburgh



80-Page Illustrated Catalogue of over 250 Designs of Superior WEATHER VANES, TOWER ORNAMENTS, CHURCH CROSSES, FINIALS, Etc., Etc. Mailed to any address for 2-cent stamp—half the postage. T. W. JONES, Manufacturer, 170-172 FRONT ST., New York.

C. A. CUNNINGHAM,
200 Franklin St., Boston, Mass.
Bronze Hardware,
Night Latches, etc.
SECURITY LOCKS OF ALL KINDS.



[For Classified List see Cover 3.]

Alphabetical List of Advertisers.

A. Aeschlimann & Pellarin.....1 Alsen's Cement Works.....11 American Boiler Co.....12 American Luxfer Prism Co.....13 American Mason Safety Tread Co.....14 Apollo Iron and Steel Co.....(Cov.) 2 Armstrong & Co., Maitland.....1 Atlas Cement Co.....11	F. Farguhar's Sons, John.....viii Fisher & Co., Robert O.....11 Fitch Co., The W. & E. T.....11 Flexible Door & Shutter Co.....(Cov.) 4 Flynt Building & Construction Co.....1	L. Lawrence Scientific School.....1 Lord & Burnham Co.....11 Lowinson, Oscar.....11 Ludlow Saylor Wire Co.....11	R. Randolph & Clowes.....xiii Raritan Hollow & Porous Brick Co.....11 Rider-Ericsson Engine Co.....11
B. Barron, Boyle & Co.....(Cov.) 4 Barnum Iron Works.....12 Berlin Iron Bridge Co.....12 Bickelhaupt, G.....12 Bommer Brothers.....12 Bridgeport Chain Co., The.....12 Brooks, T. H. & Co.....11 Butcher Polish Co.....11	G. Globe Ventilator Co.....(Cov.) 3 Gorton & Lidgerwood Co.....11 Guastavino Co., R.....11 Gurney Heater Mfg. Co.....(Cov.) 4	M. Maitland Armstrong & Co.....1 Maurer & Son, Henry.....11 Merchant & Co.....11 Mitchell Furniture Co., The Robt.....11 Montague, Charles D.....11 Moore & Co., Benjamin.....11 Moore & Wyman.....11 Morse, Williams & Co.....11 Mott Iron Works, J. L.....11	S. Samson Cordage Works.....viii Sargent & Co.....(Cov.) 2 Scribner's Sons, Charles.....11 Smith & Co., Edward.....11 Smith Co., H. B.....11 Spaulding Print Paper Co.....11 Stanley Works, The.....11 Stearns, Miss.....11 Storm Mfg. Co.....11 Stover Manufacturing Co.....11 Stowell Mfg. Co.....11
C. Cabot, E.....11 Central Fireproofing Co.....11 Chicago Terra-Cotta Roofing & Siding Tile Co.....11 Chrome Steel Works.....11 Clark, Bunnett & Co.....(Cov.) 4 Clinton Wire Cloth Co.....11 Colt & Co., J. B.....11 Columbia College.....11 Continental Insurance Co.....11 Cordell, F. E.....11 Cunningham, C. A.....(Cov.) 2 Custer Mfg. Co.....11	H. Haberstroh & Son, L.....viii Hayes, Geo.....viii Heliotype Printing Co.....viii Hickings & Co.....viii Hydraulic-Press Brick Co.....viii	N. Nat'l Sheet Metal Roofing Co.....11 National Wood Mfg. Co.....11 Neuchatel Asphalt Co.....11 New England Felt Roofing Works.....11 N. J. Steel & Iron Co.....(Cov.) 4 New Jersey Wire Cloth Co.....11 N. Y. and Rosendale Cement Co. (Cov.) 4 New York Belting & Packing Co.....11 New York Mastle Works.....11 New York Metal Ceiling Co.....11 Northrop, H. S.....11 Northwestern Terra-Cotta Co.....11	T. Taylor Co., N. & G.....11 Taylor, J. W.....11 The Sieben Trap & Specialty Co.....11 Thiele, E.....11 Thorn, J. S. Co.....11 Troy Laundry Machinery Co.....(Cov.) 4
D. Dauby Iron Works.....11 Davis, F. L.....11 Deane, E. Eldon.....11 Devos & Co., F. W.....viii Dixon Crucible Co., Jos.....vii Ducey, Henry D.....11	I. Ideal Manufacturing Co.....xiii Interior Hardware Co.....11 International Correspondence Schools, The.....11	O. Okonite Co. (Ltd.).....vii Otis Bros. & Co.....11	U. Union Akron Cement Co.....11 U. S. Mineral Wool Co.....11
E. Eggleston, Rufus E.....11 Expanded Metal Co.....11	J. Jackson Architectural Iron Works.....11 Jackson & Co., Wm. H.....(Cov.) 4 Jenkins Bros.....11 Johns, H. W., Mfg. Co.....viii Jones, T. W.....(Cov.) 2	P. Perry, R. W.....11 Passaic Rolling Mill Co.....11 Perth Amboy Terra-Cotta Co.....11 Pioneer Fireproof Construction Co.....11 Pitt, W. R.....11 Pittsburgh Terra-Cotta Lumber Co.....11	V. Valle & Young.....(Cov.) 4 Van Kannel Revolving Door Co.....11
	K. Keasbey & Mattison Co.....11	Q. Queen Cash Balance Co.....11	W. Waldo Bros.....11 Warner Elevator Co.....11 Warren Chemical & Mfg. Co.....11 Webster & Co., Warren.....11 Westinghouse Machine Co.....11 Whitaker Machine Co.....11 Williams, John.....11 Wilson, Jas. G.....(Cov.) 4 Worthington, Henry B.....11

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. LIX.

Copyright, 1898, by the AMERICAN ARCHITECT AND BUILDING NEWS COMPANY, Boston, Mass.

No. 1160.

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

MARCH 19, 1898.



SUMMARY:—

The State Supreme Court refuses to enjoin the Harrisburg Capitol Commissioners.—“Works of Art” in the Tariff.—The Tombs of Gods, Egyptian and other.—A New Device for Teaching Foreign Languages.—Liquefied Air.—Sewage Purification at Oswestry, England.—A Narrow-gauge Railway in Russia.—Electrical Transmission in Mexico.	89
THE EVOLUTION OF DECORATIVE MOTIVES.—III.	91
“WORKS OF ART” IN THE TARIFF.	94
BOOKS AND PAPERS.	94

ILLUSTRATIONS:—

Entrance to the Corcoran Art Gallery, Washington, D. C.—Competitive Design for Public Library, Newark, N. J.—Side Elevation and Section of the Same.—Competitive Design for the Public Library, Newark, N. J.—Design for the Coster Mausoleum.	
Competitive Design for Town-hall, Colchester, Eng.—Old Gateway of the Abbaye Saint Pere, Auxerre, France.	
Additional: Corcoran Art Gallery, Washington, D. C.—One of the Sculpture Galleries in the Same Building.—Design for the Abbatior, Leeds, Eng.—The Corridor: Northampton Institute, Clerkenwell, Eng.	95

COMMUNICATION:—

“The Lower Animals as Designers of Ornament.”	96
NOTES AND CLIPPINGS	96

THE Supreme Court of Pennsylvania has sustained the action of the County Court, in refusing to issue an injunction restraining the Capitol Commissioners from awarding contracts for the new Capitol Building at Harrisburg, so that nothing now seems to stand in the way of the prosecution of the scheme. The Philadelphia Press, while acknowledging that the law no longer stands in the way, suggests that the voters are still able, if they make up their minds in time, to prevent a commonwealth which is endeavoring to reduce its expenditure for school purposes from entering upon building-operations to the cost of which no one has pretended to set a limit; and it recalls the examples of the Philadelphia City Building, and the Albany Capitol, as a warning. Unfortunately for the taxpayers of Pennsylvania, it is not the editors of newspapers who control nominations, but the professional politicians, and, as nothing is more nourishing to these gentlemen than extensive building-operations on the public account, it is extremely improbable that any measure could be imposed upon the Pennsylvania Legislature providing for the abandonment of any plan for the distribution of public money which has been sanctioned by the courts.

IT will be remembered that a discussion took place some weeks ago before the Board of General Appraisers, in New York, over the question whether a certain altar, adorned with sculpture, was a “work of art,” or simply “dressed stone,” the payment of a heavy duty depending upon the decision. Several experts, Mr. St. Gaudens among them, testified that the altar was not a work of art, because the sculpture on it did not show evidences of genius; and the Appraisers took this view; but this decision has now been reversed by the United States Court in New Haven, the judge holding that it was, within the meaning of the statute, “a work of art, intended to be presented to a religious society,” and, therefore, not dutiable. On the whole, we are glad that the ruling of the Appraisers has been reversed; not that we would welcome dubious art to this country, but because the practice of inviting artists to judge the work of other artists is one which requires at all times extreme discretion, and is capable of being perverted in such a way as to do much more harm to American taste than would result from the setting-up of a few feeble altars or clumsy monuments. Of course, so far as cities are concerned, it is perfectly proper that a municipality should delegate to persons in whom it has confidence the duty of supervising its selection of works of art; but this is a very different matter from an endeavor to establish an official standard; and, while we are quite willing to see any public body decide, either by itself or by proxy, what will suit its own taste, we hope that the day is far distant when our Custom-house will be the arbiter of the artistic quality of a work of painting or sculpture.

WE feel always a little mistrust of announcements relating to discoveries made by “scientists,” having long observed that disrespect to the English language is apt to be associated with disregard of exact truth; and it is, therefore, with a grain of salt that we accept the information that “scientists” in England are “excited” over the discovery, at Luxor, in Egypt, of the “tomb of Osiris.” Whether Osiris was still in it, and was known by having the head of a hawk on a man’s body, or whether the tomb was identified by the testimony of the Bedouins of the neighborhood, or by inscriptions in modern characters upon it, we are not informed, but the *Pall Mall Gazette* is quite sure that it is the tomb of some divine personage; and as the explorer who discovered it has already ascertained that two tombs near by are those of Seth and Horus, the process of elimination seems to show that the last one must, logically, be that of Osiris. We trust that the features of these divine tombs are sufficiently well preserved to furnish a standard by which the sepulchres of other gods and goddesses can be recognized. We have an idea that a company is, or was, in process of formation to exhibit, at the next Paris Exposition, the mummy of Cleopatra, found, just at the right time, by an explorer of genius. The prospect of being able to view the mummy of Osiris, beak and all, side-by-side with that of Cleopatra, might, indeed, cause legitimate excitement among the “scientists”; but, equipped with a description of his tomb, and that of the Sun-god, Horus, for comparison, it seems as if an enterprising expedition, with plenty of capital behind it, might be able to secure, in time to make application for space in the Hygiene Department, the corpse of Jupiter, complete with thunderbolts; and, perhaps, those of Thetis, identified by her silver foot; and of Minerva, the genuineness of which might be attested beyond doubt by the extraordinary effect produced upon the explorer’s workmen by the Gorgon’s head upon her shield, which, of course, would also be exhibited, carefully veiled, together with the petrified bodies of the peasants who brought it to light.

THE principal of Swarthmore College, Pennsylvania, calls attention, in the Philadelphia *Public Ledger*, to the plan for teaching young people foreign languages, which was devised two years ago by Professor Mielle, of the Lycée of Tarbes, in Southern France, and which consists in arranging an exchange of letters between children of similar age in different countries, as well as between gentlemen and ladies who wish to avail themselves of the system. Application is made through certain large publishing-houses in Paris, where lists are kept of the applicants, and persons of similar age and tastes put in communication with each other. On the other side of the Atlantic the system has already become extremely popular, several thousand students already exchanging letters between France and England. In this country, it has been adopted at Vanderbilt University and at Swarthmore, and it is because of its excellent results at the latter that Dr. Magill wishes to have its advantages more widely known. Some thirty of his students send and receive letters regularly, and each letter received is read in class, exciting, naturally, an interest which is of the greatest value in teaching. The system is very simple. After the mutual introduction, each party to the correspondence writes a letter to the other in his own language. The reply to this must be written in the other party’s language, and the one receiving it corrects the mistakes and sends it back. The third letter is written again by each in his own language, and the letters alternate in this way, each writing first in his own language, and then in that of his correspondent. Dr. Magill has evidently been greatly pleased, not only with the value of the system as an aid to teaching, but with the moral effect of the interchange of thoughts between children of similar age and tastes across the sea. Not only, as he says, would such mutual understanding, if it could become general, do much to prevent international quarrels, but such a correspondence may often lead to a mutual esteem and regard between the parties to it which may be of great value. Although, as a rule, teachers would probably arrange for exchange of letters for classes of pupils, there seems to be no reason why individual students should not avail themselves of the system. Applications must be registered in Paris; those for children should be sent to MM. Armand Colin et Cie, 5 Rue de Mézières; of applications for older students and teachers,

those for gentlemen must be sent to M. Mouchet, care of Hachette et Cie, 79 Boulevard Saint-Germain, and those for ladies to Miss Williams, President of the Franco-English Guild of International Correspondence, 41 Rue Guy-Lussac.

MR. T. C. TRIPLER, of New York, has invented a process for liquefying air, which promises to be of great value. Every one interested in physics knows that, until within a few years, air had never been reduced to the liquid condition, and it was imagined by some persons that it possessed a quality which prevented it from assuming that condition. In 1893, Professor Dewar, of Edinburgh, made himself famous by producing and exhibiting air in the condition of a pale-blue liquid. Professor Dewar's process, which is now familiar to experimenters, consists in cooling the air by several stages. In the first stage, the evaporation of liquid carbonic-acid or ammonia is used to liquefy ethylene; then the liquid ethylene, the boiling-point of which is lower than that of carbonic-acid or ammonia, is made to cool, by its evaporation, another gas, of still lower boiling point; and so on until the air exposed to the influence of the evaporation is cooled to three hundred and twelve degrees Fahrenheit below zero. This is its boiling-point, and on reaching it condensation takes place, and the liquid air is formed. This process is slow, and the product costly, and Mr. Tripler's method, by substituting mechanical for chemical force, gives far greater economy. It will be remembered that in the ordinary ice-machine ammonia gas is compressed to liquid by an air-pump, and the liquid, after transmission to where its effect is wanted, is allowed to expand, by releasing the pressure, the effect of expansion being to chill to the freezing-point the water in contact with the receptacle containing the ammonia; and Mr. Tripler adopts a similar method for cooling air to the point of condensation. For this purpose three successive compressions and expansions are found necessary, and these are produced by a powerful engine, driving three pistons, which give, respectively, three hundred, six hundred and two thousand pounds' pressure to the square inch. In this way air, held in a tube, is compressed to a tension of two thousand pounds per square inch. As the compression develops great heat, the tube, with the air contained in it, is cooled by running-water. The air in the tube is then allowed to expand, by means of a valve, into a jacket surrounding the tube, while a fresh charge of compressed and cooled air is introduced into the latter. The expansion of the original charge chills the tube and its new contents, and the operation is then repeated. At the third repetition the charge of air in the tube is chilled to the point of condensation, and can be drawn off as a liquid. From this condition it returns very slowly to that of gas, and, even when poured out into a tumbler, it will not all evaporate for about half an hour. In the process of evaporation, the nitrogen, which is the more volatile constituent of air, disappears first, so that the liquid is soon mainly composed of oxygen. Naturally, industrial applications of so novel a substance are invented slowly, but there can be no doubt that they will become important. It is known that, in the Krupp establishment in Germany, liquid carbonic-acid was at one time used for chilling the inner portion of gun-castings; and liquid air is far more efficient than carbonic-acid, a small quantity, poured into a kettle of water, boiling vigorously over a fire, not only causing the water to freeze instantly into a solid mass, but producing the condensation and freezing of the moisture of the atmosphere on the outside of the kettle, so that the latter is immediately covered with thick hoar-frost, even on the underside, where it is exposed to the fire.

THE Mayor of the town of Oswestry, England, writes to the *London Standard* in relation to a system of sewage purification which has just been adopted there. It seems that the town has for several years been endeavoring to find a satisfactory plan of disposing of its sewage, which it had been forbidden to discharge into natural streams. A Commission was appointed, which came to the conclusion that a sewage-farm, with a system of settling-tanks, should be established; but as this would cost about a hundred thousand dollars, action was postponed; and the town engineer, after making a tour of sewage-farms, decided that filtering-tanks would be better than a sewage-farm. Still nothing was done, until, the health authorities insisting that the pollution of the river which flows through the town should cease, the town engineer suggested, as a temporary plan, that the sewage might be collected in reservoirs made with simple earthen embankments, and filtered

through cinders, collected from the town dump. A system of this primitive sort was installed, at a cost of about seventy-five hundred dollars, and, rather to the astonishment of every one, it worked admirably, and is to be made permanent. It ought, perhaps, to be observed that there is not, to American engineers, anything miraculous in this result. It has long been known here that a small amount of filtering material, if favorably disposed, so as to harbor purifying organisms in large numbers, will purify a great deal of sewage. In this country, gravel of a certain degree of coarseness has been used, but cinders would probably answer equally well, except that they would be less easily cleaned from an accumulation of sediment. The idea of using earth embankments, instead of a stone wall, for enclosing the settling-tanks, is certainly not a novel one; but Mr. Wynne, the engineer, is entitled at least to the credit of having solved his problem sensibly and economically.

A RAILWAY has just been completed in Russia which recalls some of the American roads, built to accommodate the traffic of alkali deserts, and, incidentally, to fill, at the expense of unwary investors, the pockets of the financiers who manage them. It seems that, on several occasions within the past half-century, the crops have failed in the northern provinces of Russia, and there has been much suffering in consequence, as it was impossible to get supplies through the winter snows to the starving people of the villages. In consequence of this, the Government has for some years been engaged in studying the problem of providing better communication between the northern coast and the rest of the country, without too great expense, and, as a result of its deliberations, a narrow-gauge road has been built, by a private company, but with the consent, and perhaps with the assistance, of the Government, connecting the system of railways centring at Moscow with Archangel, on the White Sea. The region through which the line passes is a dreary forest, and, although it is about four hundred miles long, it does not pass through a single town of importance, the stopping-places being merely "half-stations," spaced about thirty miles apart, where water can be obtained for the locomotives. Even at Archangel, which is an important place, the road presents little appearance of activity. The city is on the right bank of the River Dwina, while the railway follows the left bank; and, to avoid the cost of a bridge over the river, which is here nearly two miles wide, the terminus is fixed on the left bank, about ten miles from the town, to which passengers must make their way, by land and water, as best they can. It is expected, however, that the road will develop business, and, in course of time, it may be practicable to build a drawbridge over the Dwina. Meanwhile, great quantities of lumber can be brought from the forests, and shipped to the southern provinces, which are destitute of standing timber; and in summer freight can be brought by the White Sea to Archangel, and shipped to Moscow and the south, by the new route, much more cheaply than it can be carried by the way of the Baltic, and St. Petersburg or Riga.

A FINE example of the electric transmission of force is to be found in Mexico, where the cascade of Regla has been utilized to furnish some twelve hundred horse-power, which is transmitted to a distance of about fifteen miles, supplying several mines and factories. The hydraulic force is utilized by means of Pelton water-wheels, driving five triphase dynamos, each of four hundred horse-power, one of which is kept as a reserve, and two exciting dynamos. The tension of the current, as received from the dynamos, is seven hundred volts, but it is increased by transformation to ten thousand volts, for transmission. The conducting wires are of bare copper, about one-third of an inch in diameter, three being used. The loss in transmission to the end of the line is about ten per cent. The whole cost of the installation was about seven hundred thousand dollars, and power is furnished at the rate of two hundred and fifty dollars per horse-power per year, which gives a satisfactory return on the capital invested. M. de Arteaga, who furnishes to *Le Génie Civil* an interesting account of this plant, reminds his readers that Mexico has now a population of more than twelve millions, or about the same as that of Italy; that it possesses, in addition to a vast and fertile territory, immense water-power, which can be easily utilized, and is already being rapidly taken up. One of the Mexican cata-racts, that of Juanacatlan, is only second, on this continent, to that of Niagara, and a great deal of engineering work is in progress for making these resources available.

THE EVOLUTION OF DECORATIVE MOTIVES.¹—III.

SAVAGE DECORATION.

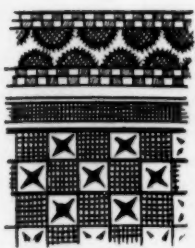


Fig. 16. Stamped Cloth, Sandwich Islands.

THE artistic quality of the ornament of many savage tribes is of a high order, giving evidence of a keen sense of decorative propriety and of a wise choice and proportioning of means to ends. In its treatment of scale and distribution and in the vigor and boldness of its execution it often surpasses the art of more civilized nations. It is usually lacking in the grace and subtlety of line and movement of the best historic ornament, and its range of application is limited; but within these limits it is often admirable and full of suggestion. The chief distinction, however, between savage and civilized ornament is the fact that there is no progressive development of styles in savage art: it is stationary, dominated by conceptions and ideals which remain practically the same for ages, unless they come in contact with a progressive civilization to impart to them the breath of life.

Savage ornament consists almost wholly of surface decoration. Structural ornament, limited to particular members of a complex edifice, does not exist. The patterns of savage art are wrought in color, by painting, stamping or weaving (Fig. 16), or by surface carving, so as to cover the whole, or, at least, the major part, of the object to be decorated, as on Maori paddles or Mangaya war-clubs (Fig. 17). For the most part, this surface ornament consists of minute elements, predominantly geometric in character, either indefinitely repeated over the whole field within a border of a different pattern, or disposed in successive zones or bands. Here and there appears a grotesque head, or a caricature of a beast or bird or man; but these occur usually as isolated motives, with a definite talismanic or fetish purpose, as in the example shown in Figure 18. Such representations of animate nature, originating in savage magical superstitions, are, it is true, almost always dominated by that keen decorative instinct to which reference has already been made, but they are in no sense ornament, properly speaking, and do not constitute the motives out of which ornament-patterns and systematic decoration are developed. They are carved or painted for the sake of their magical efficacy alone.

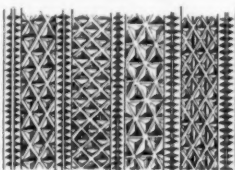


Fig. 17. From Maori (or Mangayan) Paddle.



Fig. 18. Javanese Drum-head.

figured in Haddon's "Evolution in Art." Of these belts more presently.

For all these motives thus derived from living forms Mr. Haddon has invented the generic term *biomorphs*, subdividing them into the two general classes of *anthropomorphs*, derived from the human figure or features, and *zoömorphs*, derived from the forms of the lower animals.

The other chief source of motives in savage ornament is, as we have previously observed, to be found in the technical processes of primitive industries. How these are developed is an inquiry which I shall try to answer in the latter part of this paper; for the present we may simply observe that this class of motives are called by Haddon *skeuomorphs* (from σκευή, to prepare or shape, and μορφή, form). Biomorphs and skeuomorphs constitute the great bulk of savage ornament.

Let us examine briefly into the genesis and growth of biomorphic motives. They rarely, if ever, occur as purely independent ornament. They originate either in fetish-worship or in that peculiar system of primitive heraldry known as *totemism*. The fetish-talisman and the totem are both alike the products of that state of mind in the savage which confounds the subjective and objective, the abstract and concrete, the real and the imaginary,



Fig. 19. Papuan Manhood-belt.

the representation and the thing represented. To the savage, everything that surrounds him has life, feeling, consciousness and power, the inanimate and the animate alike. The blind and terrible forces of nature—the sun, the wind, the storm, the fire—as well as the

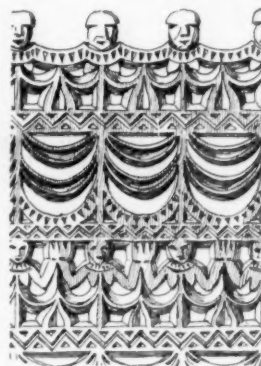


Fig. 20. From Friendly Island Drum.

whispering trees and silent rocks, are beings as real as himself. This state of mind is the source of primitive myths, of which the highly poetic and idealized legends and beliefs of Greek mythology are highest and most striking developments. All this, however, would have little effect on savage decoration but for the curious accompanying notion that the picture or figure of a beast or of an imagined being possesses in itself something of the qualities and powers of its original, and that it moreover endows with its own powers and attributes both the object of which it forms a part, and its possessor. It can easily be seen, therefore, why such representations are multiplied upon every object of use or ceremony to which they can be applied; and how this multiplication of figures and features or parts of birds and beasts, fishes and reptiles, human faces and bodies, must become in time a tradition and undergo finally those decorative transformations to which allusion has been made.

A totem, although not a fetish, has a kindred origin. It is the symbol of a family or clan, serving as its coat-of-arms. It represents in most cases a beast, by whose name the clan is known, and whose character or powers the clan is supposed, no doubt, in some measure to possess. The totem, therefore, serves as a name or signature, and provides also a system of genealogy and heraldry. The accumulation of bestial and monstrous forms on a totem-pole corresponds in idea to the multiplied quarterings of an ancient line in mediæval European heraldry. The totem is, therefore, multiplied upon the belongings and adornings of a powerful chief or family, like the monogram and crest of a European nobleman, or the H and L carved so profusely on the buildings and furniture of the Henrys and Louis of French royalty. It is among many tribes tattooed upon the body, as among the Haidas of British Columbia and certain New Zealand tribes, and is to be looked for in the carvings, in the woven patterns and on the pottery and weapons of any people using totems at all.

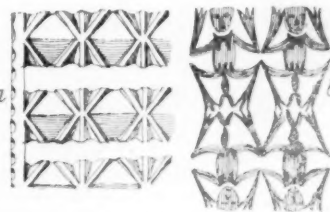


Fig. 21.



Fig. 22. Alligator Forms from Chiriqui Pottery.

While totem and fetish forms thus serve wholly different purposes, they occupy a similar position in the evolution of decorative patterns out of naturalistic representations, and need not be separately treated in the discussion of this line of development.

Now while naturalistic totems or fetishes are at first employed in a purely symbolic or abstract way, their constant multiplication on objects of use subjects them to the operation of the decorative spirit. The representation of nature becomes more and more schematic and conventional, not only because of the inevitable tendency of constant repetition towards simplification and variation, but still more because of the exigencies of the technique of weaving, carving, or modelling in clay. The tools and materials used, the texture of the cloth or matting, the grain of the wood, the shape of the object, impose upon



Fig. 23. Serpent with textile patterns from Mexican Ceremonial Vase. (N. B. Two joints omitted.)

the primitive artisan the necessity or desire to emphasize one feature at the expense of another, to modify proportions and simplify details; for even the most realistic art of the savage is never animated by the desire to reproduce nature in every detail. All that is required is a recognizable effigy, one which strongly portrays the

¹ Continued from No. 1155, page 51.

most noticeable characteristics of the object; and this leads inevitably to caricature. All savage representations of natural objects, especially of human and animal figures, appear grotesque or monstrous to our eyes. In the primitive technique of savage art all that is required is fidelity to the traditional features by which the object



Fig. 24. Papuan Manhood-belt.

taken from nature is recognized or designated. But this tradition forms itself and modifies itself by and upon the traditional representations, not the original object; just as modern religious pictures represent angels in conformity to a traditional conception itself founded upon earlier pictures. The original type and the original tradition alike may therefore finally disappear, in which

case a myth is sure to be invented to account for the form. Such myths are based usually on some fancied or real resemblance to a natural object quite different from the original type, and are, of course, wholly misleading or utterly false. The investigator cannot in many cases verify or disprove the native explanation of a savage pattern, and the explanations cited by even the most noted authorities, like Ehrenreich, Grosse, Von den Steinen or Stolpe, must be accepted with caution, and only as working hypotheses.

Figure 20, from a Friendly Island drum in the United Service Museum, London,¹ shows very effective openwork carving, apparently executed with a sharpened clam-shell, or some gouge-like tool. The very decorative border at the top appears (with the exception of the heads that crest it) to be of a purely conventional pattern. By reference to the band lower

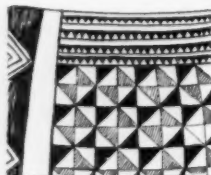


Fig. 25. Bolivian Vase Pattern.



Fig. 26. From Old Bolivian Potcho.

down, however, it is seen to be composed in reality of sitting human figures with joined hands. The patterns in Figure 21 and others like them from New Zealand are explained by Stolpe, Colley March, Haddon and others as having a similar origin, being in reality degenerate, female human figures, of which the heads have disappeared, while the zigzags and X's represent the arms and legs.² If so, it is easy to see that the use of a straight-edged cutting tool upon the grain of the wood has led to this geometrical conventionalizing of the figure. Figure 22 illustrates modifications of animal forms in weaving and basketry, and

Figure 23, from a Mexican ceremonial vase in the Humboldt collection (New York Museum of Natural History), shows the sacred Mexican serpent as modified by textile design, copied upon pottery.

The demands of decoration operate with no less insistence than the exigencies of technique to modify totems and talismans. When the decorative purpose has once manifested itself, realism begins to disappear, and abstraction, suppression and exaggeration of the various features of the object represented rapidly change its aspect almost beyond recognition. Especially noticeable is the influence of repetition which lies at the foundation of savage decoration. The multiplications of exactly the same form in a line, to produce a border or band, or in two directions to produce an all-over pattern, inevitably leads to the modification of the details. Though the savage artist is prodigal of time and labor, he never wastes it, and the representation of a beast or man is modified both to produce a better decorative effect and to render the work easier.

The nature of the space to be filled and that of the form to be ornamented also affects the treatment of the type-form, which has become in time an ornament-motive, pure and simple, in the use of which decorative considerations are paramount. The form is still traditionally a talisman or totem although practically an ornament, for its talismanic significance long outlasts its resemblance to the original type. Indeed, the magical virtue of ornament-motives is recognized in Egyptian ornament, as Maspéro has observed.³ The Zuñis of our day, who represent perhaps the highest type of American aboriginal culture, attribute magical meanings to nearly every form used on their pottery and other arts, and invest the pottery itself with life for which an "exit-trail must be provided in the decoration upon it. The clang of a pot when it breaks in burning is the

cry of this being as it escapes from the vessel."⁴ Dr. Gill states that a significance is "invariably attached to ancient Polynesian carving";⁵ Dr. Stolpe claims all the linear ornaments and Manganian adzes as human figures, and Dr. Colley March calls Polynesian ornament comprehensively "a mythography." Magic, religion and ornament go hand-in-hand in savage art, and the tradition of the association has survived to our own day. It is the origin, or at least one of the sources, of symbolism.

When the fetish or totem has entered upon the decorative stage of its development its modification as an ornament-motive advances rapidly. Its magical import is still retained, but may be left out of account in tracing the rapid mutations of the motive. Illustrations are numberless, but only a few can be here given.

The patterns in Figure 24 are taken from Papuan manhood-belts, to which allusion was made earlier in this paper (Fig. 19). These belts, made of oblong flat bits of wood, are worn in the ceremonies of initiation which accompany the assumption of full manhood by Papuan (New Guinea) youths. They are invariably decorated with patterns based on the human face or features; but although the eyes and mouth are sometimes recognizable, in other cases the resemblance is decidedly far-fetched. It is not hard to understand that, under fetish ideas, to be clothed with many eyes and fierce mouths crowded with sharp teeth must impart to the neophyte both far-sightedness and ferociousness. These examples are from Haddon's work. More

striking still are the richly carved patterns on the ceremonial staves borne by Maori chiefs. These are adorned with decorative heads supposed to represent a face with the tongue protruded as an expression of defiance and contempt, and hence of the power and courage which, as talismans, they bestow on their bearers. On many of these the design is purely conventional, all semblance to a face having disappeared, though the tongue remains as a sort of finial-blade. There are fine examples of these staves in the Natural History Museum at New York, not, however, accessible for sketching at the time of this writing. Figures shown in 22 are from the pottery of the Chiriqui Indians, and represent the alligator in a number of the almost endless decorative modifications of its form in that pottery.

In studying these and other examples of the degeneration of naturalistic forms into ornament-motives, whether through technique or decorative intent, the very important question arises, how far the conventional patterns of savage art really originate in representations of nature. I am aware that there is a tendency among anthropologists towards the proposition that all savage patterns are degenerate totems or talismans, and certainly the opinions of investigators

who study among the savages themselves carry weight and deserve respect. But one cannot help questioning whether they do not carry some of their conclusions too far. It does not seem unreasonable to suppose that many of the motives claimed as degenerate zoomorphs are really cases of "convergence" between zoomorphic and geometric forms, the latter having become habitual through the technique of carving and weaving, and that others to which the natives assign a fetish or totem origin are simply skeuomorphs, to which the imagination of the myth-making savage has attached a new and imaginary meaning. Granting that fetishism and magic may have given rise to the earliest decorative art, it is at the same time incredible that the operations of plaiting, weaving and carving should fail to generate a great variety of conventional patterns of a purely skeuomorphic character. Holmes and Cushing have demonstrated the technical origin of many of the pottery decorations of the Pueblo, Zuñi and Mississippi Valley tribes, though magic plays to this day an important part in their decorative art. It is perfectly natural to suppose that the two concurrent influences must frequently converge and overlap. The naturalistic forms, although of magical origin, undergo the influence of decorative habits acquired and developed in the manipulations of weaving and plaiting, and in the imitation, by carving or by painting on pottery, of the motives evolved in those manipulations. We can hardly fail to recognize in the ornaments in Figure 25, from a fine ancient Bolivian vase in the New York Natural History collection, the imitation of

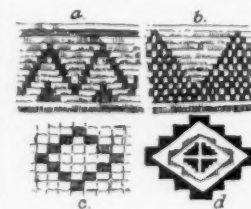


Fig. 30.

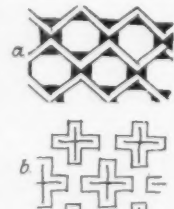


Fig. 27. Fish and Lizard Patterns, Brazil.

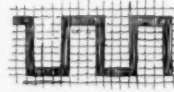


Fig. 31. Elementary Basket-fret.

¹ From Owen Jones's "Grammar of Ornament," Pl. II.

² Haddon, "Evolution of Art," pp. 271-274. The K or double K pattern is called by the Mangaians tiki-tiki, or tiki-tiki tangata, words, according to Dr. Gill, signifying "first man" and "man," and hence indicating pedigree.

³ See quotation by W. H. Goodyear in the *Architectural Record*, Vol. III, No. 2, December, 1893.

⁴ F. H. Cushing on "Pueblo Pottery" in Fourth Annual Report of Bureau of Ethnology, Washington, 1886.

⁵ Haddon, *op. cit.*, page 270.

⁶ From Lake Titicaca, in what was formerly Peruvian territory. Both this example and that of Figure 26 belong really in the category of Peruvian art.

patterns manifestly textile in origin, and related to those shown in Figure 26, from an ancient Bolivian poncho, or woollen shirt.

So the Mangaian or Tahitian artist, acquiring in his carving of clubs and paddles great skill in the designing of patterns by triangular and bevelled notching, treats his fetish or totem woman-figures in a like technique, until they are hardly distinguishable from the

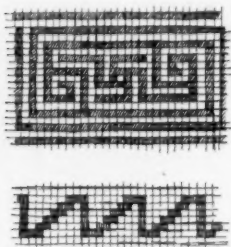


Fig. 32. Aucazonian Basketry
Fret and Zigzag.

geometric patterns evolved out of the notched carving. If, in time, the distinction between the two kinds of form becomes obscure and the Maori tells the white scientists that all the notched and X-forms represent men or fetish gods, it would not alter the fact that a large part of them were originally skeuomorphs. A similar convergence appears in the textile art of primitive peoples, human or animal forms and purely geometric textile patterns tending towards each other until they are no longer distinguishable.

Such a convergence seems to me to be the true explanation of those interesting patterns from Central Brazil to which Ehrenreich and Von den Steinen have attributed a purely naturalistic origin. Dr. Ehrenreich (quoted by Haddon on page 174 of his "Evolution in Art") identifies the geometric patterns of the Karaya and Shingus tribes as representations, in every case, of natural objects. These patterns consist of squares and triangles, zigzags and all-over decoration, geometrical in character, but they are to be interpreted as fish, lizards, bats and other animals (Figs. 27, 28). Thus, the diamond-shaped quarry with black corners is a *mereschu*, a fish whose outline, with its head, dorsal and anal fins, and tail, approximates a quadrate form. Now it is quite possible that some of these patterns are degenerate zoomorphs; but this by no means proves that none of them originated in technical processes of industry and decoration. The fact that a snake in time came to be represented as a zigzag explains why the savage calls all his zigzags snakes, but does not prove that no zigzag was used before the snake-form had degenerated into a zigzag. Indeed, this degeneration may reasonably be accepted as suggesting that the geometric forms which it approaches were already in habitual use when it began, and that the direction of the degeneration was determined by a preëxisting habit, or "expectancy" (as Dr. Colley March calls it), of geometric form, acquired in skeuomorphic decoration.

Among the tribes of southeastern New Guinea the head of the frigate-bird has been a prolific source of ornament-motives, among which are the spiral scroll, the guilloche and the volute (Fig. 29). Indeed Prof. W. H. Good-year has expressed the opinion that these motives in savage art are, in every case, of classic origin, transmitted from India by Buddhist influence to Malaysia and thence along the lines of Malay trade through the Southern Pacific. It does not seem necessary to resort to this theory to account for the presence of these motives in southeastern

Fig. 34. Mexican Sacred Vase.

New Guinea: the derivation from the frigate-bird motive is too obvious, and other evidences of classic influence too completely lacking, to warrant the acceptance of this highly ingenious contention.

Skeuomorphic patterns are less numerous in primitive art than those derived from nature not only because the industrial technique of primitive people is so limited in variety and resource, but also because the extremely slow development of their art produces few variations of the motives that result from processes of manufacture. The sources of these motives are principally three: weaving and plaiting, carving influenced both by tools and material, and pottery. One of the earliest arts practised by peoples emerging from the lowest stages of savagery is the plaiting of mattings and baskets, and then the weaving of fibres and grasses, or even of spun threads of linen, wool or hair, into fabrics to be used for clothing or adornment. Accidental variations or contrasts of color in the fibres or grasses used suggest intentional effects, which are in time developed into elaborate patterns. The rectangle is naturally the basis of the motives used, since the threads cross at right angles; but the moment the weaver has grasped the possibilities of skipping the threads of the warp in varying numbers it becomes possible to produce zigzags, lozenges and frets (Fig. 30). The zigzags are, of course, stepped in outline—so are the lozenges. The fret, or

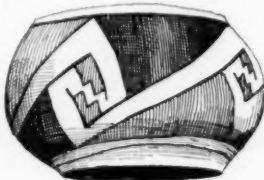


Fig. 33. Mexican Sacred Vase.

meander, is a natural step in the elaboration of the stepped zigzag, and is, doubtless, also, independently developed, first in the form of Figure 31, and then in more complex forms.

These simple elements applied to the decoration of baskets, and of mattings or fabrics, inevitably lead to two classes of patterns—linear or border patterns, and all-over or body patterns, and thus to a systematic decoration quite independent of talismanic or fetish purpose. But the talismans used on other objects must soon invade these woven or plaited products: the expert weaver introduces their familiar motives into his patterns, altering them to suit the new material, and thus the two kinds of motives, in time, cross and mingle.



Fig. 36. Mexican Bird-shaped Vase.

Confusion in the traditional explanations and nomenclature must certainly result from this mingling. Very significant, in support of this theory of the skeuomorphic origin of many alleged zoomorphs, is the fact that substantially the same form or pattern has often widely different names and meanings among different, though related, tribes, and even among the same people. Thus a triangle is a bat or a bird among the Bakairi and Auetó of Central Brazil if in vertical rows or with a margin-line above; but it is a *uluri* or woman's breech-cloth if in horizontal rows without such a line. To my mind, it is clear that neither of these names, "bat" and "*uluri*," explains the origin of the triangle, which is undoubtedly a skeuomorph, whose fancied resemblance to these respective objects has led to its receiving their names. The spiral signifies water, in the art of many tribes, while among the Pueblos it symbolizes the whirlwind; but W. H. Holmes and Frank Cushing are fully agreed that in Pueblo pottery it did not originate in the symbolism of the whirlwind, but in textile and ceramic processes of manufacture. The method of its origination they illustrate by numerous examples.

The spiral has one of its sources (at least in the art of the North American Indians of the West) in basketry, the only kind of weaving which they seem to have perfected in any degree. Baskets are plaited so closely as to hold water, and these basket-vessels preceded the introduction of pottery. Figure 32, after Cushing, shows typical



Fig. 38. Pueblo Jar.

basket decorations, illustrating clearly the origin and kinship of the zigzag, triangle-stepped pyramid, and lozenge. The genesis of these forms in basketry is demonstrated by the names of these forms in Zuni speech: thus the stepped lozenge is the "double-splint stitch-form," *shu-k'u-tu li-a-tsi-nan*. The earliest pottery was suggested by the custom of lining these basket-jars with clay; in the next stage it was made by coiling clay-ropes precisely as the grass-and-splint braids were coiled in the basket-ware. The coiled pottery was then decorated by pinching or indentation, in imitation of the colored patterns woven in the basket-jars, i. e., with zigzags, chevrons, lozenges and frets. Subsequently, when smooth, hand-modelled jars were perfected, and coloring with fusible slips or by painting became possible, the greater freedom of the technique of the brush as compared with basket-weaving brought about a remarkable elaboration of these simple and primitive elements. The fret and its curvilinear derivative the wave, the zigzag, the spiral coil and the lozenge were varied and combined in endless variety in patterns in which red and black were used with really extraordinary artistic skill and varied effect.

All the above-named forms in Pueblo painted ornament are unmistakable basketry or textile forms. The fret, or meander, may have come into use in a dozen different ways in different places. It may be a variant of the zigzag, or it may be derived from textile representations of the snake or crocodile, or in some cases it may have been produced directly in basketry decoration. It is absurd to claim for a form, so universal and so elementary, an exclusive derivation from any single source from which it has spread throughout the savage and civilized world. Its most important modification, arising in some cases from technical manipulations and in others from decorative considerations, is the spiral wave, or "current scroll." This is produced by curving all the angles of the fret; but it is extremely probable that this is only one of many sources of its derivation. The spiral both as an isolated and as a current pattern is suggested



Fig. 37. Pueblo Pot.



Fig. 35. Mexican Sacred Vase.



Fig. 39. Zuni Jar.

by so many objects in nature and by so many industrial operations that it is inconceivable that any one source should be alleged as its sole origin. The coiling of the clay-ropes in primitive pottery, the forms of shells, which, as Holmes has shown, are imitated on many early Indian vessels, the winding and coiling of thongs and ropes, as well as the rounding of corners of the current fret—all these and many other suggestions have doubtless contributed to the widespread use of the spiral and wave in savage art.

In the accompanying sketches from Mexican prehistoric pottery from the Lumholtz collection¹ the spiral and fret appear in connection with the stepped triangle. They are in most cases in the natural color of the pottery, upon a background of red or black, or more often of the two colors counterchanged (Fig. 33). In Figure 34 there is a large central meander running at either end into a current scroll on a black ground in a very effective and vigorous design. Figure 35 is a small and exceedingly artistic vase of very thin clay, decorated with current spirals on convex flutings. Figure 36, representing a "wild-duck" vase, illustrates the ingenuity of the manner in which single lines are traced into a sort of labyrinth leading into spirals. Here the filling-in of the blank spaces by counterchanged background panels in red and black occasions an accidental form very suggestive of the so-called "Mycene leaf." All these are Mexican examples: Figures 37, 38 and 39, after Holmes,² show a very similar style of painted decoration. The use of these few and simple motives was widely spread through the southwestern portion of the present United States and a large part of Mexico. How far it represents a single culture, and how far, on the other hand, like conditions developed like results independently among separate tribes, I am not prepared to say.

This is a meagre sketch of a few aspects of the broad field of investigation, as yet by no means adequately explored, of the character and origin of savage and primitive decorative motives. Two or three facts are conspicuous, even from this brief study:

First.—In savage ornament generally, geometric ideals control not only the distribution but the detail of the patterns. This points to the importance of skeuomorphic origins and influences in their development.

Secondly.—Natural forms are invariably of magical significance. They converge towards the skeuomorphic treatment, because the savage ideal in the representation of nature is not accurate reproduction of its forms, but conformity to certain peculiarities regarded as typical, or even exaggeration of these, and this is not incompatible with an extreme geometrization, so to speak, of the representation.

Thirdly.—Of many motives it is impossible to determine whether the origin is talismanic or skeuomorphic, because the native identifications may in many cases be myths arising from fancied resemblances, instead of trustworthy traditions of the actual origin.

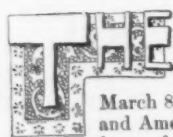
Fourthly.—The zigzag, quadrilateral (square lozenge or quarry), fret, and coil or spiral appear in nearly all savage styles. The coil spiral are wanting in certain defined districts of the South Sea Islands, but these are notable as exceptions to a general rule.

Fifthly.—Savage ornament is almost exclusively surface ornament, in which general effect is the chief concern, and is produced by a disposition of motives and patterns which is generally highly judicious and artistic. As a rule, however, the element of grace, the charm of refined curves, the harmonious combination of pleasing forms into patterns full of life and elegance, are not to be found in the motives or patterns of savage art. Savage peoples could never develop an anthemion pattern or an egg-and-dart moulding. Their art stops short of that initial step in the line of historic and civilized progress which is taken when beauty, as an end in itself, is recognized and accepted as the controlling consideration in all design, and the designer renounces mere traditional standards to seek after an ideal which he can never attain but must ever pursue.

A. D. F. HAMLIN.

(To be continued.)

"WORKS OF ART" IN THE TARIFF.



THE question, "What constitutes a work of art, under the tariff laws?" has been answered in one of its legal stages by Judge Townsend, of the United States Circuit Court, New Haven, March 8, who decided the case of the Morris European and American Express Company *vs.* the United States in favor of the plaintiff, who had appealed from the decision of the Board of General Appraisers after it had sustained a decision of the Collector of the Port of New York.

In 1896 the plaintiff imported into the Port of New York a church altar, including a tomb and reredos, intended for presentation to an Episcopal Church at Binghamton, N. Y. The altar was designed by C. A. Lamb, a New York architect and designer, and was made in France, of Caen stone. The structure, which was made, not in a studio, but in a mechanical establishment—a point emphasized by the defendant—is about fifteen feet high and twelve feet broad, with three figures of angels in relief supporting an altar-slab or table. It is of somewhat ornate Gothic style, with large central and two smaller gables, ornamented with crockets, finials, and cross, and

flanked by columns terminated by ornamental pinnacles. The cost was \$404 in France. The Collector of New York classified it for duty at 30 per cent *ad valorem* as "dressed stone not specifically provided for," while the importer claimed the altar as free, either as a "work of art imported expressly for presentation to an incorporated religious society" or as "statuary specially imported in good faith" for a religious society, or as dutiable at 20 per cent *ad valorem* as a non-enumerated article.

Among the sculptors who testified in the case were Augustus St. Gaudens, J. Q. A. Ward, Wilson McDonald, Byron M. Pickett, and J. S. Hartley. Of these, Messrs. St. Gaudens and Pickett said the altar was not a work of art; Messrs. Ward and Hartley said it was a work of art in a broad sense, and Mr. McDonald said it was not a work of art in sculpture, but might be in architecture. The text of Judge Townsend's decision, apart from his description of the case, is as follows:—

"The parties are at issue chiefly upon the question as to whether this altar and reredos is a work of art. The attorney for the United States relies upon the testimony of certain distinguished sculptors. Thus Mr. St. Gaudens says:—

"My reply is that it is not a work of art, but I think this reply needs qualification. It is difficult to define a work of art or say just where a work of art begins or where it ends. In a large sense, everything, from the commonest design on a cheap cast-iron stove to the frieze of the Parthenon, can be included in the expression 'work of art.' There is no established line. Every man draws his own line. The nearest I can get to it is that what is generally understood by artists as a work of art purely is only such as is produced by a professional artist in his own studio, either wholly by himself or with such assistance as he needs under his own immediate direction or supervision. According to my understanding, this is distinctly and only what is meant by the words 'works of art' in the phraseology of the law, and was the intention of the framers of the law."

"Other distinguished sculptors, among them Messrs. J. Q. A. Ward, Hartley and Donaldson, testifying in behalf of the United States, admitted that, if it was not a work of art in sculpture, it was a work of art in architecture, or in a broad sense. It would be presumptuous to question the views of such eminent artists as to what constitutes a work of art in the strict and technical understanding of sculptors who exclude architectural works from their definition. But when they undertook to determine what was meant by the words 'works of art' in the phraseology of the law, and what was the intention of the framers of the law, they manifestly overlooked the well-settled rule in the interpretation of tariff acts, that words used therein are to be understood in the sense which they bear in the common speech of the people of this country. In that sense the altar and reredos was a work of art. Several of the eminent sculptors already referred to say, in effect, that it was a work of art in the commonly-accepted meaning of the phrase. As Mr. Ruchstahl, another sculptor, says, 'From my point-of-view, any human work made with the specific purpose of stirring human emotions is a work of art, and I consider that work comes under that head.' Mr. Ward says: 'Art is the work of a human being in plastic material or color or something to render a sentiment, to imitate form, or something of that kind which does not grow on trees, which is not in nature.' If the proportions are sufficiently symmetrical, and the lines so far free from faults as to stir the emotions of people, the work is, to them, a work of art. Whether it is good or bad art is a mere question of quality."

"This work was originally designed by one of the leading American artists in this style of church architecture. An artist of reputation in France made original designs for the angels and imposed his personality upon the work. The specifications and detail-drawings show this fact beyond question. Whether the design and construction show such originality of conception and perfection of execution as to mark it the work of a genius is not a question herein. The work, as an entirety, confessedly falls within the accepted definition of a work of art. It represents the handiwork of an artist; it embodies something more than the mere labor of an artisan. It is 'a skilful production of the beautiful in visible form.'"

"It is unnecessary to consider the contention that architectural works are not works of art, for writers such as Mr. Ruskin and all the witnesses herein refuse to impose a limitation which would exclude the famous churches, triumphal gates, and graceful towers of Europe. The further contention that it cannot be a work of art if adapted to a useful purpose would exclude the Ghiberti doors of Florence or the fountains of Paris and Versailles."

"These conclusions render it unnecessary to consider the further claims of the importer, that the altar, at least, is statuary, and that neither altar nor reredos is dressed stone."

"The decision of the Board of General Appraisers is reversed."



FOR an author who has the good sense and diligence to prepare and for the publisher who has the courage to print an index of ninety-odd pages to a book that contains, index included, only a little more than six hundred pages, one cannot but have the greatest respect and feel that the author's modest hope that his book

¹ American Museum Natural History, New York: specimens not numbered at time of these sketches.

² Fourth Annual Report, Bureau Ethnology, pages 336, 346, 421.

"may be found useful as a reference-book for architects" is likely to be gratified in large degree. Yet this capital and voluminous index is but one of many good points which show Mr. Macey's skill as a bookmaker and his understanding of what a "reference-book" should afford. The book¹ is not only logically arranged in the sequence in which actual work is ordinarily executed, but its several instructions are cross-referenced in the fullest manner, so that one can follow the work, or, rather, the author's instructions about the work, from step to step without halt or loss of time. When to these good points is added the value of the hundreds of marginal illustrations — we have not counted them, but there must be more than two thousand of these cuts, all admirably conceived, from the explanatory standpoint, but less well printed than is desirable — and it can be seen that the book is one of very exceptional value.

Unfortunately it is of exceptional value only to the Englishman; it smacks of the Briton a league off. Who but he would ever think of specifying: "Provide one (or more) strong wrought framed beer-horse"? Still, though its usefulness to the American practitioner is greatly curtailed by its describing English methods of executing work with materials known not in our markets and in merchantable sizes unfamiliar to us, the book is useful if only through its marginal illustrations, which are expressed in that language which is common to all civilized mankind, for, even if terms and dimensions are now and then unfamiliar, we can all understand a skylight detail or a folding window-shutter drawing.

The scheme of the work is to make a model illustrated specification with explanatory notes for each requirement where explanation seems necessary, so that the book is positively instructive as well as a mere *vade mecum* or mnemonic guide to specification writing.

But, apart from its usefulness, the book can afford to the American both amusement in large measure and a good many hints as to procedures it would be well to adopt in this country. What American architect habitually includes in his specification a clause providing that he "shall have liberty to make all tests necessary to satisfy himself that the materials and workmanships are in accordance with the specification," and that the contractor shall not only provide "a set of scales and weights," but shall allow for "removing, weighing, repairing and making good, after the architect may have broken, cut into or damaged, when testing at any time, the materials, work or other parts of the building"? Or who would include in his painting specification the clause: "Allow the sum of (say) \$55 for analysis of paint"?

The painter's specification throws a curious side-light on the art patronage of the two countries, for we find in the introductory notes, that when "large paintings are to be hung against painted plaster walls, it is best not to paint the walls behind the pictures, so that the plaster may catch up any dampness from the air. Pictures should, however, always be kept clear of the walls." Evidently "large pictures" are a more common article of house furnishing in England than in America, if such a provision as this is one of the commonplaces of an architect's multifarious task. And some four hundred pages before this we find an instruction that the contractor is to "provide water and pans filled with cut hay to assist in taking up the smell of paint." Fresh water and fresh onions we knew were used for this purpose, but cut hay is a new idea to us. We also learn that for high-class work the wood is "knotted" with silver or gold leaf before painting, though hard japan stopping is more commonly used. On the other hand, it does not surprise us, as being somewhat familiar with London "blacks," that before painting an old room the flue must be swept.

As the plumbing and heating specifications deal with climatic conditions so different from ours, and as many patented contrivances known only in the English markets are specified, one can learn but little from them, though it is well to read what is said about lead roofing — the "leads" of our boyhood's story-books, which we neither knew how to pronounce nor yet what they looked like. And the preceding brief specification on thatching may give a useful hint to some architect who has a gate-lodge to build, for fifteen inches' depth of straw is as easily to be had in this country as in England, and there is many a man from the "ould country" who knows how to lace it onto the "hetherings" and trim the eaves and sod the ridge before he calls the job done.

Amongst the "Preliminary Items" we find a requirement that the contractor and all workmen employed by him must be "re-vaccinated at the contractor's expense." It appears, however, that this is a special provision covering work on small-pox hospitals, and may be taken as showing the degree of thoroughness with which Mr. Macey has done his work rather than that he is a propagandist of the theory of vaccination. We find here also not only that the specification and schedule of prices must be returned at the time of making a tender, on pain of forfeiting the deposit of some \$16, but also a provision that the contractor "shall, at his own expense, make copies of all drawings, specifications and details required for the work." Although this provision is intended to cover certain special cases, it reminds us of a custom that obtains in France which enables the French architect to secure for himself a greater part of the five-per-cent commission than can be saved by his American brother, who has to maintain and pay a large office force. An American architect, who worked for half a dozen years in the office of a Paris

architect who always had in hand at the same time several important buildings, told us recently that the office force consisted of himself and one other man, and that they were never oppressed with the amount of work they had to do. Inquiry revealed that, while all the work was of high quality, executed after special detail designs, no large working-drawings or full-size details were ever made in the office. All such drawings were made by the contractor's draughtsman at his expense, in accordance with the small detail sketches made in the architect's office, and proper interpretation of these small details or of verbal instructions was secured through having the working-drawings made by the contractor's draughtsman brought daily to the architect for his correction or approval, and it was no unusual thing for the architect to require these large detail drawings or clay models to be made over and over again — at no cost to himself, be it understood — before he would approve them. It is a great pity that this economical practice could not have been transplanted to this country for the benefit of our starving professionals.

ILLUSTRATIONS

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

ENTRANCE TO THE CORCORAN ART GALLERY, WASHINGTON, D. C.
MR. ERNEST FLAGG, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print, issued with the International and Imperial Editions only.]

COMPETITIVE DESIGN FOR PUBLIC LIBRARY, NEWARK, N. J.
MESSRS. HOWARD & CAULDWELL, ARCHITECTS, NEW YORK, N. Y.

SIDE ELEVATION AND SECTION OF THE SAME.

COMPETITIVE DESIGN FOR THE PUBLIC LIBRARY, NEWARK, N. J.
PREPARED BY MR. J. M. A. DARRACH, NEW YORK, N. Y.

DESIGN FOR THE COSTER MAUSOLEUM. MESSRS. STEPHENSON & GREENE, ARCHITECTS, NEW YORK, N. Y.

[The following named illustrations may be found by reference to our advertising pages.]

COMPETITIVE DESIGN FOR TOWN-HALL, COLCHESTER, ENG. H. T. HARE, ARCHITECT.

This plate is copied from the *Builder*.

OLD GATEWAY OF THE ABBAYE SAINT PÈRE, AUXERRE, FRANCE.

This plate is copied from Baron Taylor's "*Voyages pittoresques*."

[Additional Illustrations in the International Edition.]

CORCORAN ART GALLERY, WASHINGTON, D. C. MR. ERNEST FLAGG, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print.]

ONE OF THE SCULPTURE GALLERIES IN THE SAME BUILDING.

[Gelatine Print.]

DESIGN FOR THE ABBATOIR, LEEDS, ENG. MESSRS. ESSEX, NICOL & GOODMAN, ARCHITECTS.

THE CORRIDOR: NORTHAMPTON INSTITUTE, CLERKENWELL, ENG. MR. E. W. MOUNTFORD, ARCHITECT.

MARYLAND'S STATUES IN THE CAPITOL. — The commission appointed to recommend to the Legislature the names of two deceased citizens of Maryland deemed most worthy of having their statues placed in the National Hall of Statuary at Washington has made a report, in which it refers to the numerous names suggested through the press and historical and other societies, and to the extreme difficulty of making selections from among the many distinguished personages advocated. After full consideration it recommends the selection of Charles Carroll of Carrollton for commemoration by one of the statues. With regard to the other it reports that the commission has found it difficult to agree upon a recommendation, "but is of opinion that if military services are to be preferred for recognition, Col. John Eager Howard would be its choice, and if civil services are to be preferred it would recommend Thomas Johnson, first Governor of the State." — *The Baltimore Sun*.

¹ "Specifications in Detail." By Frank W. Macey, Architect. London: E. & F. N. Spon; New York: Spon & Chamberlin, 1898. 622 pp. large 8 vo. Price, \$8.

COMMUNICATIONS

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

"THE LOWER ANIMALS AS DESIGNERS OF ORNAMENT."

COLUMBIA UNIVERSITY, March 14, 1898.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In your issue of February 12 Mr. Frederick Wilson questions the proposition I laid down in my first article on "The Evolution of Decorative Motives," that "no animal except man produces ornament or anything that can be called decorative design," and cites in disproof the cases of the Baya-bird, bower-bird and African hammer-head. May I say in reply that I was perfectly aware of the propensity of certain animals, especially birds, to adorn their nests with points of light and color; and of Darwin's theory of sexual selection and æsthetic taste, neither of which contradicts the statement of my article? Mr. Wilson has failed to note the distinction between mere adornment, on the one hand, and decorative design or ornament (in the technical sense), on the other. The "design of displaying beauty," of which mammals and birds give evidence, is "design" in the sense of purpose or intention merely. "Decorative design" is universally understood to mean the composition or arrangement of form or color into definite patterns or representations predetermined in the mind of the designer, and no beast or bird has ever yet designed decoration in this sense. The intention to display beauty or to attract by brilliant color is not "decorative design" any more than the call of the nightingale or the varied notes of the lark or song-sparrow are musical composition.

I beg to thank Mr. Wilson for calling attention to the possible misunderstanding of what I said, and yourselves for the opportunity to set myself right with the naturalists, and remain,

Yours truly, A. D. F. HAMLIN.

NOTES AND CLIPPINGS

BOILER EXPLOSIONS IN ENGLAND.—The fifteenth annual report on the working of the Boiler Explosion Acts, presented to the Secretary of the English Board of Trade, shows that during the year ending June 30, 1897, the total number of cases dealt with under the Act was 80, and by these explosions 27 persons were killed and 75 injured. This represents a total of 102 persons killed and injured during the year, and exceeds the average (90.6) for the 15 years during which the Act of 1882 has been in operation by about 12.7 per cent. The loss of life taken alone closely approximates to the average (28.6) for the same period. The causes of explosions show no important variation. Of the 80 cases dealt with, 28 were attributed to the defective condition of the boiler or of its fittings, 33 to defective design, workmanship, material, or construction, or to undue working pressure, and 12 to ignorance or neglect of the attendants. In 42 cases the boilers were under the inspection of some public association or were used in vessels provided with Board of Trade passenger-certificates, but in many of these cases the explosions were not due to defects which existed when the last periodical inspection was made.—*The Westminster Gazette*.

THE AMERICAN SCHOOL AT ATHENS.—In a year of war and rumors of war an archaeological explorer finds his occupation wellnigh gone. Throughout the long-drawn crisis of the past spring and summer both the Greek Government and the Greek people behaved toward the foreign representatives of science in their midst with extraordinary courtesy, detaching them almost entirely from the feelings of irritation or resentment which were manifested toward the European powers. But with one-half of the available peasantry drawn off for the fighting line and reserves, and the other half able to think and talk of little but war, it was naturally difficult to effect excavations during the spring. . . . Thus the American School in Athens, which had planned for last spring the opening of the campaign which is to uncover Corinth, only did about a week's work. The Government was too busy to proceed with the promised expropriation of the site, and finally the director, Mr. Richardson, bought for himself a small tract east of the temple, and there came quickly on remains of a stoa, which seemed to indicate the proximity of the agora of the city. But the work was not proceeded with. It is to be resumed in March, if the expropriation has by that time been duly carried through, but the great depth of the soil will entail great expense.—*Literature*.

THE RESTORATIONS AT SALISBURY CATHEDRAL.—The work of restoring the famous spire and turrets of Salisbury Cathedral, England, which has been in progress during the past two years, is now almost completed, and it is expected that the scaffolding will soon be removed. The work has been carried out under the direction of Sir A. Blomfield, and in a recent report to the special committee he informed them that the turret at the northwest of the cathedral was in such a bad state that it was necessary to take it down. It has now been rebuilt. The work, Sir A. Blomfield said, was one of great difficulty, but has been

accomplished in the most workmanlike and satisfactory manner. Every stone that could be reused appears again in its proper place, new stones being introduced only where the original stone-work had been crushed, broken, or composed of such small stones as to be unsafe. The turret staircases at the four angles of the tower, which have to support so much of the enormous thrust of the spire, have been thoroughly repaired and strengthened. On all four sides defective masonry has been taken out and replaced by new stones weighing in some cases more than a ton. The foundations of the south aisle and of the west side of the south transept have yet to be repaired. Altogether the cost of the work will be about £15,000, a sum which the Dean and Chapter are securing with difficulty. The deficit at present amounts to about £1,500, and contributions to that amount are awaited with some anxiety.—*N. Y. Evening Post*.

THE COST OF AN INDIAN EARTHQUAKE.—The official report from the secretary to the Chief Commissioner of Assam on the earthquake of June 12 last, which resulted in the loss of 1,542 lives and the destruction of an enormous quantity of property, has arrived. The cost of repairing damages in the Public Works Department alone is estimated at more than thirty-five lacs of rupees, or, to put it moderately, over one quarter of a million pounds sterling. These figures do not include the cost of damage to local communications chargeable to municipalities and local boards or departmental expenditure not borne by the Public Works Department. In the circumstances, the Chief Commissioner is applying for a grant from Imperial revenues to assist the administration to recover from the effects of the earthquake. "Here," says Professor Milne, "we have a danger threatening life and capital which can only be avoided by the acceleration of engineering operations. With regard to the proposals that the various headquarters of the Assam administration shall be shifted to more favorable sites, the interference which such a step would cause to public and private interests makes it desirable that the effects of earthquakes in the future should be met, not by escape to localities where movements might be less, but by changes in the methods of construction. During late years Japan has suffered from earthquake movements probably more severe in the ratio of nearly five to three than that which in June last created so much destruction in Assam. . . . Profiting by experience and guided by experiment, Japanese engineers and their European colleagues have gradually departed from stereotyped methods of construction, with the result that structures of the new type, whether they are ordinary dwellings or other works, have, so far, remained standing, whilst what is old is slowly disappearing. The fact that the Japanese Government annually votes from 1,000,000 to 5,000,000 to assist a committee in investigations which may result in modifying earthquake effects, has a bureau controlling the seismic survey of its country, and has appointed a professor of seismology at its University (at which all students of engineering listen to some twenty or forty lectures on construction in earthquake countries, and by this time may have read the report of its trained seismologist, Dr. F. Omori, sent to Assam to note anything that might be of benefit to his own country), are strong testimonies that material benefits have already been obtained from the study of earthquakes. When we consider the British capital invested throughout the seismic regions of the world and the money from time to time expended in the restoration of consular and other buildings, we must surely feel that the sooner we turn attention, if only to that which has already been done to mitigate the effects of earthquakes, the sooner will the loss of life and property which accompany such disasters be reduced."—*The Architect*.

THE FALL OF "WILSON'S FORT."—The rustic fortifications around the Soldiers' Monument at Huguenot and Main Streets, New-Rochelle, are being demolished. The breastworks were given to the town about a year ago by Francis Wilson. He originated the idea that the monument should be surrounded by some appropriate emblem of past warfare, and as the Government had given to the Grand Army Post a present of several large cannon and a number of shells, Mr. Wilson offered to mount them and build a fort. His offer was accepted by the Grand Army of the Republic, and the fort was built of cobblestones, from designs made by E. W. Kemble. Some of Mr. Wilson's fellow-townsmen visited the fort and declared it a capital thing, a statement which the comedian afterward had reason to think was a joke, for the villagers and the trustees of the Presbyterian Church, in front of which the fort was erected, declared that it disfigured the street. Some of the objections urged were that the shells were too large for the cannon, and that while the monument was a modern conventional shaft the breastworks were antique and entirely out of place.—*N. Y. Tribune*.

THE BEACON OF HADLEY CHURCH.—In the course of a note entitled "Curiosities of our Ancient Churches," the *Newcastle Weekly Chronicle* says: Beacon turrets on churches are curiosities. They rise above the roofs for the purpose of displaying beacons, and are not to be confounded with the stalwart church towers on the Border that were used for defence, and were provided with narrow window openings and battlements, and sometimes with corbelled-out parapets. A beacon turret may be seen at Hadley Church and another on the southeast angle of the chancel of Alnwick Church. That at Hadley had the iron receptacle for the blazing beacons raised on high so as to show over the battlements. The receptacle has disappeared from the Alnwick turret. There is a narrow, winding stair of stone leading up to it, with access to a low, narrow door in the southeast angle of the interior of the church, and those who ascended stepped out on to the roof, where there were formerly indications of a small chamber, and from here a lighted beacon could be seen for many miles.

DARMSTADT SCHOOL BARS FOREIGNERS.—The Darmstadt Technical High School has decreed the exclusion of foreign-born students.—*Exchange*.

· COMPETITIVE ·
· DESIGN · FOR · THE ·
· COSTER · MAUSOLEUM ·

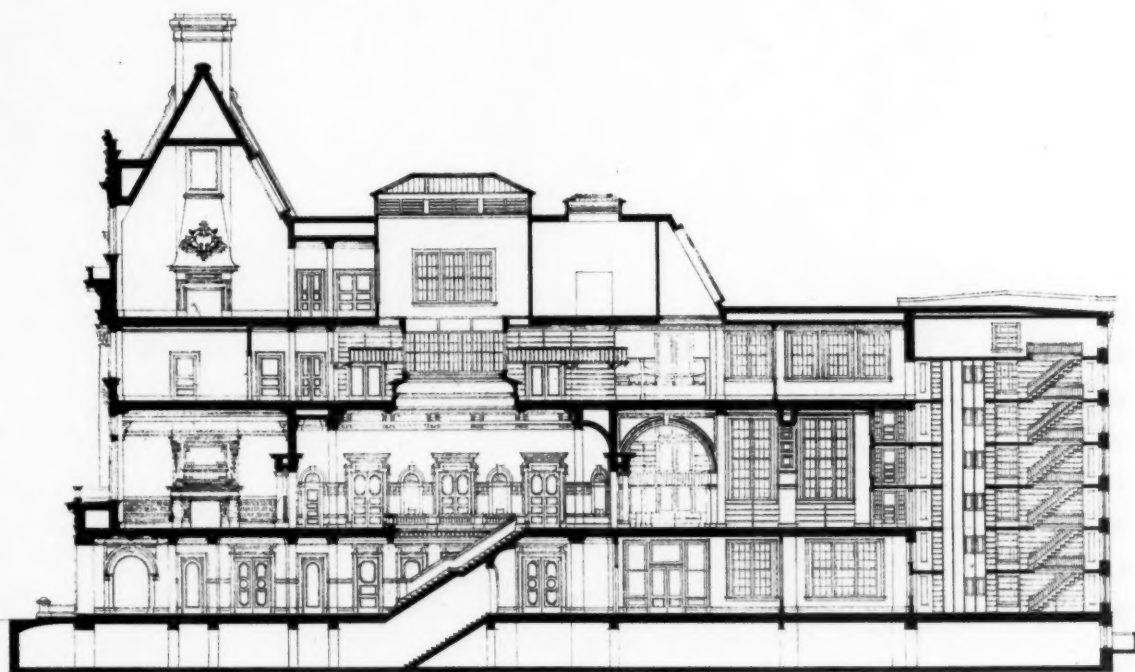


FRONT · ELEVATION ·



STEPHENSON AND GREENE ARCHITECTS

TEMPLE COURT NEW YORK CITY



LONGITUDINAL SECTION



FREE PUBLIC LIBRARY, NEWARK, N.J.
SIDE ELEVATION.

COMPETITIVE DESIGN FOR THE NEWARK FREE PUBLIC LIBRARY, NEWARK, N. J.

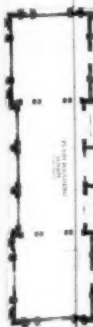
HOWARD & CAULDWELL, ARCHITECTS.



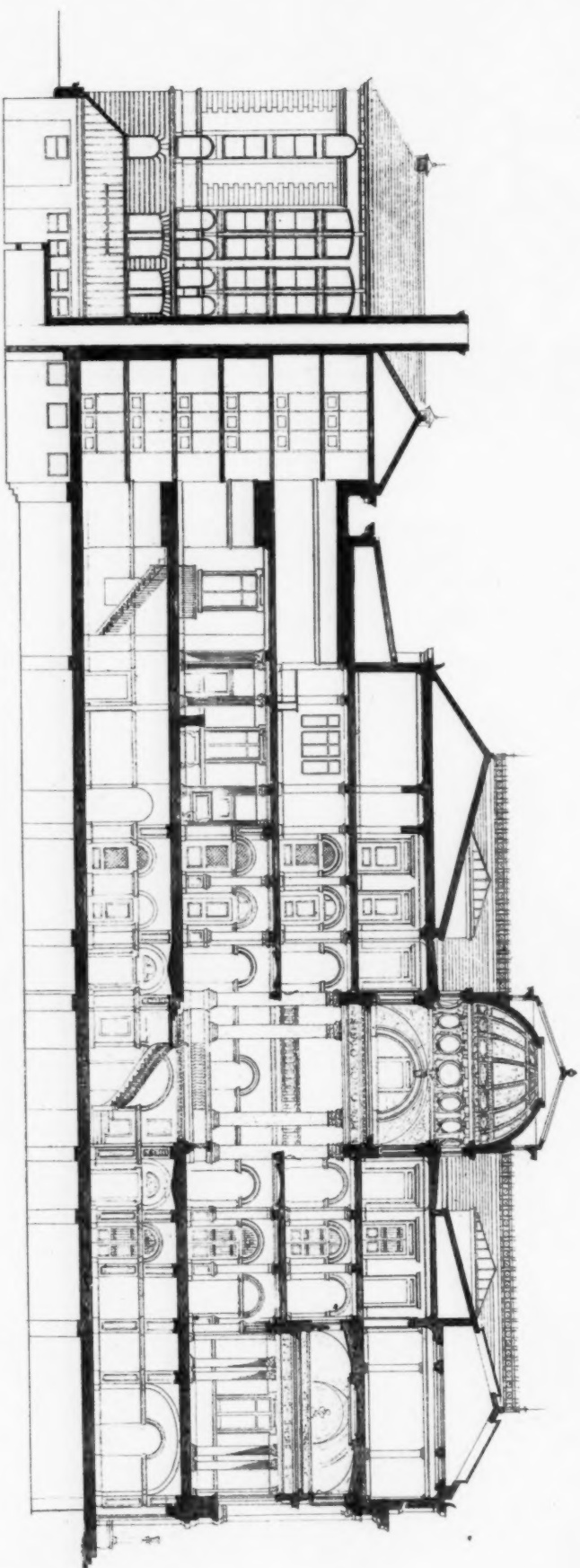
PLAN OF BASEMENT STORY

FRONT ELEVATION

Wm. O. Dawson, Architect



PLAN OF FIRST OR MAIN STORY



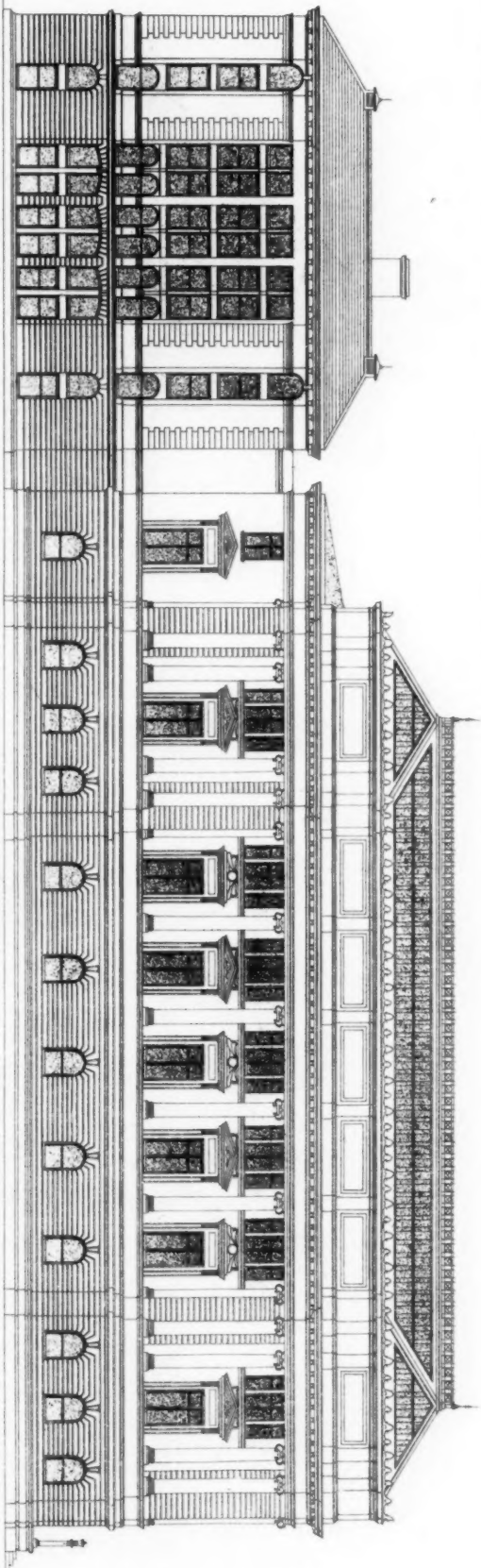
LONGITUDINAL SECTION

COMPETITIVE DESIGN FOR
FREE PUBLIC LIBRARY, NEWARK, N. J.

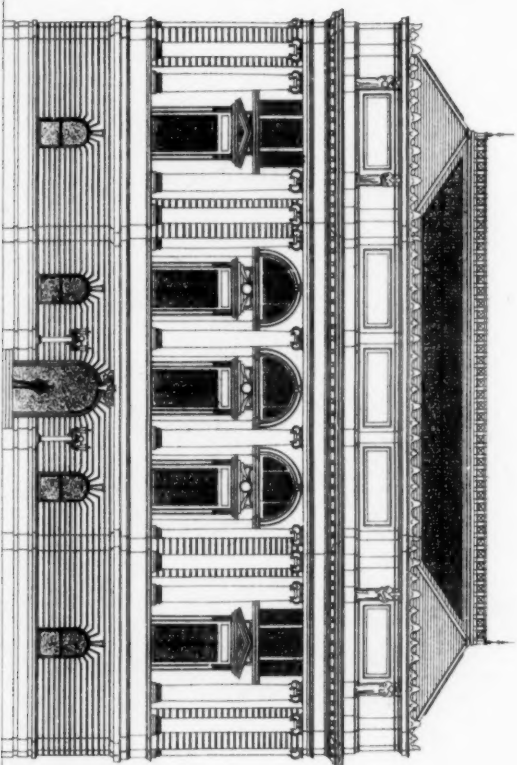
AMERICAN ARCHITECT AND BUILDING NEWS, MAR. 19, 1895.

OFFICE: 100 N. 7TH ST. PHILADELPHIA, PA.

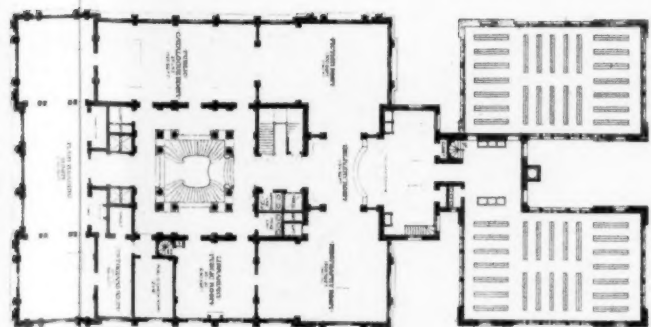
No. 1160.



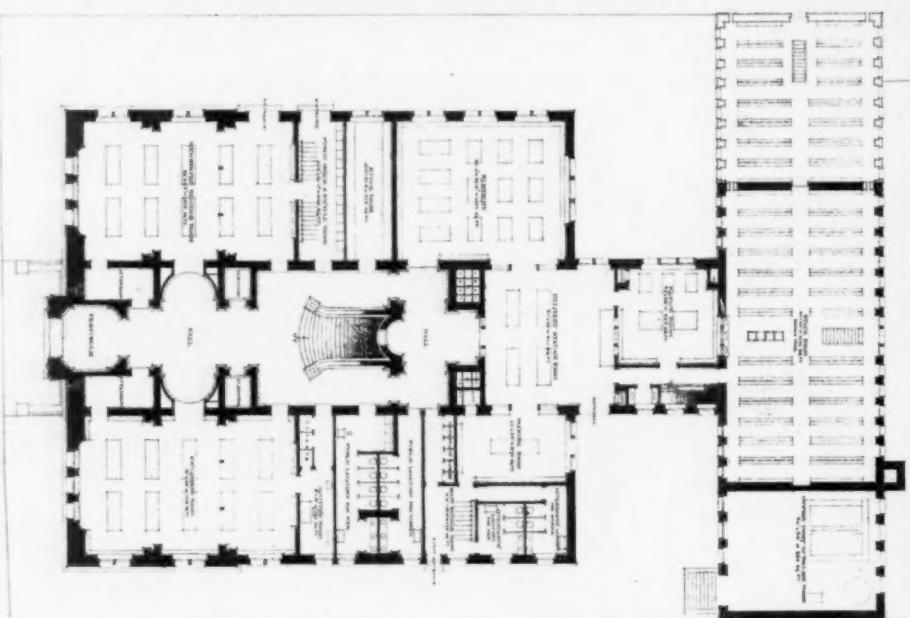
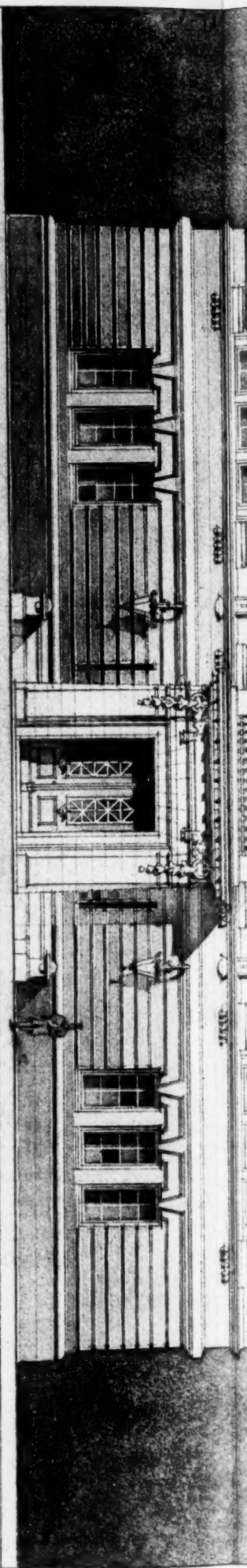
SIDE ELEVATION.



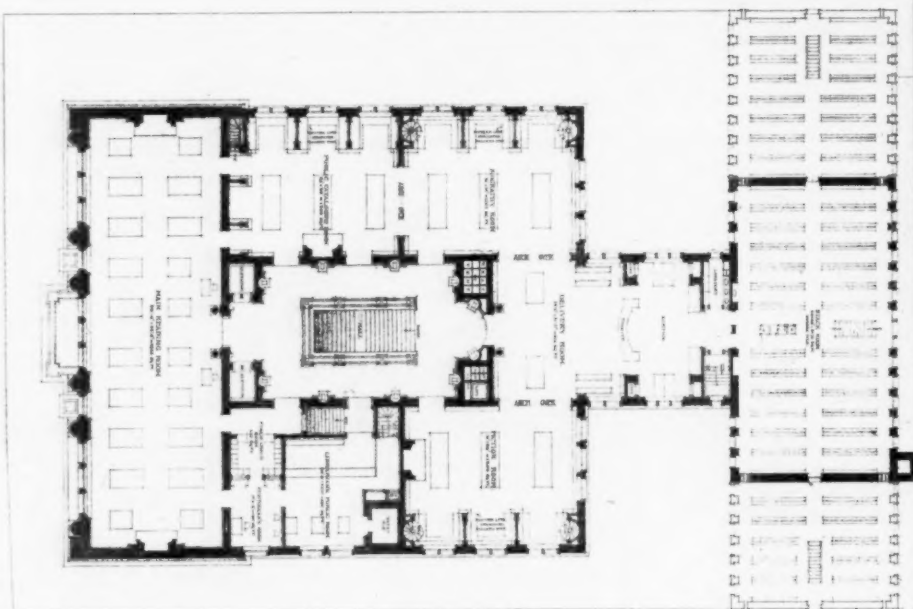
FRONT ELEVATION.



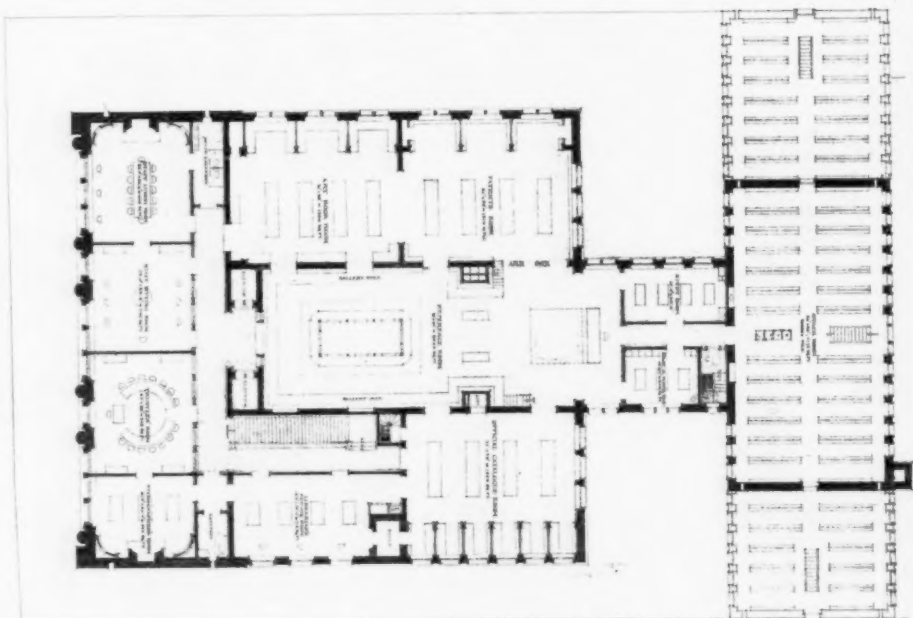
W. O. Dawson, Architect



BASEMENT, OR GROUND FLOOR.



FIRST, OR MAIN FLOOR.



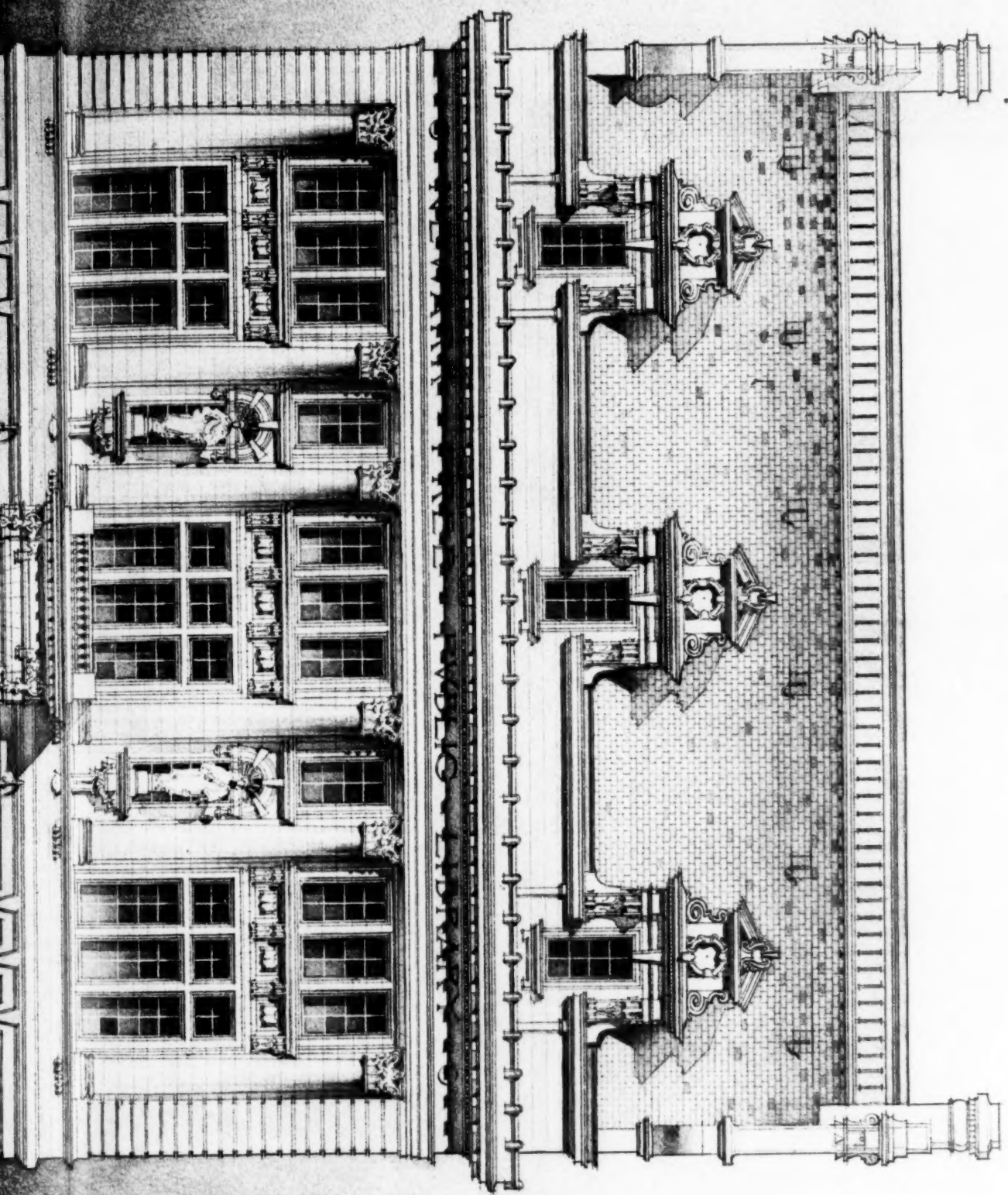
SECOND FLOOR.

COMPETITIVE DESIGN FOR THE NEWARK FREE PUBLIC LIBRARY, NEWARK, N. J.

HOWARD & CAULDWELL, ARCHITECTS.

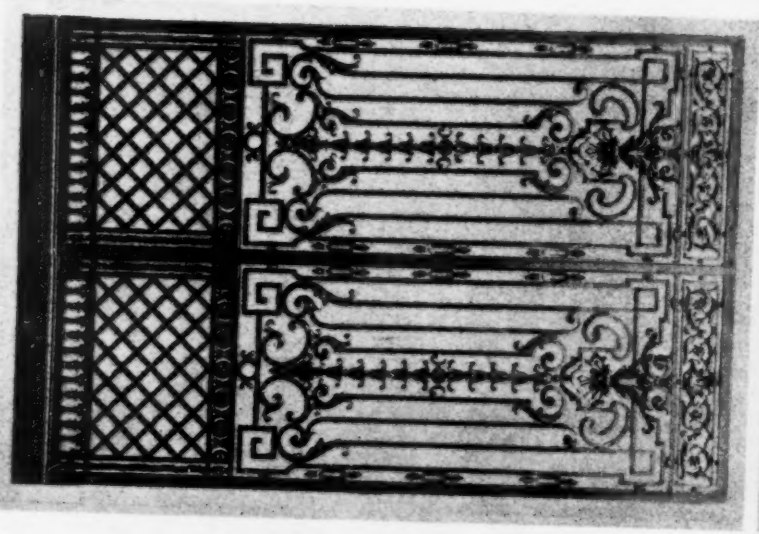
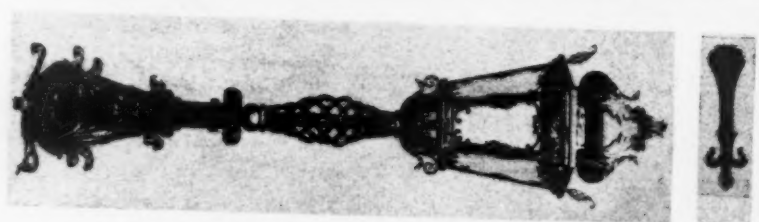
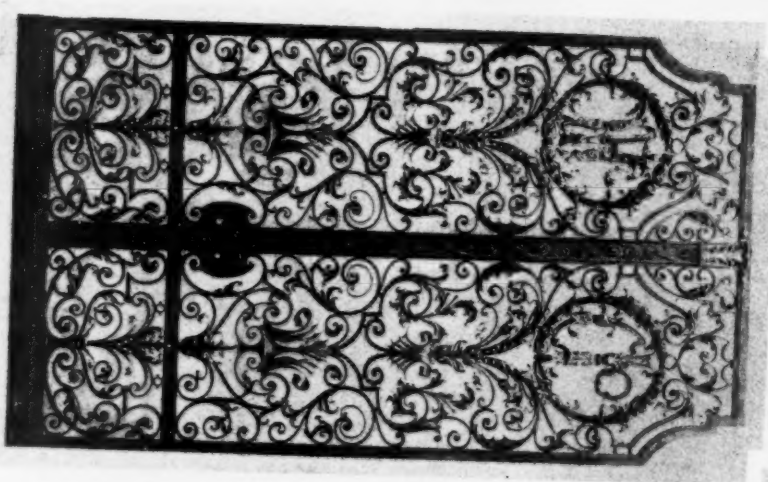
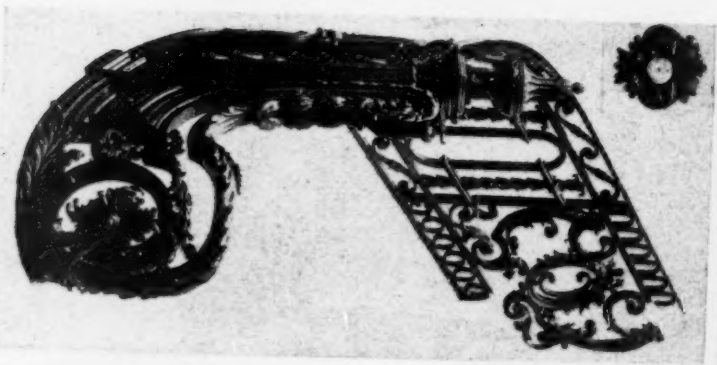
AMERICAN ARCHITECT AND BUILDING NEWS. MAR. 19, 1895.

No. 1160.



ART in IRON
by
JNO. WILLIAMS,
544-556 W. 27th St.,
New York.

H.B. STILLMAN



TRADE SUPPLEMENT.

REGISTERED TRADE MARK

