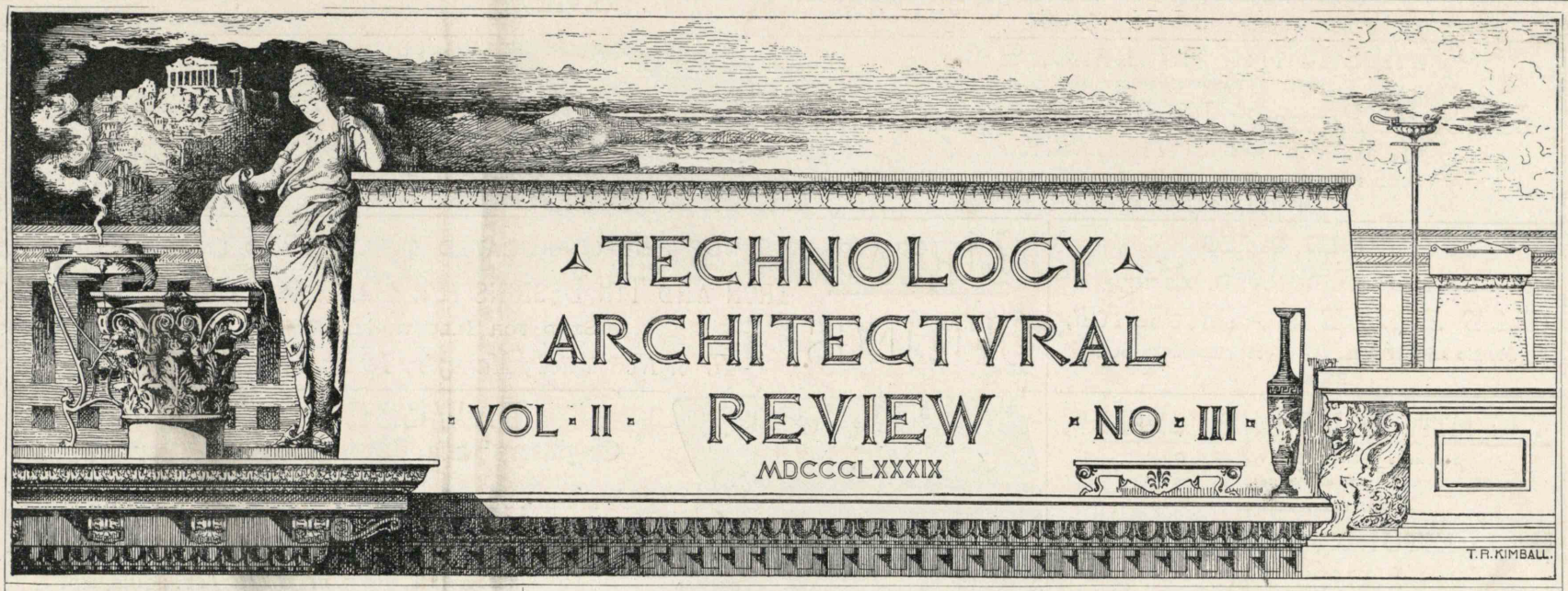

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BOSTON, MASS.

FRANCIS A. WALKER, President.

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THE COURSE IN ARCHITECTURE

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DEPARTMENT OF ARCHITECTURE,

Massachusetts Institute of Technology.

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ACADEMIC TRAINING IN ARCHITECTURE.

THE term "academic" is popularly considered as opposed to the term "eclectic;" that is, it is supposed to represent a certain straightened and positive attitude of mind, induced by traditional or other training quite inconsistent with freedom of choice and diversity of motive. From this popular idea, fostered by a host of so-called necessary processes coincident with an academic training, has grown the attendant idea that academic methods tend toward results that lack spontaneity and are burdened with precedents, — that, in fact, to be academic means at best scholarly plagiarism, and that the letter of a past law is of more importance than the spirit of a present need. Naturally, such a conception creates opposition to such training, and from two very different classes of minds, — those greater in number but insignificant in importance, who treat architecture as a kaleidoscope whose merit depends upon the *éclat* of its changes, and those who rightly consider that all good architecture is the development of the practical need made beautiful in the simplest way, without appeal to precedent except for suggestion, and that in consequence academic training is superfluous and apt to be a hindrance.

This latter class deserve first attention. No thoughtful architect questions their position or their sincerity; the difficulty is in their acceptance of the popular idea of academic training and its results.

The purpose of the academic training has been and is at its best to cultivate the sense of the highest essentials of architecture; and such cultivation is naturally slow and step by step. Its purpose is to develop a knowledge of the best that has been done and the conditions under which it has been done; and such knowledge is not to be obtained without progressive study.

Its purpose is to implant such a standard of attainment by the constant association with the best things that less results will be unsatisfactory, and the ideal will in consequence always be in advance of the achievement, and smug self-complacency will cease. If in furthering these purposes, academic training in architecture has tended strongly toward the so-called classical styles, it is because in these styles are found the epitome of the great architectural virtues; that in them development of practical motive, refinement, proportion, scale, and application of ornament are found in their most concrete form; and that these styles are in consequence an expression of as high an intellectuality as is obtainable.

But whoever has so far misconceived the academic purpose as to suppose that the result of past conditions is the precedent *in toto* for present conditions, and that proportions are transferable, has lost the very spirit of academic training, which is to cultivate discrimination and sense of virtues, and not to provide ready-made architectural clothing.

If, on the other hand, as is rather apt to be the case, the academic training lacks breadth, inasmuch as it fails to cover more than a portion of the historical pageant of architecture, this must be ascribed to the limits of time and space, and not to its intention. A training in architecture must be an abridged training, and it is better to study root-forms than attractive verbiage.

As for the class of architectural sensationalists, who plant gleanings from all fields, and whose very flowers bear a strange resemblance to rank weeds, any objection they may bring to an academic architectural training assumes the shape of a boomerang; but they have one virtue, that of vitality. Whatever else they may be, they *are* alive; and their very vivacity makes training of any kind irksome to them. To such as these restraint is an outrage, development a superfluity. Yet from just such material comes the larger part of at least the domestic and civil architecture in America, and the public are content. For the public have no standard but that of difference. They know they do not like their neighbor's house, and fondly hope if their own is only different it may be more to their taste; and the quiet, straightforward development of the plan, simply carried out, which is induced by the academic training, if it is accompanied by this very vitality of temperament that is so inherent in Americans, will produce the best of architecture, because it associates the very fundamental qualities of all great work — intelligent, restrained effort, and vitality and versatility of conception.

From this very erratic, eccentric, but fully alive architectural invention may come the highest results, but be sure it will take the academic training to produce them, and no other method will prove other than futile.

In all scientific and literary studies, if the work performed has power, it is primarily from the strength of a great idea, and secondarily from the manner in which that idea is expressed.

In architecture this is essentially true. The possession of the power to create is an individual gift, so rare and so beyond price that it cannot be too highly cherished; but the very worth of this power is dependent upon the manner in which it is used, and the clearness of its expression. Whether for good or evil, architecture has greater influence upon the public mind than any of its sister arts.

It uses the entire gamut of virtues and vices. It is the exponent of dignity, grandeur, ostentation, vulgarity, delicacy,

luxury, brutality, and the commonplace, and a dozen kindred qualities. Protean in its possibilities, it is constant and conspicuous in its effect. No other art is so perpetually a part of daily life, and stamps its character upon so many minds. Nor is there any other whose permanence is so assured, and of which the influence is so continuous and so reiterant.

It is therefore a very powerful moral agency, and besides expressing the character of its creators, it influences the character of their successors. It behooves the architect, therefore, to leave a heritage that shall be ennobling and not debasing, and to realize that he is creating what will be a more enduring lesson to the people and to his successors than that of any other art. The responsibility laid upon him is great, and his attitude toward it should be serious. No amount of study and research should seem useless to him ; and the necessity of a trained and cultivated mind to grapple with a profession of so great importance would seem to be an inevitable conclusion. Training, *par excellence*, is the end and aim of the academic method. It is plain that it is impossible to ignore it and reach the highest attainment.

THE LIBRARY OF ST. MARK.

[See Supplement, Vol. II., No. 1.]

Translated from the Description of Sansovino, Architect.

In front of the Palace is seen the modern building called the Library, whose Ante Sala served as a public studio supplied with books by the Senate, from which youths might study Greek and Latin letters.

Here is preserved the Library of St. Mark, than which there is none more precious in Italy ; for as early as the time of Francesco Petrarca, was begun the custom of collecting copies of rare books, this having been suggested by the Doge Dandolo who wrote the history. Petrarca gave his collection to the Senate, and afterwards the Cardinal Bessarioni, who died in 1473, bequeathed his library which at this time was one of the most valuable collections in Europe, for at the time of the capture of Constantinople, having been so charitable to the fugitives who fled to Italy, he had been able to collect a great many rare books on various subjects, which had been scattered by the Greeks. In making this bequest he requested that there should be a building erected to be devoted to the purpose of a library. After this many other distinguished men presented their libraries to the Senate. At first all these books were stored in the Ducal Palace, and afterwards were removed to the upper part of the Church of St. Mark, but here they were not well cared for, many were lost and some stolen.

Appearing necessary to the Senate in order to preserve the books and carry out the request of Cardinal Bessarioni, in the year 1536 they commissioned the Procurati of the Church to search for a site on which to build the Library, and also plans necessary. This commission reported, recommending and furnishing a model by Sansovino, and suggested the space in front of the Ducal Palace, then occupied by small shops and hotels, as a site for the building. Sansovino had not only considered the design for the Library in front of the Palace, but also all the buildings surrounding the Piazza, that is to say, beginning at the Campanile and continuing to the Church St. Geminiano, now destroyed, and then continuing again to stop against the clock tower. As this site in front of the Palace was so fine and adapted to an imposing building, Sansovino resolved to make a design after the rules of the ancients, of the Doric and Ionic orders, greatly enriched by strong cornices, friezes, etc., and he set to work giving all his attention to the design. One of the first difficulties which he met with was that of designing the angle of the return, always a problem in following exactly the ancient proportions. This part was left unfinished that he might study it longer, and wishing to make it a successful feature and invention, as he says, he sent drawings of the corner to the best architects of Lombardy, Tuscany, Rome, and Naples, hoping that he might receive suggestions. The replies from these invitations were unhelpful and yielded nothing. Finally after some years, as the Senate made him aware of their discontent in seeing the building in this unfinished condition, Sansovino conceived his design and made a wooden model, which, when presented to the Senate, was accepted with great satisfaction by them and all others connected with art.

As has been said the façade consists of the Doric and Ionic orders, with arches. The ground floor is planned with a portico extending the entire length of the building and returning at the ends, and at the back of the portico there are shops with ample space for traffic. In the spandrels of the Doric order there are figures representing rivers, they hold vases; and the keystones are sculptured with heads of lions. The frieze of the entablature over is decorated with quadrants, one containing the lion of St. Mark, and others shields and helmets. Between the arches there is six and a half feet, and to the centre of columns eight feet (Venetian measure). Over the passage there is a barrel vault of elliptical form richly panelled in stucco, which was to have been painted and gilded. Over the Doric order is a beautiful balustrade interspaced by pedestals from which spring the Ionic columns, which enclose windows furnished with smaller columns of the same order. In the angles of the arches are sculptured women in a half-sitting position, representing Victories. The keystones of the arches are sculptured with heads of women and lions, interspaced alternately.

The final principal cornice is proportioned to the façade. The frieze is unusually high and beautifully decorated with cherubs, garlands of fruit and flowers, and heads of women and lions, and pierced by lozenge-shaped windows directly over the openings below. Over the cornice there is a balustrade the whole length of the façade, and on the pilasters over each column there is a statue larger than life size. The pilasters at the angles are surmounted by a pedestal and obelisk rising much above the figures over the columns. The second story is divided into two great halls with vaulted ceilings modelled in stucco with painted and gilded decorations, and the walls are decorated with pictures by the best contemporary masters.

This is the brief description of the Library of St. Mark by Francesco Sansovino, the architect, revised by Giovanni Stringa, given under the title of Public Works in Venice in " Venetia Descritta."

Sansovino never carried out his design for the entire group of buildings surrounding the Piazza of St. Mark, but an architect named Scamozzi did the work sometime after the Library was completed. The design of the Royal Palace adjoining the Library is much influenced by Sansovino's work, and perhaps not inferior to it, but it is to be regretted that Sansovino could not have completed his scheme. Notwithstanding the general satisfaction regarding his design for the Library, there was great discontent owing to the delays in finishing the work, and more later, for the vaulted ceiling of the Ante Sala was so poorly constructed that it collapsed, and the Senate punished Sansovina by a short imprisonment. Fortunately such circumstances are overlooked in the history of a beautiful building, and the true result of the work and its praise are never forgotten.

The influence of Sansovino's design was felt throughout Venice; the Venetian style which had become degraded was dropped, and the new palaces were designed with the motives and details of the Library. A building so pleasing in mass, so rich and sparkling in detail, and so soft in color, could not fail to have its effect upon the Venetians, who were so sympathetic with the great works of their Titian and others. While the architecture of the Library is

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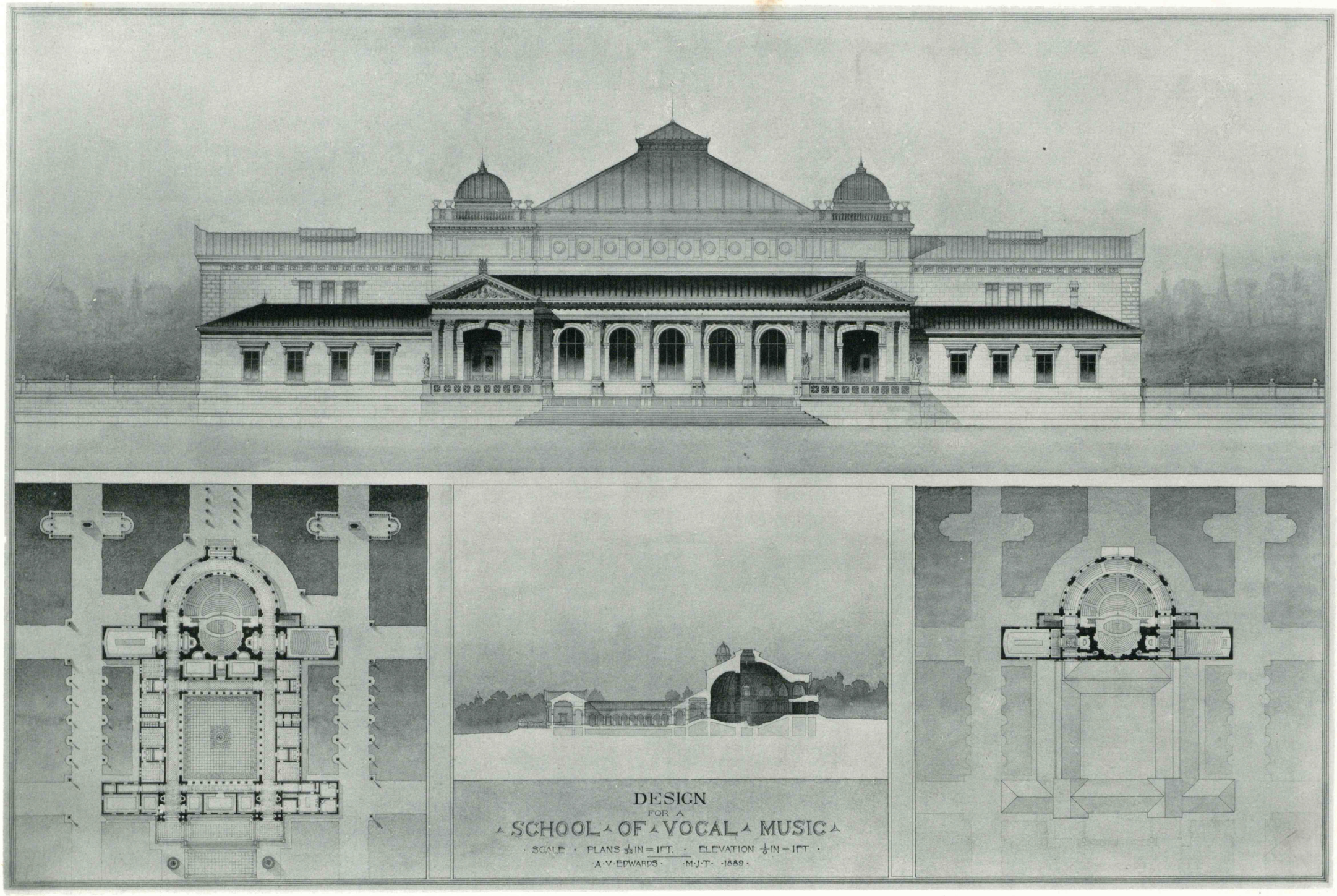

DESIGN FOR A SCHOOL OF MUSIC.

ARTHUR V. EDWARDS.
FOURTH YEAR.

HELIOTYPE PRINTING CO. BOSTON.

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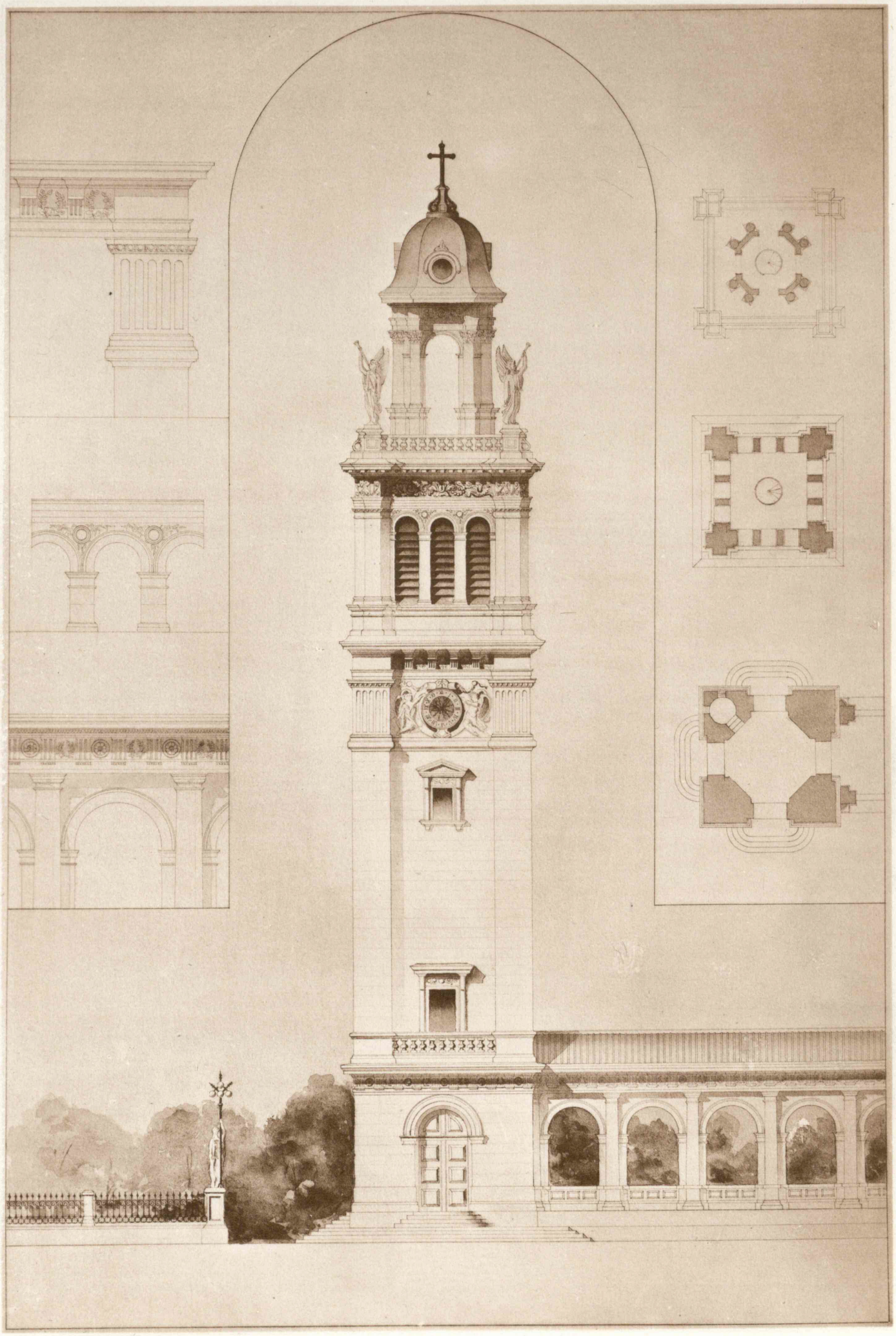
THE M. I. T. ARCHITECTURAL SOCIETY.



FIRST MENTION,

SOPHIA G. HAYDEN.

A CAMPANILE.

MONTHLY COMPETITION,

THIRD YEAR.

HELIOTYPE PRINTING CO., BOSTON.

PUBLICATION OF
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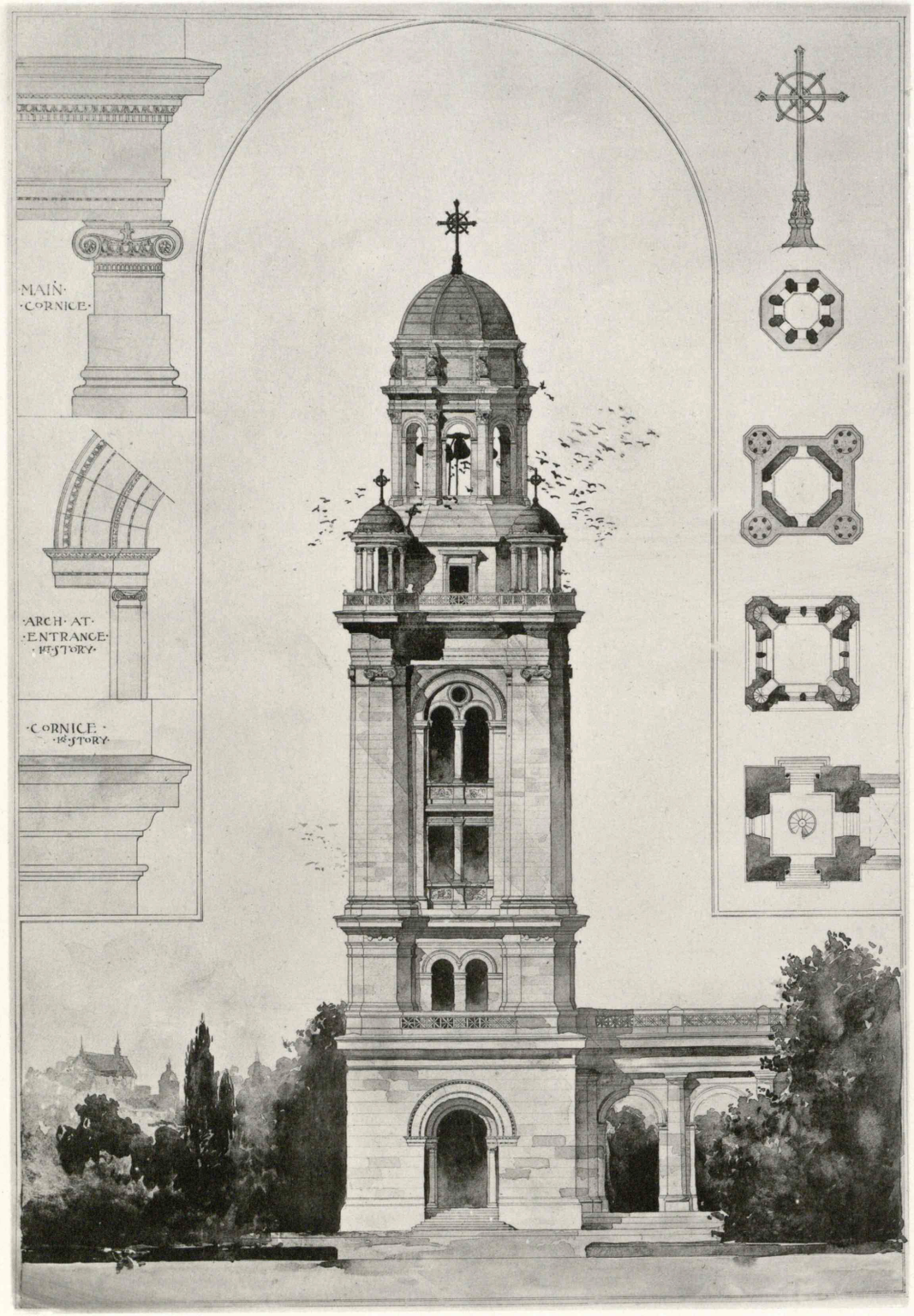
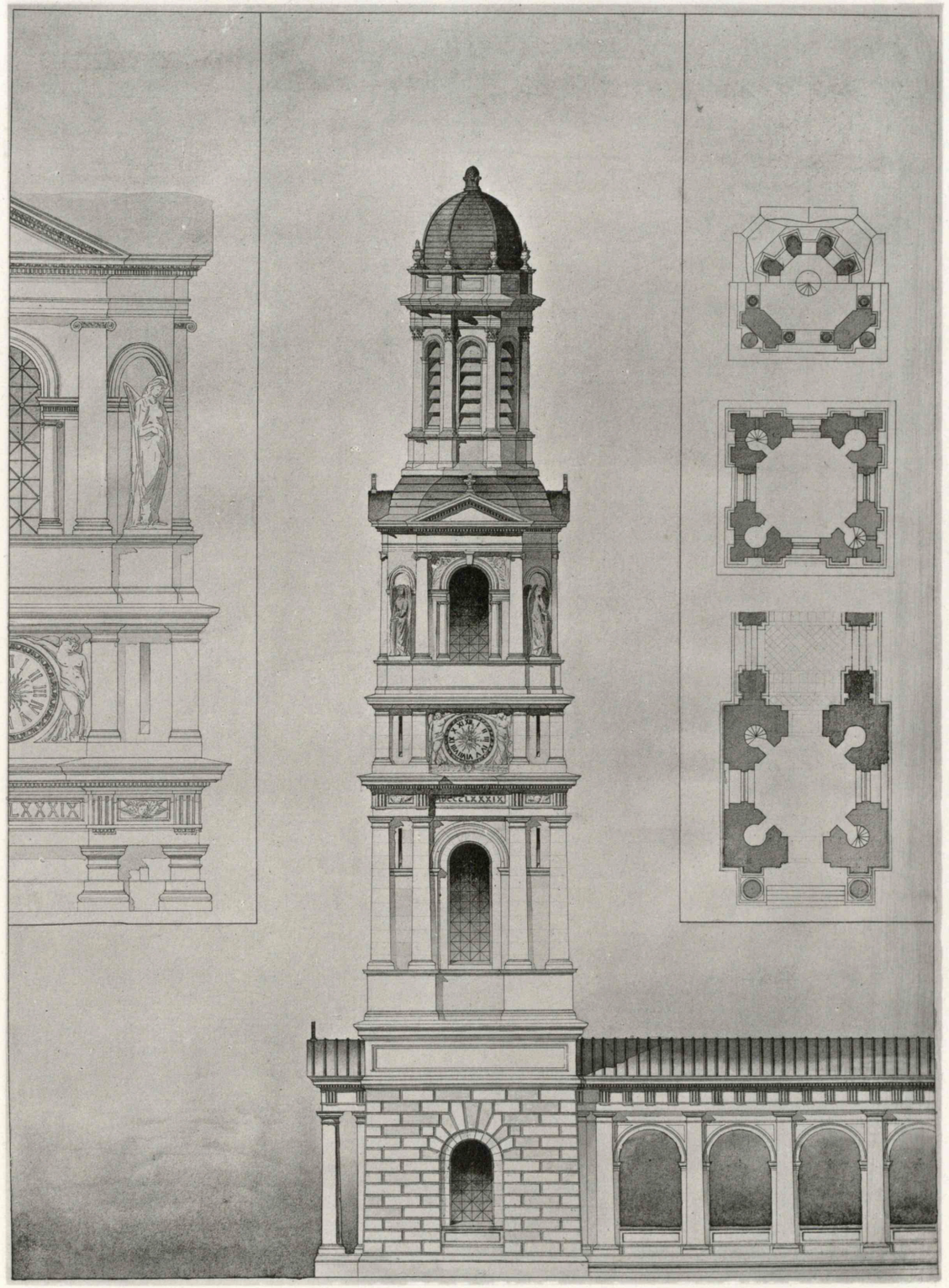


SECOND MENTION,

HUBERT G. RIPLEY.



THIRD MENTION.

LYMAN A. FORD.

A CAMPANILE.

MONTHLY COMPETITION.

HELIOTYPE PRINTING CO., BOSTON, MASS.

THIRD YEAR CLASS.

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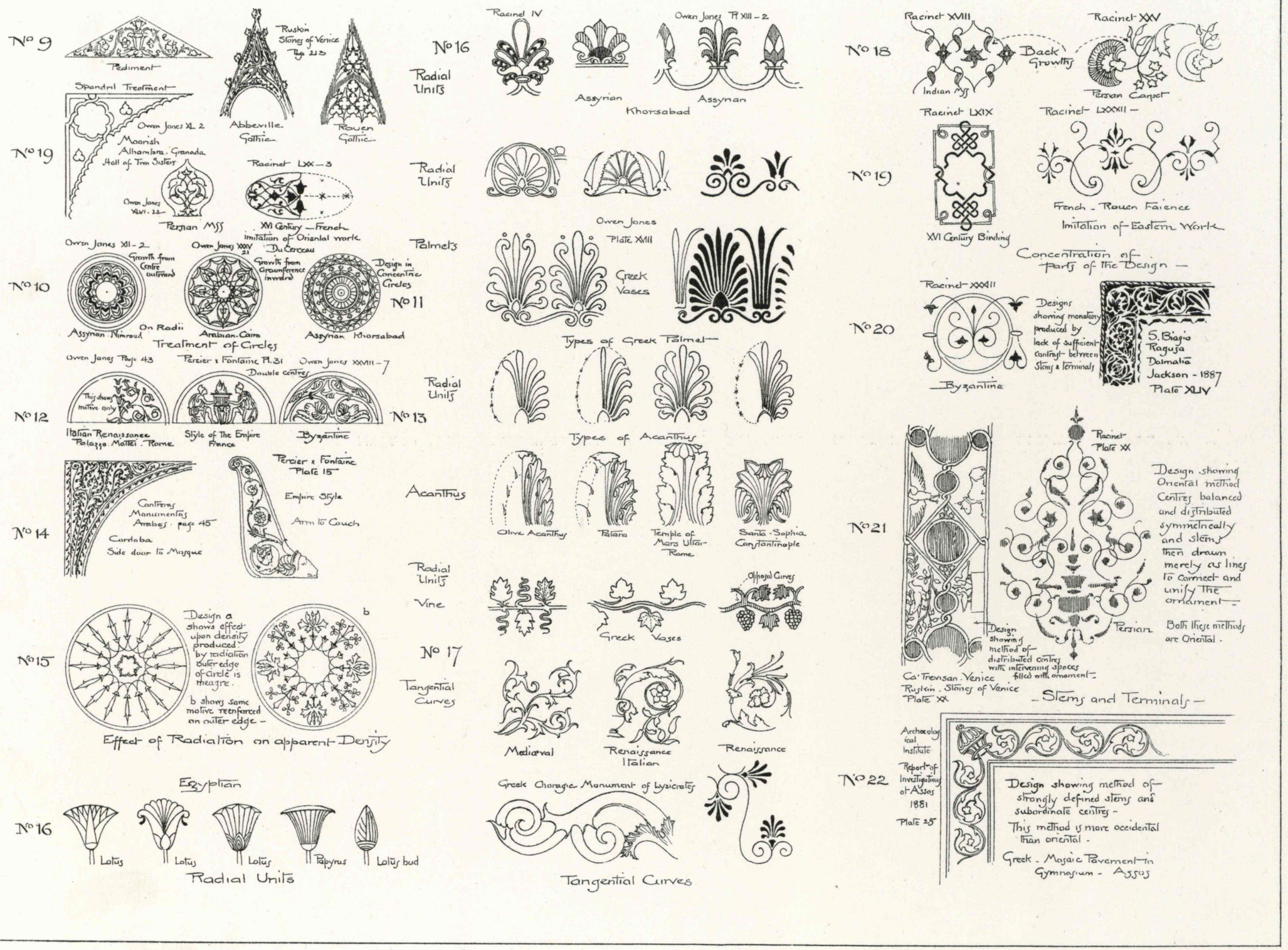
A STUDY OF DECORATION,

BY

C. HOWARD WALKER.



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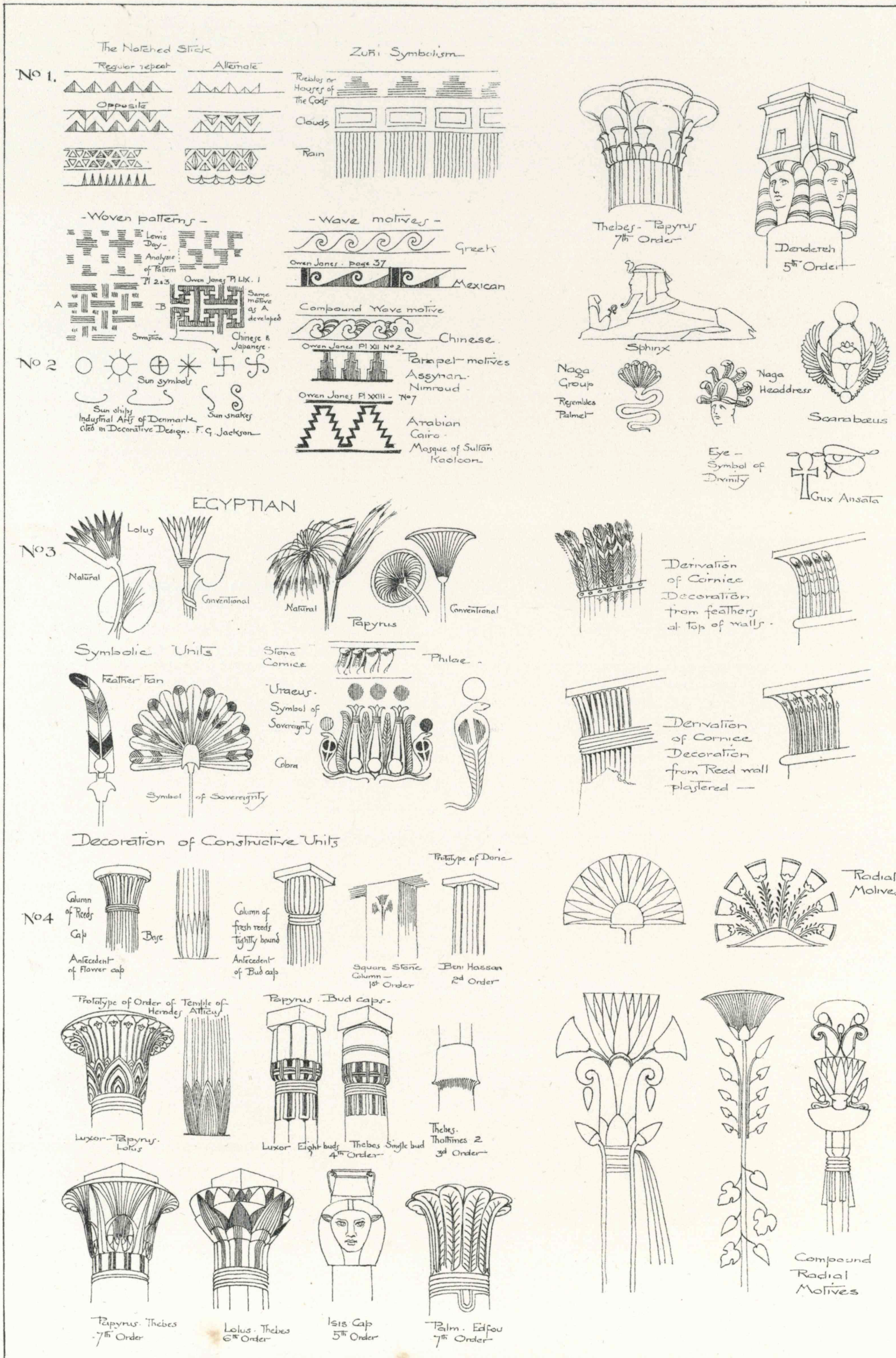

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A STUDY OF DECORATION,

BY

C. HOWARD WALKER.

so well considered, it is plain to see that the details and sculpture were never forgotten; it was the work of a decorative sculptor, and it is evident that the greatest attention was given to this part of the work. The architectural details are executed in an inferior manner to the sculpture, and the beautiful qualities of the Istrian stone, of which the façade is built, are not brought out in the architecture, as it is roughly cut; but all the sculpture is finished smooth and given every advantage of prominence.

The façade of the Library has been well preserved, no part of it being especially defaced except some of the quadrants containing the lion of St. Mark, in the frieze of the Doric order; this was done by the Austrians when they occupied Venice. After their departure the building was opened into the Royal Palace, and is still used for the same purpose. The main hall at the north end of the building appears the same as it was originally built and decorated, while the south end of the building has been transferred into sleeping apartments. The building is now controlled by the royal family, by whom it is occupied a short time every summer; but it is opened to the public two days of each weeks, and although many travellers fail to visit the Ante Sala, none can help admiring the beautiful façade on the Piazzetta, which I have enjoyed studying.

S. W. MEAD.

SKETCH OF THE LIFE OF SANSOVINO.

Translated from Monuments Anciens et Modernes

PAR JULES GAILHABAUD.

JACOPO TATTI, born at Florence in 1479. In his early life he showed so pronounced a taste for the arts of design that his father, recognizing the need of fostering so fortunate a disposition, placed him as a pupil with a skilful sculptor, Andrea Contucci, surnamed Sansovino, — because he lived upon the hill of that name. This master, realizing the fame that would accrue to himself by cultivating a talent of which he already foresaw successes, gave him most assiduous care, and there grew an attachment between Andrea Contucci and Jacopo Tatti like that between father and son; and it was this sentiment, later becoming known, that public opinion recognized by adding to the family name of Jacopo the surname of his master. Andrea del Sarto and Sansovino soon became friends, and led by a common enthusiasm, though for different arts, applied themselves assiduously to the study of drawing.

It is not our intention to note here the numerous works of sculpture that Sansovino produced in his youth which place him in the front rank among the artists of his time. We propose only to collate in a few lines the principal facts relating to the life and works of this celebrated man, — facts which we borrow from the excellent account of M. Quatremère de Quincy.

The study of drawing, which contributed so largely to Sansovino's success and progress as a sculptor, also gave him a taste for architecture.

This taste would only be developed by the chance acquaintance between Sansovino and Julliano de San Gallo, who was at this time in Florence, and who led him to go to Rome, where Bramante, whose friend he became, gave him numerous opportunities to study and comprehend the antique, and to devote himself to works of all kinds. But overwork forced him to return to Florence, where his native air renewed his health.

In 1515, the entrance of Pope Leo X. into that city became for artists the subject of a multitude of works of decoration, and to this event Sansovino owed his introduction to the inventive qualities of architectural design. He was commissioned to design triumphal arches; but he distinguished himself most by a more important decorative work that he shared with his friend Andrea del Sarto, the temporary façade of the church of S. Maria del Fiore, which he made of wood. This work so pleased the Pope that he commanded him to try his talent anew upon a design for the church of S. Lorenzo; but he did not receive this commission because of the jealousy of Michael Angelo. Sansovino, being located at Rome for some years, executed several statues, and strengthened himself in architecture by work which began to give him reputation. The need of renewing his health made him return a second time to Florence, which he only left to go to Venice. Two circumstances combined to keep him in that city, which became for him a second home: the protection of the Doge Gritti, and his friendship with Pietro Aretino and the celebrated Tiziano.

But the death of Buono soon occurred, and Sansovino obtained the position and emoluments that the former architect of the Procurati enjoyed. To this period belong the restorations which he made to the cupolas of St. Mark. From this time on, great enterprises gave him opportunity to use all his talent. He is ordered, in 1532, to finish the building of the Fraternity of the Misericordia. Then he commenced, under the auspices of Doge Gritti, the construction of the church of S. Francesco della Vigna. The old building of the Mint threatened to fall and had to be rebuilt, and Sansovino was chosen by the Council for this work. During the year 1532 a fire destroyed a part of the palace of the Procurator Cornaro, and soon in place of these ruins he raised a grand and magnificent monument. Finally, came the decree which ordered the construction of a library to serve as a place to deposit the precious collection of books given to the republic by Francesco Petrarca and Cardinal Bessarioni. The Senate wished to testify its satisfaction with the architect of the Mint, ordered him to present a *projet*, approved it, and it is to the wisdom of his plan and the beauty of his designs and to the genius of his conception that he owes the honor of erecting the monument that is regarded as his masterpiece.

So many fine works spread his reputation afar; and Rome, which had seen his talent in architecture develop, wished to obtain him again. On her part, Florence, where he had begun as a sculptor, also solicited him. But Sansovino, wishing to put the finishing touches to all the great works he had begun, resisted these appeals. New work came to retain him; and he is commissioned successively to build a magnificent palace for Giovanni Delphino, as well as that of the elegant Loggia which adorns the foot of the Campanile, and the church of Santo Spirito and that of Santo Fantino.

But Fortune did not wish to smile always on Sansovino. An unfortunate reverse that he experienced, while occupied with the last work on the Library, caused his imprisonment, from which he only escaped with difficulty and by aid of the protection of an ambassador and the devotion of his friends.

As it is impossible for us to enumerate the long list of monuments raised by this architect, which are all more or less remarkable for some particular merit, we will still cite the Scala San Giovanni degli Schiavoni; church of San Martino, near the arsenal, and that of the Incurabili; the Fabbriche Nuove on the Grand Canal; and the church of S. Geminiano, at the bottom of the Piazza San Marco. We also owe to Sansovino many other works not less important, among which are the mausoleums which he executed, — the tomb of the Archbishop of Cyprus in the church of San Sebastiano, and that of the Doge Veniero in San Salvatore; and finally we ought to mention the beautiful doors of bronze which he designed and executed for the Sacristy of San Marco. Sansovino died at the age of ninety-one, 27 November, 1570.

DEPARTMENT OF ARCHITECTURE.

MONTHLY COMPETITION.

FOURTH YEAR REGULARS AND THIRD YEAR SPECIALS.

PLATE I.

Programme: A SCHOOL OF VOCAL MUSIC.

THIS institution, which is supposed to be a branch of a National Conservatory of Music, would be especially devoted to the training of the voice.

It will provide for the following main features: —

1st. A large concert-hall.
2d. Eight class-rooms, four for men and four for women.
3d. A large hall for the choruses.
4th. A library of music.

Additional minor features will be, — a vestibule, a director's office with adjoining antechamber, a lodging for the janitor, a room where pupils can leave their music, cloak-rooms, and toilet-rooms.

The concert-hall will hold about six hundred spectators. The space reserved for the orchestra and chorus must be spacious, and close to it will be arranged two foyers, or green-rooms. Porticos will connect all parts of the establishment.

An enclosure, planted with trees, or decorated with statues, etc., will be managed so as to protect the classes from outside noise. The edifice is to be treated in a simple and effective manner. The plot of ground assigned to it will not exceed three hundred and twenty feet in any dimension.

Required: A preliminary sketch of plan and elevation on a scale of one thirty-second of an inch to the foot; finished drawings consisting of the principal elevation on a scale of one eighth of an inch to the foot; two plans and one section on a scale of one sixteenth of an inch to the foot.

E. LÉTANG.

JUDGMENT.

NOTE. — At the time for judgment, the *projets* were not completed and no mentions were awarded; but in commenting upon the unfinished designs, the critic placed that of Mr. J. Lawrence Mauran first. When the drawings were subsequently finished, the design of Mr. Arthur V. Edwards was found to be the most satisfactory handling of the problem, and was therefore selected for publication.

NOTES FROM CRITICISM.

IN this problem the plan is of the first importance, and it has been extremely well worked out. It is straightforward and easy to read, the axes are clearly preserved, the parts generally well distributed, and the points needing strength are strongly marked and emphasized with the conventional treatment of niches and statues.

The principal fault seems to be the failure to grasp the opportunity for a monumental entrance; this is evident in plan and elevation. As shown, the broad steps lead up to a grand arcade of windows, and the entrances are unimportant in treatment, and off at one side; and no idea of the beauty of the interior can be formed until one or the other portico is reached. Had the entrance been on the main axis of the building, and treated monumentally, a grand central vestibule, or hall, would give easy access to the administration-rooms and corridors, and give picturesque views of the court and porticos. This central entrance would call for a grand motive, and the proper subordination of the wings, and add interest to the mass of the building. If two entrances are preferred, they should be reached more directly, and open into a large vestibule, and be strongly accented in elevation. As shown, the high central rooms between the two entrances do not explain themselves.

The general arrangement of the concert-hall and the subordinate parts is very cleverly worked out, but the library and small hall wings would look high and thin, and not properly subordinated, and tied in to the general mass of the building if seen in perspective.

As a whole, the exterior is quiet and dignified in treatment, and pleasing in detail, only a little more study in the subordination of minor parts to the general mass, and a more dignified arrangement for the entrance, is needed to make the design worthy of the greatest praise. The drawings are well presented, and the plan especially so, with proper emphasis on important parts, as shown by walls and mosaic.

From the study of these problems, one must feel that in designing in elevation there is great risk of forgetting the effect which perspective will have upon the design; and this consideration cannot be too strongly urged upon the students, — remember that you are designing buildings, not pictures!

A. W. LONGFELLOW, JR., *Critic.*

MONTHLY COMPETITION.

THIRD YEAR REGULARS AND SECOND YEAR SPECIALS.

PLATES II. AND III.

Programme: A CAMPANILE.

A CAMPANILE is a tower for the reception of bells. In Italy such an edifice is often separated from the church, as, for example, at Cremona and Florence.

The structure is supposed to be the completion of a large parochial church, being erected at one side and connected with it by an open arcade. The height will be about one hundred and fifty feet. The upper part is intended to receive the bells, and will be designed accordingly. One or more stairways may be provided; but it is suggested that they be arranged so that the main architectural lines shall not be disturbed.

The style of this Campanile should harmonize with that of the church, which is supposed to be Italian Renaissance. [See Le Tarouilly's "Edifices de Rome Moderne."] This will afford excellent opportunity for the application of classic architecture.

No dimension, except that of height, is stipulated.

Required: preliminary sketches comprising plan of first story and elevation showing portico, on a scale of one sixteenth of an inch to the foot; finished drawings consisting of at least three plans, taken at different heights, on a scale of one sixteenth of an inch to the foot, — principal elevation on a scale of one eighth of an inch to the foot; details of principal features on a larger scale.

E. LÉTANG.

JUDGMENT.

First Mentions,

First	SOPHIA G. HAYDEN.
Second	HUBERT G. RIPLEY.
Third	LYMAN A. FORD.

Second Mentions,

First	CHARLES H. ALDEN, JR.
Second	ROBERT T. WALKER.
Third	LOUIS H. BOYNTON.

Twenty-one designs in Competition.

NOTES FROM CRITICISM.

FIRST MENTION. This design was placed first on account of its general charm of outline, and the refinement and thought shown by the designer. It owes its success largely to the reserve and thought shown in composing the masses, and in the way in which the successive parts grow out of one another, and become more detailed and open as the tower rises.

The base would have been improved by a more massive treatment of string-course, as in the Second Mention.

The long, plain shaft of the tower between the basement and the clock story gives great distinction and interest to the design, and tends to give an upward movement to the tower which is very effective. At the same time this treatment concentrates the interest in the upper part.

The weak part of this design is the cupola itself, and the outline of the belfry story with the statues above; these would fail in perspective to continue the pleasing pyramidal lines of the elevation. The belfry story would be too much cut off at the corners if seen diagonally, while all the horizontal mouldings would be increased in projection.

In the Second Mention the transition to the smaller octagon of the cupola is cleverly worked out, though seen diagonally the cupola is hardly important enough.

The design is "rendered" with great refinement and feeling, though the details are not as well conceived as the general design.

SECOND MENTION. The general effect of this design is pleasing and strong. It was placed second on account of its lack of reserve and thought as compared with the First Mention. In perspective the tower would have a tendency to look low and heavy. The low, strongly marked story above the base tends to increase this effect, while the large, useless windows detract from its strong, tower-like appearance.

The pilaster treatment at the angles would cut back too much from the line of the tower, while the horizontal cornice lines would increase in importance and tend to lower the tower. This makes one regret that the long pilasters do not start at the basement string course. The drawing is charmingly presented, and the details in general very good and well considered.

THIRD MENTION. This design, though less individual than the other two, shows a free but careful study of the orders, and is happy in general outline and detail, though the Ionic story would be too much cut away by the octagonal treatment, and cause the upper part of the tower to look thin, and the low clock story rather tends to lower the tower as well as the clock. The first three stories come together well. The porch, which serves as an entrance, can hardly help the design if seen in elevation. The large windows, low, as in the Second Mention, seem out of place in the middle stories, and detract from the design.

A. W. LONGFELLOW, JR., *Critic.*

THE STUDY OF DECORATION.

(*Continued from No.* 2.)

TENDENCY OF DESIGN AS INFLUENCED BY MATERIAL.

THE conventionality of early design is also produced by crudity of material and tools, and by lack of technical skill. In cut work a sharp cutting point is alone used, and by the strength of the hand only, without the aid of mallet or other auxiliary power. As a result, the cut surfaces and detail are both small. In brush work, the brushes, if used at all, are small, and in most cases the color is put on with a hard point or some sort of spatula. Such work is necessarily broken in detail and has no gradations of tone. Upon vases the outlines are scratched with a fine point and the surfaces between colored, the scratched lines aiding in controlling the colored surface and preventing the color from spreading beyond its proper space. (Pl. V., No. 1.) All the woven work of withes or of straw has its patterns necessarily composed of right-angled forms ; and this characteristic has become so indigenous in Oriental work that even when the mesh of the fabric becomes smaller, the same squaring of forms is continued, and most Oriental carpets and rugs still have angular units of decoration. This is also partly due to the use of upright hand looms which would require constant and delicate changes of the shuttles to produce curved lines in the patterns. With clay, metal, and glass begins the employment of those subtle curves which are later carried to their highest development by the Greeks. It is easier to get these materials to adopt natural curves produced by gravity than geometric curves carefully made accurate, and the result is certainly more satisfactory ; so that the work in all ductile materials seems to have attained a higher degree of art than the contemporary work in stone, in wood, or in painting. This appearance of greater skill is however largely due to the greater tractability of the material. With greater facility in using material comes greater freedom of line ; and when the point is superseded by the brush, the vigor and strength and also the delicacy of curves are very rapidly developed. It must, however, be remembered that all early work is in the alphabetical stage, that units are isolated, that ornament is separated, and that it is well within the historical period before any continuity of intention is strongly felt, and quite within twenty-five hundred years before much modulation of form or color begins to be used. Notwithstanding this, all the early work is decorative, — a result which it owes to its simplicity, its sincerity, and to the fact that it has not become sufficiently sophisticated to pretend to be something it is not, and to a limited range of colors, beyond which it was impossible to go from lack of material, which colors were largely primaries, and used in a mosaic fashion, thus preventing disagreeable and inharmonious half-tints.

SYMBOLISM.

The use of symbols in art is coexistent with the advent of man into history. Whatever records remain of the early historical epochs are largely relative to religious observances and customs. Actual portrayal of the object of adoration, and in the event of the impossibility of such portrayal the adoption of some indicative sign as a substitute, is characteristic of all early forms of worship.

This sign or symbol is at first a fetich, — a thing to pray to, to placate, to conjure by. It implied to the barbaric mind not only the god that it represented, but was supposed to possess inherent in it all his attributes.

With such reflected power the symbol became itself an object of worship, and was dignified and exalted both by the position in which it was placed and by the development and enrichment it underwent. Whatever to primitive man was mysterious or wonderful, was to be feared or to be enjoyed, became the subject of this idealistic and concentrative process of mind, which converted diffusive natural agencies into concrete possibilities, and which then created an alphabet of symbols to express them. It would be an endless task to attempt to enumerate these symbols and to show their ramifications ; but as examples of symbol-motives in decoration there are several types worth mentioning. Naturally, primitive worship would first turn to manifest facts of nature, and chief among them to the sun, moon, and earth ; and there are found in all early religion a sun god and earth and moon goddesses. The Isis and Amun-Ra and Osiris and Harpocrates of the Egyptians, the Tanit of the Phœnicians, the Helios and Selene of the Greeks, and Phœbus and Diana of the Romans, are but a few of the many personifications of sidereal bodies. With each is found its symbol. Next comes the mystery of life and its continuity, which are symbolized especially by the Egyptians and the Buddhists of to-day. Whatever in nature possesses a distinct attribute of beauty or of power, this attribute is seized and made the exponent of that power, until at length is developed the system of hieroglyphs of the Egyptians, a language of symbols.

The very concentration and simplicity necessary to make a symbol intelligible produce a conventionality that is always decorative. Here is the maximum of expression with the minimum of effort, — the very fundamental law of decoration.

Of the sun symbols (Pl. V., No. 2), the one most frequently used is the disk, or circle, which is often used in connection with other signs, as the Egyptian winged globe, the symbol of divinity. Another has radial lines, as rays, about it, the rays without the disk, such as the Swastica of the Jains. There is also a sign known among the Norse as the sun ship, symbolizing the progress of the sun through the heavens. This form is very frequently used.

EGYPTIAN.

With the art of Egypt begins the study of historic ornament. It is individual, and seems to have been a development from observation and not from precedent. It is to a pre-eminent degree symbolical, and consequently conventional. It has but few units of ornament, and these are simple, and are applied to all varieties of object, and to all materials.

Egypt during the early dynasties, including the tenth dynasty, is an agricultural nation, with its interests chiefly in Lower Egypt, about Memphis. This period, of something like thirteen centuries from about 4000 B.C. (which is the period of the pyramid builders, and of the tombs at Memphis), is one comparatively unbroken by wars, in which the religious cult developed, and which is marked by a growth of hieratic customs, both of religion and of life, which influenced Egypt until its absorption by Rome. Pre-eminent among these customs is that of building the tombs upon the western banks of the Nile, while the cities are upon the eastern banks. Everything in the history of Egypt centres about the Nile. Upon its annual overflow the very life of the nation depended. It was alike the creator, and the destroyer of the land. The seasons were gauged by its fulness, and man, fed by its abundance, using it for his festivals and his pleasures, was at last carried toward the setting sun across its waters to his tomb. Through all decoration at this early date is felt the influence of the river and its products.

The lotus and papyrus, which grow on its banks, are made the characteristic emblems of Egypt, — the symbols of the food for the body and for the mind, the symbols of the evolution of the seasons bringing life. The zigzags are used as a symbol of the water of the river itself. The feathers of the wild fowl become the symbols of sovereignty ; the Nile serpents, the uræus, the symbols of Upper

and Lower Egypt; and the scarabæus, burying its eggs in a ball of earth from which springs new life, the symbol of immortality. Each and all of these symbols are used as motives of decoration, — at first with the distinct intention of religious suggestion, but at length, as the religion declines, merely as decorative units. (Pl. V., No. 3.)

Thebes (the city of Amun-Ra, the sun-god, with the winged globe as a symbol), in Upper Egypt, with a more temperate climate and more warlike people, of African race, gains ascendency during the eleventh and twelfth dynasties, and falls in its turn before an invasion of so-called Shepherd Kings from Asia, who seem to be a semi-barbaric race who govern Lower Egypt by mere force of arms, and wage warfare with Thebes in the south until the end of the seventeenth dynasty, about 1800 B.C., when Thebes again obtains power over both Upper and Lower Egypt. It is under the eighteenth and nineteenth dynasties — a period of approximately five hundred years — that Egypt's artistic greatness reaches its height. To this period belong the great Theban temples at Karnak, Luxor, Medinet-Abou, Gournou, and the Rhameseum, The scheme of these temples can be rapidly summed up as follows: An entrance wall higher than the remainder of the temple divided at its centre into two masses, or pylons, with unbroken walls sloping backward, and with a concave overhanging cornice; an avenue of sphinxes, terminated by obelisks leading to the central entrance, which leads to a succession of rectangular courts or halls, growing less in area successively, — the first without roof, and the others having a greater number of columns in order of their succession, the final termination of these halls being a group of comparatively small rooms, probably used as dwellings by the priests. The outer wall of the temple is plain and unbroken, and descends in steps as the altitude of the halls decrease; the roofs are flat. Upon the walls, the columns and cornices and ceilings of these gigantic halls, — for their scale is greater and more impressive than any other work from the hand of man, — is lavished the decoration of the Egyptians, largely based upon the forms of the lotus and papyrus.

Egyptian architecture is a simple construction of wood and reeds transformed into stone. The columns derive their form from bundles of papyrus reeds tied together, the blocks above the caps from pieces of wood placed to take the weight of beams, the caps themselves from the bunches of lotus, papyrus, or palm leaves bound to the top of the column as adornment. The very concave form of the cornice is that which a wall of upright reeds would take at its crown under pressure. All the early caps contract at the top when bound with strands, and swell out again above the ligature in exactly the manner the end of a bundle of stems would do. This form, which resembles that of a bud, is made into the representation of a lotus bud, and is the only form of flower-cap used until the eighteenth dynasty, when the concave cap is adopted for the great central aisle of columns which rises above all the others in the hypostyle halls. The lower columns have the earlier bud capitals. The strands that bind the columns below the cap develop later into the channels in the Greek Doric, and finally into the astragal of the classic orders. The base leaves of the papyrus are suggested at the base of the columns; the flutings have the triangular section of the papyrus stems. (Pl. V., No. 4.) The method of adapting natural forms to constructional usage, and finally to decorative forms, is so direct and simple, and withal so satisfactory, that it is especially instructive. Variety is obtained by refining, enriching, and developing the few motives that have been mentioned. With a derivation from reed construction, Egyptian decoration has a marked perpendicular tendency, giving great apparent altitude, with a use of the radial principal as a terminal, — horizontal motives being used only in the cornices, and where inscriptions necessitate them. The ornament is drawn with great freedom, and with peculiarly subtle curves, of long lines very nearly straight, beginning and terminating with sharp curves, giving the impression of great strength and elasticity. It tends, with other early historic work, toward strongly defined boundaries to its decorative units; the tips of the lotus petals come to a hard bounding line. It is apt to indicate late work when such outlining of motives is forsaken, and even then its influence is felt. With the lotus and papyrus, and the use of feathers, is the natural prevalence of the radial system of lines, subject to the usual rules of the cadence of interval in the radial lines. The feather form may have suggested the unit which develops into the so-called "palmet," — the honeysuckle motive of the Greeks, — though this unit has doubtless originated in many ways from a mere group of radial form; for example, the serpent-group of the Nagas in India. (Pl. V., No. 5.) There are other Egyptian forms, — that of the obelisk, of the crux ansata (both symbols of that peculiar cult which the Oriental worship of the source of life makes universal in the East), and of the sphinx, always male, with the heads of men, hawks, or rams, representing the combination of physical and intellectual power. (Pl. V., No. 6.)

The colors used in Egyptian work are in most cases ochres and earth colors; the white especially is famous, and is exported throughout the Orient and centuries later forms the body of the Pompeiian work. When blue is used, it is either a rather pale, clear blue or a deep, dull color. The scheme in most cases is one of the harmony of warm colors, picked out by the use of small quantities of white, black, and blue. This choice of a warm scheme of color seems to have been more prevalent among the Semitic and Turanian nations than among the Aryans, — these latter, as is markedly noticeable in Persian design, being more fond of the cooler colors of the Spectrum.

Delicacy of color is seldom attempted, but vigor and clearness are always present. The designs are, in fact, series of color mosaics, when the tones are strong and well defined, and effect of delicacy is obtained by subdivision of tones in quantity of surface covered, and not by diluting or lowering the tone. This is true of all early work, and gives it a quality of decision and knowledge that is wanting in the more varied coloring of later design. It is true of color as of form, that quantity of motives and tones is rather a vice than a virtue, and tends toward confusion, and that directness of expression in both is much more desirable than intricacy of idea.

Colors are used in flat tones, as in all early work, without modelling or shading; outlines are fine but definite. The colors used are in most cases primaries, — red, yellow, and blue, with a marked preference for the warm tones. Green and white are used wherever they are suggested by the natural prototypes. The ground of the ornament is usually left of the material itself untouched. The intense sunlight, and deep shadows pierced by reflected light, the sharp contrast of light and shade, the broad surface and vast expanses of Egyptian temples required a decoration that should be vigorous, firm, and strongly defined both in line and color. The result more than justified the means, and the effect of these royal halls, with their grand scale and rich, gorgeous coloring, has been unequalled in the history of art. The lesson they teach is one of simplicity and directness, and a contempt for the feeble and puny methods of later date, — a lesson of breadth and vigor, that makes all else petty in comparison. Their faults are the faults of barbarism, of crudeness, and lack of refinement, — faults which were soon to be overcome by the Greek.

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[*To be continued.*]