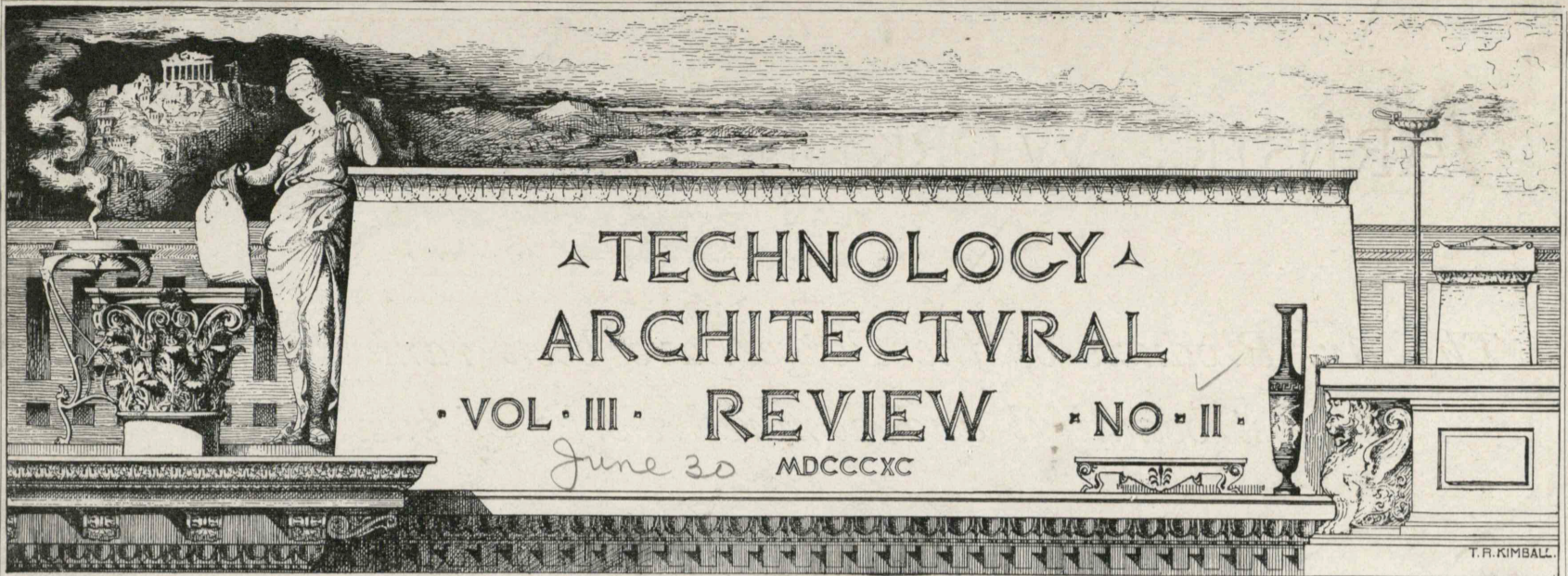


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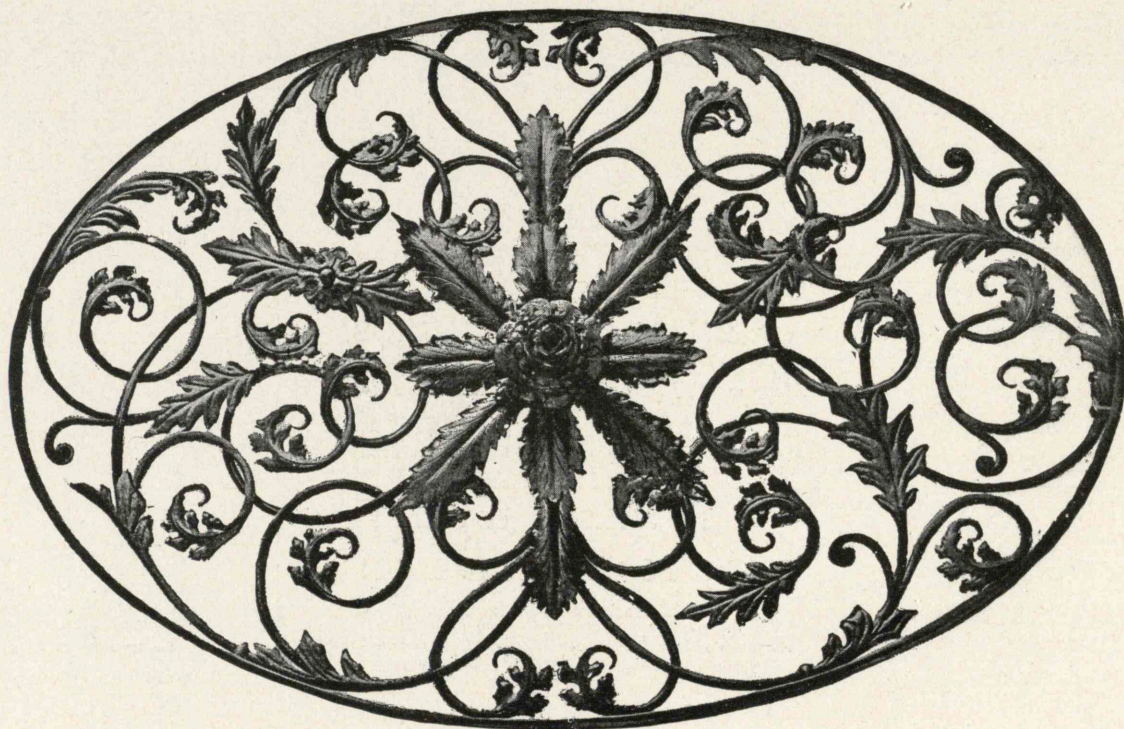
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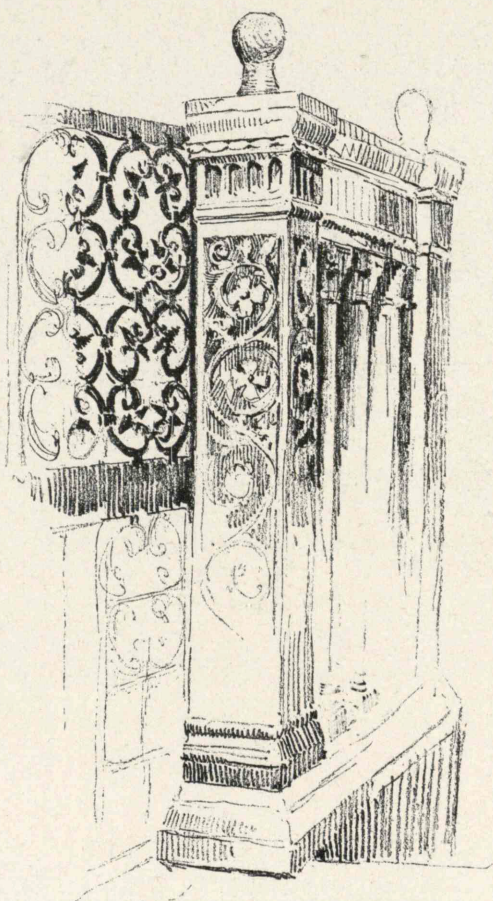
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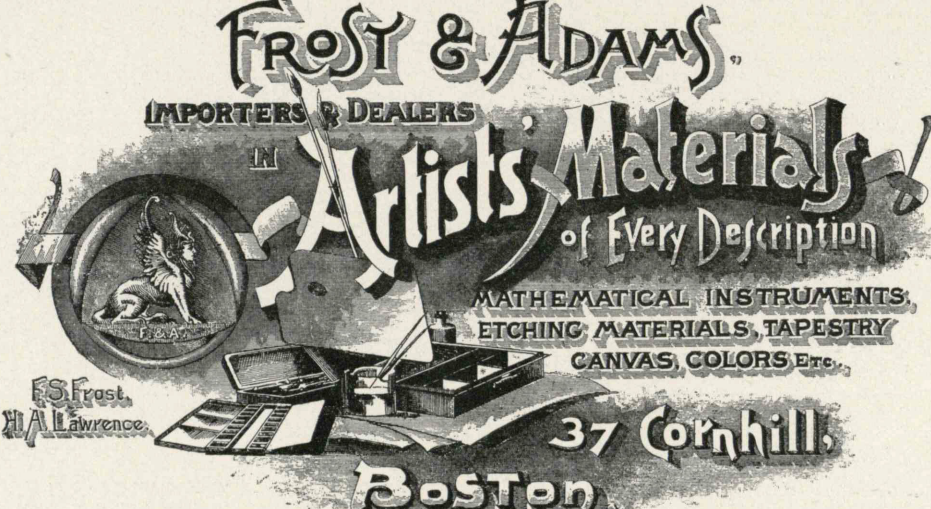
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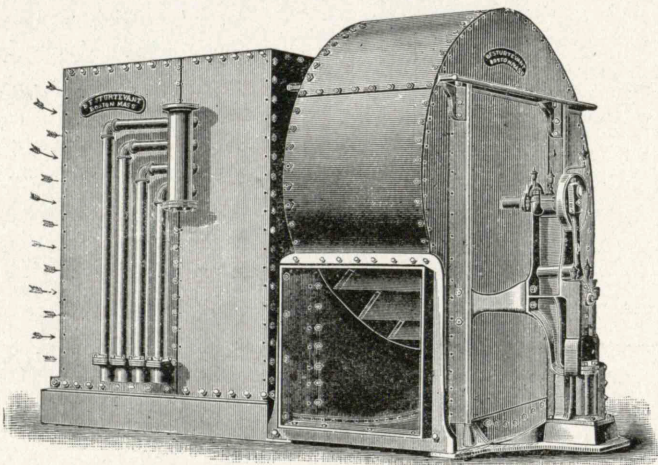
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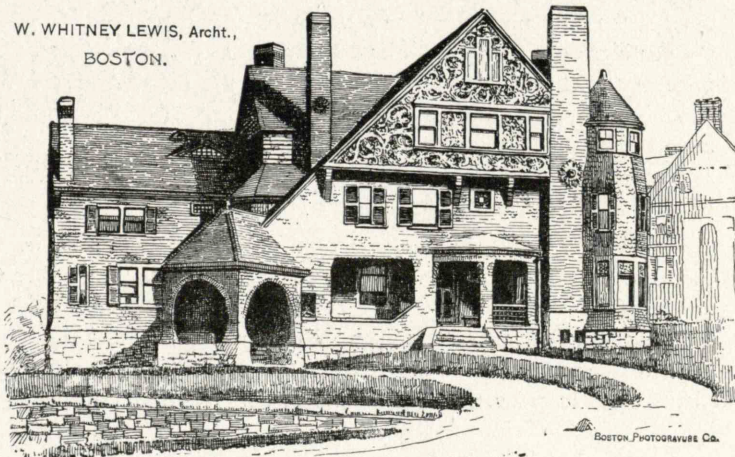
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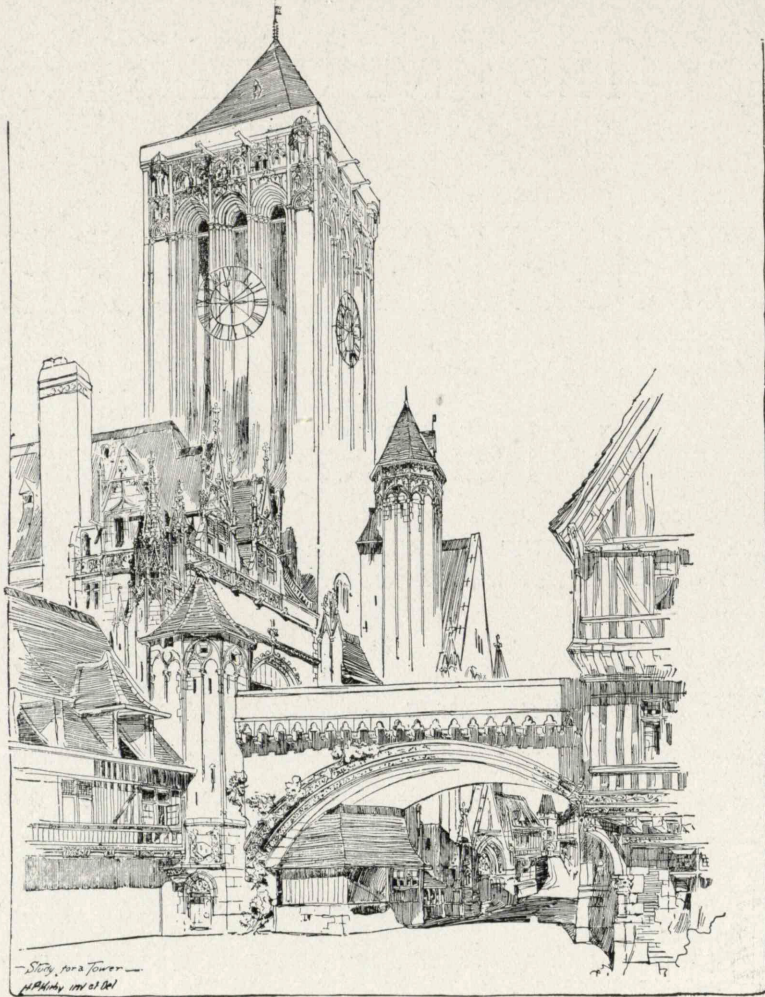
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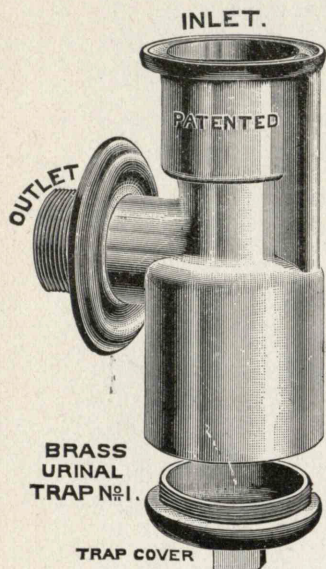
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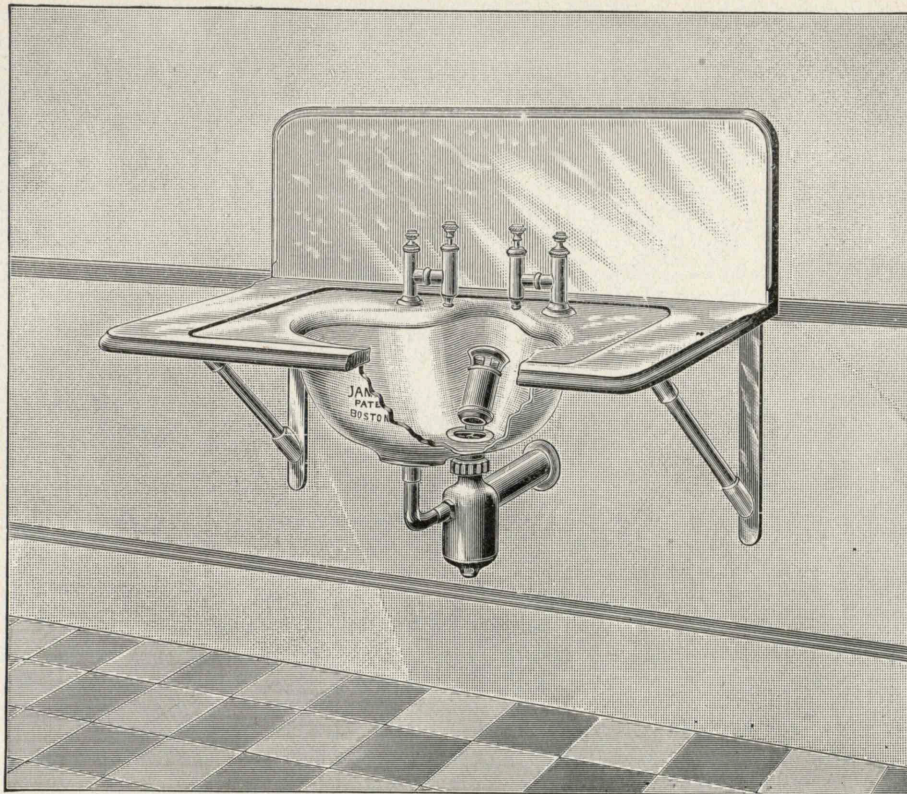


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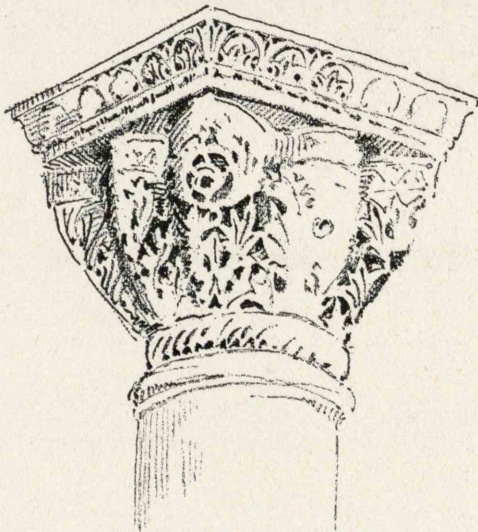
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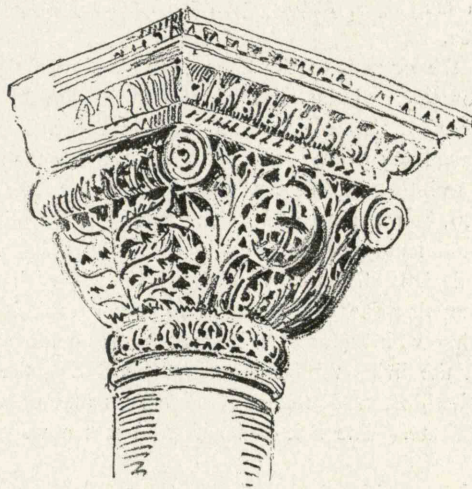
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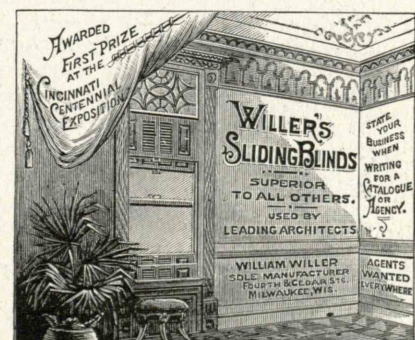
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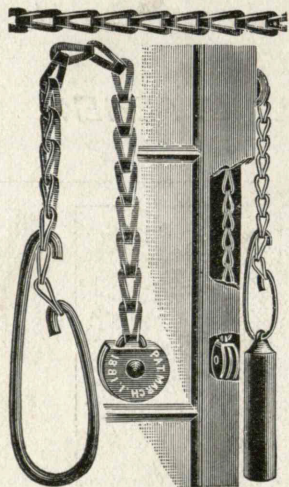
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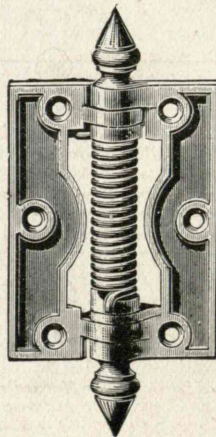


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THE ORIGIN OF THE DORIC STYLE.

BY WILHELM DÖRPFELD,

*First Secretary of the Imperial German Archaeological
Institute at Athens.*

TRANSLATED BY EDWARD ROBINSON.

TRANSLATOR'S NOTE.

WHEN the editors of the Review did me the honor to ask me for a paper on some archaeological subject which would be of interest to its readers, I bethought myself at once of Dr. Dörpfeld's invaluable essay, "Der antike Ziegelbau und sein Einfluss auf den dorischen Stil,"¹ the facts established in which have remained too long unknown to American students of architecture. Classic architecture offers no more fascinating subject for investigation than the origin and development, bit by bit, of its three great styles. For their knowledge of these, our younger architects depend chiefly on Viollet-le-Duc and Fergusson; and, so far at least as Doric architecture is concerned, the theories published by these writers will not stand the test of recent investigations. I am sure, therefore, that I could render the Review no greater service than by placing before its readers, in as nearly his own words as possible, the opinion of an architect than whom no man of our time has done more to advance the science of classical archaeology.

¹ Published in the *Aufsätze an Ernst Curtius gewidmet*, Berlin, 1884.

IT is a remarkable fact that the oldest stone Doric temples, such as those of Corinth, Syracuse, and Selinus, show the Doric style almost perfectly developed. We find in them nearly the same forms that appear in the structures of later centuries. It is only in details and proportions that the earlier buildings differ from the later; the artistic scheme is essentially the same. How is this circumstance to be explained? Are we to suppose that the oldest temples we know are also the first buildings of the Doric style, and that therefore the Doric forms were invented by Greek architects expressly for stone construction; or must we believe that all the oldest Doric buildings have disappeared because they were constructed of perishable materials, and that therefore the extant stone buildings are but the end of a long chain of development? Both views have found zealous adherents. Klenze, Bötticher, and many others, have favored the former. They believe that the Doric forms were intended for stone, and that the first buildings of that style were constructed wholly in stone. In their opinion, the oldest stone Doric monuments that survive are to be considered among the earliest that were built.

The chief supporter of the second theory is Vitruvius, as is well known. Many modern scholars have followed him. According to Vitruvius, the Doric style had its origin in wooden buildings. The details of wood construction furnished the elements for the treatment of individual forms, and the style thus developed was transferred to stone as a scheme already pretty firmly established.

The principal objection which the followers of the stone theory bring against this hypothesis certainly seems well founded. If the earliest Doric buildings were of wood, they say, they must have been light and slender structures, because wood does not admit of solid, heavy proportions. When the period of transition arrived, in which wooden buildings of this kind were imitated in stone, the proportions might have been made somewhat heavier, in conformity with the new material; but it is hardly conceivable that such decidedly solid proportions as the oldest Doric buildings exhibit should have been chosen at the start. The supporters of the stone theory point quite justly to the analogy of the Ionic style. The oldest Ionic buildings, as is now almost universally admitted, were of wood. When they were first built of stone, the slender proportions of wood construction were retained, and only such modifications attempted as the new material absolutely required. It is surprising that the same method should not have been pursued in the Doric buildings. If, in the one case, a light and graceful style was developed out of wood, how is it possible that in the other, from the same material, there should have sprung a heavy, almost squat type?

Before this question, put as it is, we must certainly yield. From the same type, or two similar types, in wood, two such entirely different styles of building could never have been evolved. But are we sure that the early Doric wooden structures were similar to the Ionic? Can we not think of conditions which might have made it necessary for the Dorians to erect even their wooden buildings in heavy, solid proportions?

As a matter of fact, such conditions did exist. The early Doric buildings were not simple wooden structures, but consisted principally, as can be proved, of clay bricks, dried in the sun, which were combined with wood. And it was these bricks that led to the heavy proportions which we find in several of the earliest stone Doric temples. Before we inquire how the material of the bricks could have had such an influence on the proportions, we must prove that the buildings of that time were really made of sun-dried bricks, and that this material played a very important role in ancient Greece.

There is a widespread belief that only walls which are built of regular blocks, or at all events of large stones without mortar, date from the Greek epoch. When, therefore, in any part of Greece, walls are discovered, or brought to light by excavations, which are built of small, irregular stones, or of sun-dried bricks, they are usually designated as "late," are not examined, and are often wilfully destroyed. Yet almost all Greek dwelling-houses, and even many public buildings, were constructed of these materials. In building their walls the Greeks used lime, not as mortar, but only for external finish; and therefore, in erecting thin, vertical walls, they were obliged either to use large, well-cut blocks that would hold

together without mortar, or else take rubble and sun-dried bricks, and then apply clay as a binding material for these. The former method was doubtless employed but little in common buildings, chiefly for financial reasons, for a block wall is considerably more expensive than one made of rubble or unbaked bricks. Which of these latter materials was more generally used, it is difficult to determine. In mountainous regions the rubble, in plains the bricks, would have been more common. For a number of reasons, however, we may conclude that sun-dried brick was in fact a material that was very widely used in Greece.

First of all, the general use of this in the other lands of antiquity is worth noting. In Mesopotamia most of the cities were built of it wholly, or at least for the greater part. These same sun-dried bricks we find also in Egypt, where the great walls surrounding the enclosures of the temples were built of them. In the Bible, also, we read that the children of Israel had to make them for the Pharaohs. Moreover, the recent excavations at Hissarlik [Troy] have shown that all the walls on the Pergamos of Ilion were built of them, both house-walls and fortifications. Finally, we know from ancient writers that many buildings in Asia Minor were of sun-dried bricks. Vitruvius, for instance, names as important examples the Palace of the Attalid kings in Tralles, that of Croesus in Sardis, and that of Mausolos in Halikarnassos.

Not only in Egypt and the Orient, however, but also in Greece itself, sun-dried brick offered a very practical building material, and one that was therefore often used. In Herodotos, Thukydides, Pausanias, Vitruvius, and other authors there are allusions to it, and its application in walls. Inscriptions also mention walls of sun-dried bricks. We know, for example, that a part of the city walls of Athens and the long walls to the Peiraeus were made of them, also the walls of two temples in Patras, the city walls of Mantinea, etc. Among the instances mentioned by Pausanias, the colonnade in the sanctuary at Epidauros is especially remarkable, since the valley in which the sanctuary lies is so rich in good building stone and so poor in clay that the use of clay bricks appears at first quite incomprehensible. Evidently nothing but the great superiority of the bricks could have been the inducement to use them even in rocky districts.

These statements of ancient writers have been fully confirmed by the excavations of late years. At different places walls of these bricks have come to light. Eleusis has one, about fifteen feet thick and ten feet high. Upon the citadel of Tiryns remains of them have been found, and the earth in which the walls of the palace recently uncovered were buried, consisted for the most part of bits of half-burned bricks. In Mykenae, even now before excavations have been made¹ a large wall of this kind is visible on the summit of the upper citadel. Like the walls of Tiryns and Troy, it has been burned in such a manner, owing to the destruction of the akropolis by fire, that both the bricks and the clay mortar between them have become hard, red stone. Ancient walls of this class have been found also in Olympia, in Tegea, and traces of them in other sites. Consequently we already know some classic walls of sun-dried brick, and it need hardly be said that their number will soon be considerably increased if, in future excavations, attention is paid to these simple structures. At present the number is, to be sure, comparatively small; but when we consider that clay walls are very easily destroyed, and that it is only by chance that any such wall survives to our time, we may also accept the few examples we know as evidence of their general existence.

A further proof of this is furnished by the construction of the block walls, and also by the common name for the blocks. The walls of ancient temples and other buildings consist, almost without exception, of a base of upright slabs, and upon these the wall itself, built of the ordinary blocks. How did this arrangement

¹ That is, in 1884. The akropolis of Mykenae has since been excavated. — *Trans.*

originate? In building with blocks of stone, a base is entirely useless from a constructive point of view; but for a clay wall it is not only useful but absolutely necessary; since a wall of this kind could never be made of sun-dried bricks from the foundation, because the dampness of the earth would be rapidly absorbed by the bricks and would decompose them in a short time. To prevent this a base must be constructed either of stone blocks or rubble, which will isolate the clay wall from the earth. That is the way in which such walls are built now-a-days, and it is certainly the way in which they were built in antiquity. From what was a constructive necessity in the clay buildings arose later the artistic embellishment of almost all walls of buildings with a base, and therefore the upright slabs at the bottom of block walls are a reminiscence of the old clay walls. Whoever is still doubtful on this point will certainly be convinced, by the name of the blocks in the upper courses (*πλίθιοι* = bricks), that the block wall is really the daughter of the old brick wall. Here again we see what an important part clay construction played in ancient times.

There is one other peculiarity of stone construction which we may consider as proof of the widespread use of clay; that is, the character of the door-frames. In several stone buildings of the Doric style, take the Parthenon and the Propylaia of Athens as examples, the door-frames were not made of separate stones, or attached to the adjoining blocks of the wall, but they consisted, as can still be proved by examination, of wooden posts or pillars, which were probably encased in bronze. For monumental buildings, and especially those of marble, this is a very unusual construction, which at first sight is not easy to explain. We can explain its origin, however, if we look back again at the clay wall as the precursor of the stone. In a wall built of sun-dried bricks the door-jambs could not be made of the same material, but, in order to give them resisting power, wooden posts or planks were added. Remains of these are still preserved in a carbonized condition, or recognizable by unmistakable traces, in the buildings of Tiryns and Troy. People had become so accustomed to wooden door-posts covered with metal, that even when their walls were built of marble, they clung, in the Doric buildings, to the wooden frames. This circumstance, however, we can understand only on the supposition that the clay construction was universal in the earliest times and retained later for common buildings.

Finally, we are justified in taking the wide dissemination of this mode of construction in modern Greece, as a proof of its frequent occurrence in antiquity. In almost all the plains of Greece to-day the houses are built of sun-dried bricks; and even in Athens, where quarry-stone is to be found in abundance, there are, in the suburbs, many houses built of them. If, therefore, sun-dried brick is now found to be a practical building material, how much more would it have been prized in early times, when lime mortar was still unknown. Its general use in ancient Greece will hardly be disputed hereafter. Whoever knows its merits will not doubt the fact, even without the testimony that has been adduced; for the sun-dried brick was for Greece, before the introduction of lime mortar, the most convenient, cheapest, and, except cut stone, most durable of all building materials. The last assertion may sound improbable to many, but they have only to read Vitruvius's statements on the subject, and especially sections eight and nine of the eighth chapter of Book II., to be convinced.

The preparation of the bricks and the construction of the walls we learn from Vitruvius, and also from examples which have been discovered. Just a few remarks about them here: The bricks are considerably larger and thicker than the ordinary Roman bricks, and than our modern baked bricks. Their average size would be about eighteen inches square, and four inches thick. Common clay, not cleaned, but often containing pebbles, shells, and potsherds, was mixed with straw, formed into bricks, and then usually dried in the air for several years. In erecting walls, the

joining was contrived in several different ways, according to their thickness and the shape of the bricks. The walls were usually very thick. In Troy, in one room fifteen feet wide, the thickness of the wall is four feet one and a quarter inches; in another, thirty-three feet wide, it is about four feet nine inches. For mortar, tolerably pure clay was used, also mixed with straw or hay.

The ends of the walls were provided with wooden posts, and, to give greater strength, beams were often laid lengthwise and crosswise throughout the extent of the wall, as is still the custom in Greece. On the outside, the walls had to be covered with a stucco to protect them from the rain. For this, either a clay stucco was chosen, as at Troy, or a layer of clay with a layer of lime over it, as at Tiryns. Especial attention had to be paid to the covering of the top of the wall, because the rain was most dangerous there, and could easily damage the bricks. A wall constructed in this way, and protected on all sides from the weather, would serve its purpose for centuries.

[To be continued.]

SUGGESTIONS TO TRAVELLING STUDENTS.

(Continued from Vol. II., No. 8.)

ENTERING Italy from the north, there are four main arteries of travel,—from France by Marseilles and the Riviera to Genoa, from France by Chambéry and the Mont Cenis to Turin, from Switzerland by the St. Gothard to Milan, and from Germany by the Brenner to Verona. The first of these routes leads through a pleasure land, a paradise of villas, groves, and mountains, each little town white on its hillside or headland, with perhaps a good campanile to the church and at times rich choir stalls and attractive doors with canopies over them; occasional bits of wrought-iron screens and interesting wooden cornices and frequent fortification towers built for defence against the Saracens. Genoa, the rival of Pisa during the eleventh and twelfth centuries, and of Venice during the thirteenth and fourteenth, enriched by commerce with the entire East, rises upon great mountain spurs thrust out into the sea. The palaces of her merchant-princes are among the richest of the Renaissance designs, and were in most cases erected by Galeazzo Alessi, a pupil of Michael Angelo and a Perugian.

The courts and staircases of these palaces are especially noticeable, and in masterly grouping of columns, and robust character of the detail, perhaps the Palazzo Marcello Dorrizzo is the most imposing, but all have a sumptuous character that befits the wealth of the Genoese merchant-princes. Lowering as most of them do over narrow streets, they have a scale and grandeur which they might lose somewhat if isolated. S. Lorenzo, the cathedral, of a variety of epochs,—Romanesque, Gothic, and Renaissance,—begun in the twelfth century, was influenced by the nearness of French Gothic in the thirteenth, and has the lower portion of its façade stratified in black and white like some of the southern French churches,—unsuccessfully, it may be remarked. The interior columns which belong to the earlier church have great vigor. The entrances to the aisles have very interesting Romanesque carving. The choir stalls are rich with intaglio, and there are twelfth-century cloisters which are of interest, though inferior to much of similar work in Lombardy. Near by is the church of S. Giovanni Battista, with an excellent tower finely proportioned and a high tower roof showing French influence; farther on in the Via delle Monachette are warehouse buildings with double loggias, very suggestive in their treatment. The house

Vico dei Notari, near S. Lorenzo, has a fine Renaissance doorway. Other Romanesque works well worth visiting are the churches of S. Donato, S. Agostino, and the tower of S. Stefano. Of Gothic work there remains the church of S. Matteo with fine cloisters, S. Maria dell Vigne, and the façade of S. Stefano. The sixteenth-century palaces are numberless, each with staircase, court, and garden, and many with picture galleries containing masterpieces by Rubens and Van Dyck, both of whom resided in Genoa, and many comparatively inferior works of the later Italian masters, in most cases of the Bolognese School. The Renaissance churches are not especially good, among which are S. Maria in Carignano, and S. Annunziata. There are many picturesque Renaissance portals and entablatures scattered here and there in the narrow streets; but most of interest in Genoa is to be found in what little remains of the Romanesque work, in the magnificence of the sixteenth-century palaces, and in the views. Like most of the sixteenth-century Renaissance, many uncouth motives have already begun to make their appearance.

In all the larger Italian towns—and, in fact, in many of the smaller ones—it is worth one's while to hunt up the local museums of antiquities. These are frequently in the town halls, or palazze pubbliche, or in the larger cities have a building to themselves, which is usually known as the Accademia delle Belle Arti. Apart from the marvellous pictures of the fourteenth, fifteenth, and sixteenth centuries which these museums contain,—and there is scarcely a community in Italy but which possessed a local master or a school of painting during those three hundred years,—there are always to be found examples of the industrial arts,—pottery, metal-work, furniture, intagsia, and niello, armor, coins, and interesting fragments of architectural detail, such as mantelpieces, door and window frames, carved escutcheons, pilasters, etc. For decorative detail, there can be found no better suggestions than those upon the Renaissance silver, gold, and bronze work. And the delicacy and purity of line of some of the inlays upon furniture and gun-stocks, arquebuses, etc., is very fine. The Accademia in Genoa is in the Piazza Deferrari, and contains among other things some interesting mediæval reliefs, and a Renaissance mantel of considerable merit and a door-frame.

The following twenty are the most interesting of the Genoese palaces:—

On Via Balbi, going south from railroad station.

ON RIGHT.	ON LEFT.
<p>Palazzo Faraggiana.</p> <p>No. 10. Palazzo Reale, seventeenth century, by Francesco Cantone and Giovanni Angelo Falcone, extended by Fontana.</p> <p>No. 4. Palazzo Balbi, Senarega, seventeenth century, by Bart. Bianco, enlarged by Pier Antonio Corradi.</p>	<p>No. 5. Palazzo dell' Università, 1623, by Bartolommeo Bianco.</p> <p>No. 1. Palazzo Marcello Durazzo, seventeenth century, by Alessi. Staircase by Tagliafico.</p>

Continuing through Piazza Annunziata and Piazza Zecca to Via Novissima, turning towards right, on right is—

No. 13. Palazzo Balbi, eighteenth century, by Gregorio Petondi. Opposite on the hill is Palazzo-Centurioni, with marble portal.

Continuing through Via Novissima and through Piazza Grimaldi to Via Garibaldi. On Via Garibaldi—

ON RIGHT.	ON LEFT.
<p>No. 18. Palazzo Rosso, by Alessi.</p> <p>No. 12. Palazzo Serra, by Alessi.</p> <p>No. 10. Palazzo Adorno, by Alessi.</p> <p>No. 6. Palazzo Giorgio Doria, by Alessi.</p> <p>No. 4. Palazzo Cataldi, 1560, by Giovanni Battista Castello.</p> <p>No. 2. Palazzo Gambaro.</p>	<p>No. 13. Palazzo Bianco, 1565-69.</p> <p>No. 9. Palazzo Municipale, sixteenth century, by Rocco Lurago.</p> <p>No. 5. Palazzo Spinola, by Alessi.</p> <p>No. 3. Palazzo Parodi, 1567-81, by Alessi.</p> <p>No. 1. Palazzo Cesaro Cambiaso, by Alessi.</p>

Continuing to the Piazza delle Fontane Morose, in the Piazza, No. 17, Pal della Casa, fifteenth century.

Continuing straight through the Salita S. Caterina instead of following the Via Carlo Felice to the right, the end of the Via Roma is reached and the Prefettura or old Palazzo Spinola, a very interesting old palace.

Besides these are the Palazzo Ducale in the Piazza Nuova, begun in thirteenth century, tower of this period remaining, remodelled by Rocco Pennone in sixteenth century, modernized after a fire in 1777, façade by Simone Cantoni; and the Palazzo Doria, on the Via S. Benedetto, back of the railroad station, presented in 1522 to Andrea Doria and remodelled in 1529 by Giovanni Angelo Montorsoli. The Titan salon has a fine chimney piece.

From Genoa the usual route north is through Pavia to Milan, south along the coast to Pisa; but there is a network of small railroads southwest of Milan about Turin and Alessandria that converge in Genoa, and upon which are some interesting towns. The whole district near the coast is mountainous and gradually descends towards the northeast to the plains of Lombardy. The towns are picturesque and beautiful and full of accidental suggestions of construction, but have few remains of the Middle Ages. Savona, which is on the coast west of Genoa, has a rather debased cathedral of 1604, and S. Maria de Castello is interesting. Inland and west is Mondovi, with a good fifteenth-century cathedral. Savigliano has its ancient fortifications and a moderately interesting church. About twelve miles south of Turin is Carignano, which has several good churches, fourteenth and fifteenth century,—S. Giovanni Battista and Sta. Maria delle Grazie,—and is well worth visiting.

C. HOWARD WALKER.

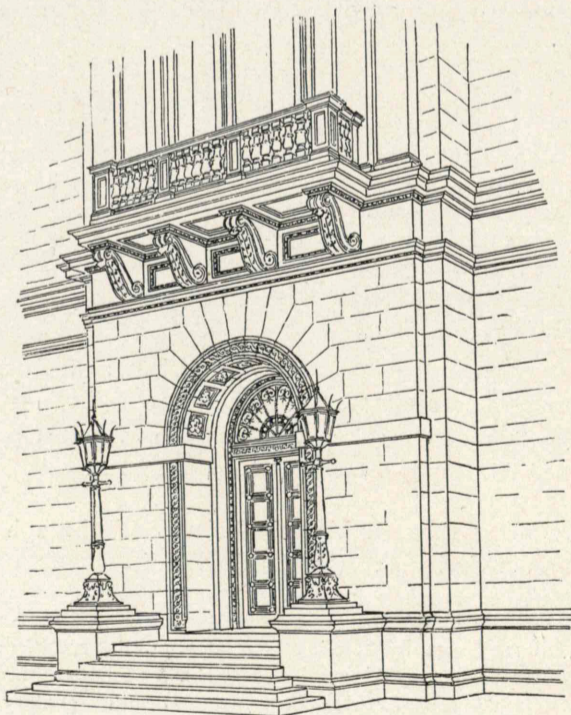
[To be continued.]

DEPARTMENT OF ARCHITECTURE.

MONTHLY COMPETITION.

THIRD YEAR REGULARS AND SECOND YEAR SPECIALS.

Problem: AN ARCHED ENTRANCE WITH BALCONY ABOVE, DESIGNED FOR A PUBLIC BUILDING.



PERSPECTIVE OF MR. SEELER'S DESIGN.

JUDGMENT.

First Mention	EDGAR V. SEELER.
Second Mention	RALPH H. MILLER.
Third Mention	VERNON A. WRIGHT.

NOTES FROM CRITICISM.

FIRST MENTION.

PLATE II.

This drawing was ranked first by the jury because in general appearance and in comparison with the others it was simple, refined, and reserved. It was also daintily rendered. The entrance seemed handsome and hospitable. The arch was dignified, and the jointing of the voussoirs presented to all appearances the simple and natural arrangement of the stones. In the qualities most needed for a sketch, this drawing was therefore good, but it does not as well stand an examination of its detail. While the door seems to have been studied from some classic example, the detail might have been more carefully drawn so as accurately to indicate the mouldings or enrichments desired. But when the detail is clearly shown, as in the transom bar, the Greek fret is raw and poor, and needs some surrounding moulding or other finish. The metal guard over the fan-light gave an opportunity for a well-designed piece of iron work. The drawing indicates one that is harmless but commonplace. The stone architrave around the arch is divided into three equal portions by the mouldings and the guilloche ornament. A variety in the width of the members would be more agreeable. The lamp standards have a good general appearance, but the lanterns themselves are thin and poor and need more detail. The proportions of the balcony are pleasing, but the mouldings on the platform and adjoining cornice would perhaps be better with wider flat surfaces and less projection to the crowning moulding. In short, a more strong and masculine set of mouldings there would have been more suitable. Throughout the design the mouldings are too much divided into equal parts.

SECOND MENTION.

PLATE III.

The good qualities of this design resemble those noted in the design placed first. It seemed to the jury well studied and dignified. It was not as well rendered as the design placed first. The mouldings on the stone balcony are here also thin and poor. The whole cornice, with the considerable projection indicated by the shadow, looks slight, and should have stronger mouldings or larger dentils or otherwise be strengthened. The capping of the balcony balustrade is thin. The disks should either have better mouldings around them or none at all. As the jointing of the stone-work is not shown, the poorest part of the design escapes emphasis. Had the jointing been shown, the arch voussoirs would probably have been difficult to manage, and the space from the arch mouldings to the band over the keystone would have appeared too small. In actual work where the heights of stories are fixed, and openings often have to be carried as near the ceilings as possible, such a difficulty is of frequent occurrence and has to be solved by some ingenious expedient; but where there are no binding conditions there seems to be no reason why dignity and freedom should not be given to the voussoirs. In this respect the design placed first is distinctly superior.

THIRD MENTION.

PLATE III.

The jury were averse to placing this design higher, as, although cleverly rendered and showing considerable skill, it seemed a rather close copy of some recent and deservedly admired work. Some of the jury have seen the clever sketches in the English Building Papers, or Talbert's and Eastlake's furniture designs, or Norman Shaw houses, or some American new departures, or many other striking and taking things, one after another held up as models, one new fad arising as the last one ceases to be fresh. They can urge on their young friends that it is far better to consult the authorities from which any of these modern prophets loyally draw their inspiration, than to depend on second-hand knowledge through the help of these designers. In following the latter, they are only too likely to retain the startling and "chic" effects, which attract while fresh and pall when familiar, rather than the solid and lasting qualities which have defied the test of time in the original examples. It will not require a very advanced student of architecture to perceive that the buildings we all readily acknowledge as superior are almost universally closely founded on historical precedents, and the inference that we had better seek the same sources seems obvious. To look again, however, at the design No. 3, let us note that the arcade and balcony are dainty and pretty. It may be questioned whether the decoration of the arch voussoirs is perfectly appropriate, but there is possibly good authority for it. Had this sketch been a purely original study inspired by historical examples the jury might have placed it higher. They thought it, however, rather a study of modern work in which the skilful adaptation of old authorities, made by the original designer, was only weakened in the new edition. In short, attempts at adapting historical standard motifs in an original manner seemed to them more difficult, more praiseworthy, and more desirable from every point of view.

ROBERT S. PEABODY, *Critic.*

THE STUDY OF DECORATION.

(Continued from VOL. III., No. 1.)

APART from the great centres of Byzantine art at Constantinople itself, and at that bulwark of Eastern influence in Italy, Ravenna, there remain two cities in which the Byzantine influence is strongly felt, — Venice and Palermo. Commercial intercourse and the Crusades had turned the attention of artists, architects, and rulers to the East; and while the Romanesque is being developed from the Roman basilica, it is often jostling with and even being supplemented by the imported Byzantine. Amidst this struggle of styles appeared another influence, that of the Mohammedan, who in adapting conquered Christian shrines to the needs of his worship, enriched them with a wealth of fancy brought from his Persian fatherland. The great transitional period of one thousand years between the fifth and the fifteenth century had been inaugurated, the so-called middle and dark ages, — a time of intense and vital interest; of the birth-throes of civil liberty, of the Moslem religion, and of chivalry; when art, religion, and state-craft each met its similar antagonist on every side, and in the confusion of the combat each thing seemed to partake of the character of its neighbor. Venice, being enriched by the fourth crusade, in close communication with Constantinople both by conquest and by commerce, a harbor for refugees from northern Italy and from Greece, and having her merchants in Alexandria, Cairo, and the entire north African littoral, it is natural to expect that her architecture in the eleventh and twelfth centuries should have not only a strong Byzantine character, but a touch of Arab richness of detail and of Lombard fertility of thought and invention. St. Mark's, built 1043-1071, is in fact a replica, in plan and arrangement, of Justinian's Church of the Holy Apostles in Constantinople; but it has the wealth of detail and intricacy of ornament of an Oriental design, and a grotesque vigor in its mosaics that suggests the naive strength of delineation of the Romanesque. Above all, it has color, — such color as is only equalled by the churches of Palermo, and could only have been created by the influence of the color-loving East. Its mosaics differ from those of Ravenna, in that they have in most cases gold grounds. The marbles on the walls are of the deepest hues, the capitals in the nave are gilded, and gilding was evidently used to pick out the detail upon the exterior. Otherwise the earlier work in the church, except that it is richer for being influenced by Arab love of intricacy, resembles St. Sophia more than S. Vitale. The mosaic floors, not put together of tesserae, but of pieces of marble carefully cut and fitted to patterns, have an individual character of their own.

In Sicily the sway of the Arab preceded that of the Norman kings; and while the towers of the cathedral might, from their mass and design, belong to Caen or Lisieux, their detail is evidently done by Arab workmen; the peculiar Eastern curve to the pointed arch appears, and the disregard for the integrity of corner lines, and the Arab development of the Assyrian parapet pattern. The cathedral at Monreale is of basilican form, but both the Church of Santa Maria del Ammirale, built in the twelfth century, and the Capella Palatina resemble the churches of Constantinople of two centuries previous.

Both have the pointed arch, but a pointed arch more Persian than Gothic, rising perpendicularly at the archivolt, then bending with a firm, elastic line, with the curve sharpest at its commencement, and terminating with a straight line for a short distance at the apex of the arch. The mosaics are among the most beautiful in the world. The upper portions of the walls, the pendentives and domes, and the arches have gold grounds surrounded by narrow rich borders. The walls below have dados of marble, usually of warm grays and whites, with central panels of verde antique

or of porphyry. There is one peculiarity of this work in Sicily which is also found in the pulpits in the churches of Salerno and of Ravello near Naples, and in the Cosmati work at Rome, in the cloisters of San Paolo Fuore and of S. Giovanni Laterano, — that is, that ribbons and patterns of mosaic are let into a field of marble. These ribbons run up and around the columns, between the marble slabs of the dados, and form borders about the panels. In Rome they are for the most part in gold, red, and black, and only of square and triangular pieces laid in geometric patterns; in Ravello there is more lavish use of gold, and in Palermo there appears the addition of blue and of green, and the patterns are not always geometrical. There is one very beautiful parapet pattern of quite large scale at the top of the dado in the church of Monreale, where every machicolation is enriched with a different design in coloring that vies with the hues of a paroquet. The floors, as elsewhere, have large circular or square centres of a single piece of porphyry or of marble, with a rich mosaic border meandering about it.

ROMANESQUE.

Quicherat's statement, — that Romanesque architecture is an architecture which has ceased to be Roman, although it still holds a great deal that is Roman, and which is not yet Gothic, though it already contains something of the Gothic, — though possibly defining the situation, does not explain it. Corroyer, in remarking that the Romanesque proceeds from the Roman and the Byzantine directly, though stating an undoubted fact, seems to place overmuch importance upon the Byzantine influence. The difference between the Byzantine and the Romanesque is not to be sought in outside influences, but in the quality of the builders themselves and in their environment. It has been mentioned before that art in seaport towns, where commerce was most largely carried on by sea, much more nearly resembled the art of some great commercial centre on the seaboard than it did that of its own neighbors inland. Colonists usually clung to the coast and let the interior work out its own development, and foreign artists seldom penetrated far from the sea to remain for any length of time. The art of the seaboard cities in Europe was, then, for many years a borrowed art from the East, as their people were to great extent Eastern colonists. It was carried on with a full knowledge of constructive methods, and a facility in obtaining materials that the inland towns did not possess; and in consequence it is along the seaboard that is to be found the persistence of the Byzantine influence. On the other hand, the interior was peopled by descendants of Ostrogothic tribes mingling with numberless local peoples. The towns on the caravan routes, if they desired to emulate their neighbors on the littoral, must do so with their own material and with their own masons. Whatever they touch is necessarily crude at first, but constantly gaining as they gain facility in working. A precedent of some kind they must have, and they find it close at hand in the Roman basilicas. Uncertain, from the result of woful experiments, of arches of great span, they pack their columns close together and surmount them with sturdy little arches that have scarcely any thrust. This arcade of heavy columns carrying absurdly disproportionate arches is their only motive, and is applied inside between aisles and nave, and outside in successive stories rising one above another. As the masons begin better to understand their art the span of the arch increases, though a large arch for some time does duty merely as a discharging arch and has smaller arches beneath and within it. The capitals, at first crude imitations of classic prototypes, soon become the field for the grotesque imagination of the workmen, and each differs from the other and is a mass of light and shade shot with all sorts of uncouth fancies. Wherever, for some constructive reason, a column is omitted against a wall, the capital becomes a corbel carrying the arches. In many cases the corbels alone are used, and an arcaded corbel course becomes the favorite

termination of a wall in the place of a classic entablature. Finally the arches are omitted, and the corbels alone support the eaves. The roofs, as was the case with the Roman basilicas, were of wood, until the returning crusaders, having seen the stone roofs of Syria, began to imitate them. In Southern France a colony of Syrians helped materially to advance the art of building. The roof beams were chamfered and painted in crude colors,—in very much the way they still are in Spain. It will be noticed that while the Byzantine decorated the interior of the churches, the Romanesque builder merely constructed the interior and wrought out the most of his design upon the facade. As a large arch was to him for a long time a *tour de force*, he naturally beautified the necessarily large entrance, and the beginning of the development of the beautiful Gothic portals is seen in the early Romanesque churches. As he could not dignify the arch by great size, that being beyond his constructive attainment, he to some extent made up for it by increasing the number of his arches, one within another, so that each opening has a series of concentric arches above it. These arches are not all in one plane, but upon a series of parallel receding planes, and are most effective in their light and shade. The inside edges of their voussoirs are at first intact, then decorated by a roll moulding suggesting the continuance of the form of the column below, and finally by all sorts of geometric patterns,—lozenges, etc.,—and they are the first step toward the rich arch mouldings of the Gothic.

In three different places is the Romanesque to be found at its best and in the greatest quantity,—in Normandy, in Southern France, and in Northern Spain. Except that these latter localities are separated by the Pyrenees, they could be classed as one. The style was used throughout France and as far down into Spain as the conquests of the Moor would allow; but later Paris adopted the Gothic, and around Paris the Romanesque churches were replaced by Gothic ones; so that the Gothic influence in France radiates from Paris as a centre with constantly decreasing effect, like the ripples about a stone cast into water, and the Romanesque is found at the outer limits of the kingdom. It began to flourish under the Carolingian kings, but perhaps its richest period is in the eleventh century and in the early part of the twelfth. It is an architecture of inertia, with arches heavily weighted by great masses of wall, and with broadly contrasting masses of light and shade. It does not depend, for its effect, upon intellectual quality beyond a rigorous sense of simplicity, or upon refinement of conception or detail, but rather upon size, picturesque mass, and staccato light and shade. It is absolutely misunderstood by architects in America. There seems to be a prevalent idea that anything with one or a collection of squat, shapeless columns, with uncouth Brobdingnagian capitals carrying puny arches of utterly disproportionate voussoirs, the whole to be built as far as practicable of rock-face stone, is in the so-called Romanesque style. As a matter of fact, if precedent is of any value as a guide to men devoid of knowledge of design, there is but little if any rock-face work in ancient buildings. Barbarians as many of the old builders were, they were not barbarous enough for that. The proportion of capital to column in quantity of surface was very slight. The proportion of voussoirs to arches naturally depended upon the size of the arch,—large voussoirs to large arches; small voussoirs to small arches. Columns were only grouped around piers and on either side of openings; and lastly, the natural development of the column in Romanesque work was toward attenuation,—the later and better the work, the more slender became the columns, until at last they were merged into the Gothic multiple-columned piers. Wherever a squat column is found it is of ignorant crude workmanship, done by a man who was not proficient in his calling. It will be seen that Romanesque work is at its height some four centuries later than Byzantine, and is the direct ancestor of the Gothic. It is carried out under the direction of the priors of the monasteries, and partakes, until the rise of the freemasons

in Spain, of the character of the earlier Roman churches. In Lombardy a style different from that farther north is developed,—a style more refined and cultivated, but less sturdy and vigorous, where marble takes the place of stone, and in the plains of Piedmont brick is used with marble mouldings. Lucca, Pisa, Pistoja, Milan, Verona, and many smaller northern Italian towns have examples of this round-arched, many-columned arcaded style. The stratification of walls with alternate courses of white and black marble, and the use of parti-colored voussoirs, is prevalent with it. The columns, usually of marble, are delicate and slender, the capitals wonderfully carved, and the whole structure full of a charm of color and refinement of which the Northern churches are devoid.

Upon the interior of the churches fresco painting had already begun to make its appearance, and, as had been the custom from the earliest times, the walls were hung with stuffs and tapestries. The designs upon these, apart from the pictorial representations of biblical or other scenes, were for the most part isolated units displayed at regular intervals upon a ground of color. The combinations most in favor, as is the case usually with semi-civilized peoples, seem to have been those of reds and greens. There was also a yellow a little richer than yellow ochre, a deep purplish chocolate, an indigo blue, and a pale bright blue. The reds were of a light brick color, the greens pale, both yellow and blue greens. Sharp contrasts of light and shade were as evidently preferred in color as in the carving and construction; it is interesting to note the gradual abandoning of the pungent quality which was at first necessary to please the barbaric taste, as that taste becomes slowly educated.

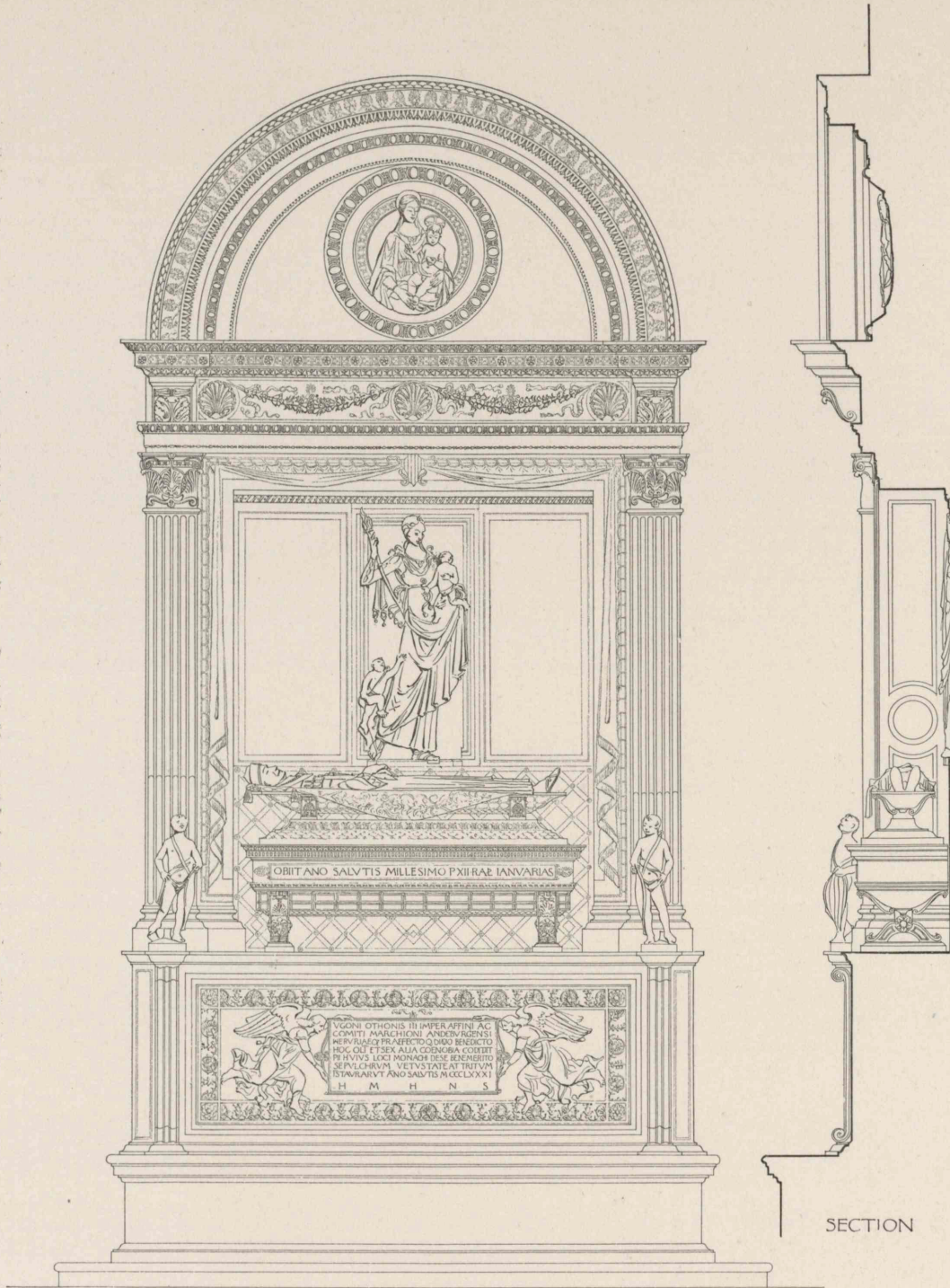
The carving upon the arch-mouldings is, to a great extent, geometric, consisting of numerous facets cut in the stone, lozenges, etc.; the so-called dog-tooth moulding is a very favorite form of decoration. All these carved mouldings were picked out in color, usually in red and green.

At Corneto and Viterbo, some twenty miles north of Rome, there exist a number of peculiar houses with outside staircases, which have a class of decorated moulding akin to those of Romanesque work. These mouldings, which are applied to segmental, not to round arches, and are also used upon belts and other courses somewhat as the Byzantine acanthus is used, are upon buildings which seem to have immediately preceded the thirteenth century Gothic. The carving resembles that upon old Normandy chests, and also, queerly enough, that upon Feejee paddle blades. It is a sort of honeycomb pattern in which the walls of the depressions are not perpendicular, but slant to a point in the centre; the depressions themselves are usually triangular in shape, and the ridges between them form a geometric pattern. The profile of these mouldings is usually a plane, and their light and shade is most effective. Both in Byzantine and Romanesque work stems of plant-forms and of leaves are unnaturally broad and large in proportion to the foliage, and in both they are flattened and scored with a series of parallel lines, so that they seem not one stem, but a cluster of stems parallel to each other. The acanthus in the Romanesque has lost much of its vigor, is flat, heavy-tipped, round-edged, and scratched with V-cuts, and the vine is the leaf preferred by the designers.

Frequently masses of wall are cut in geometric diaper patterns, also touched with color. Borders are not broad; and circular forms, except in the arches, are seldom used, the desire to have the eye attracted being better served by the use of angular forms than by curved lines. Romanesque was a barbaric art at the best, and has the usual virtue of the barbarian,—a directness of attack at the problem in hand and a simplicity in treating it, which it is invigorating to see.

C. HOWARD WALKER.

[To be continued.]

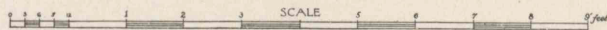


ELEVATION

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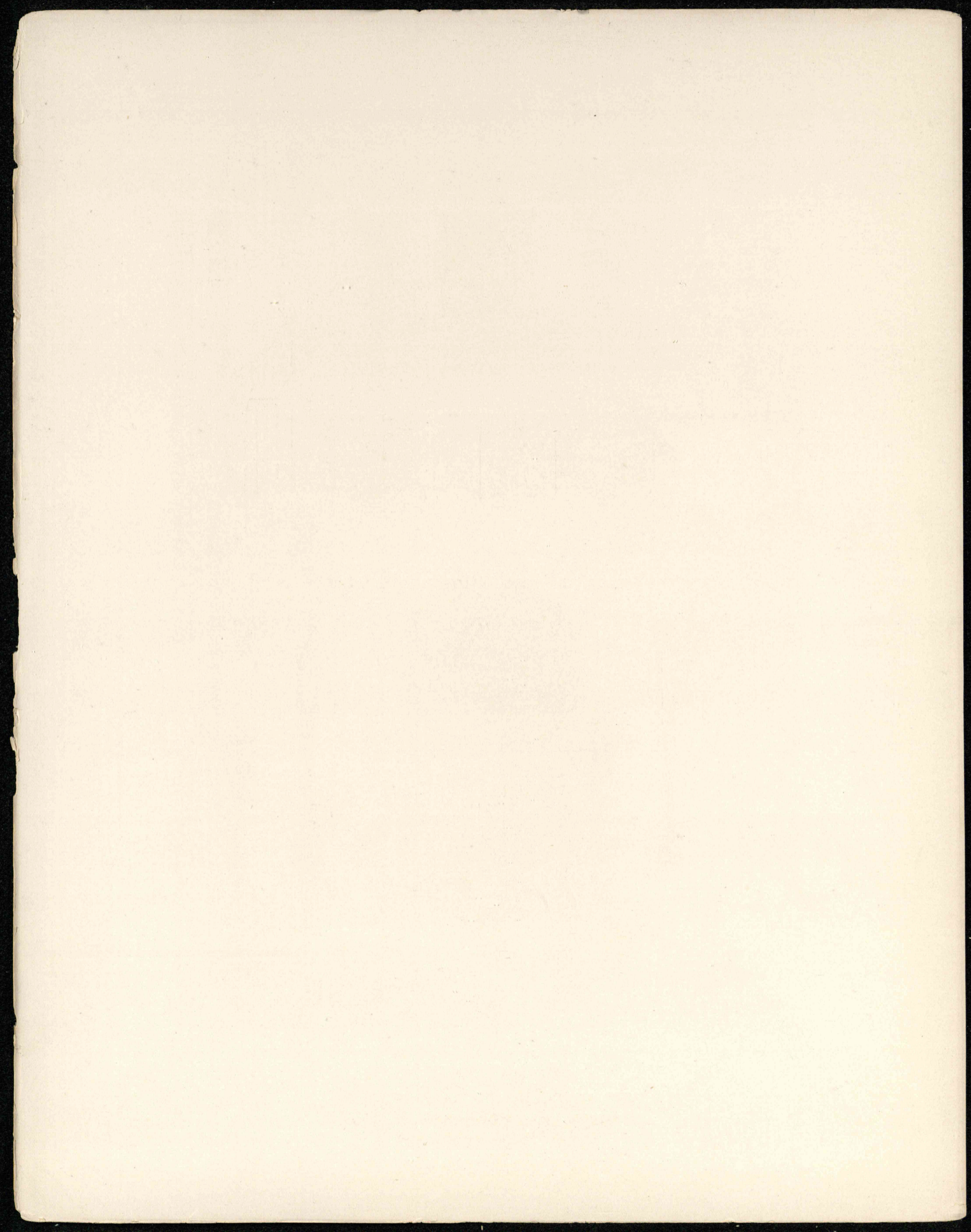
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IN THE BADIA · FLORENCE · ITALY



ROTCH TRAVELLING SCHOLARSHIP.

ENVOI FROM HENRY BACON, JR.

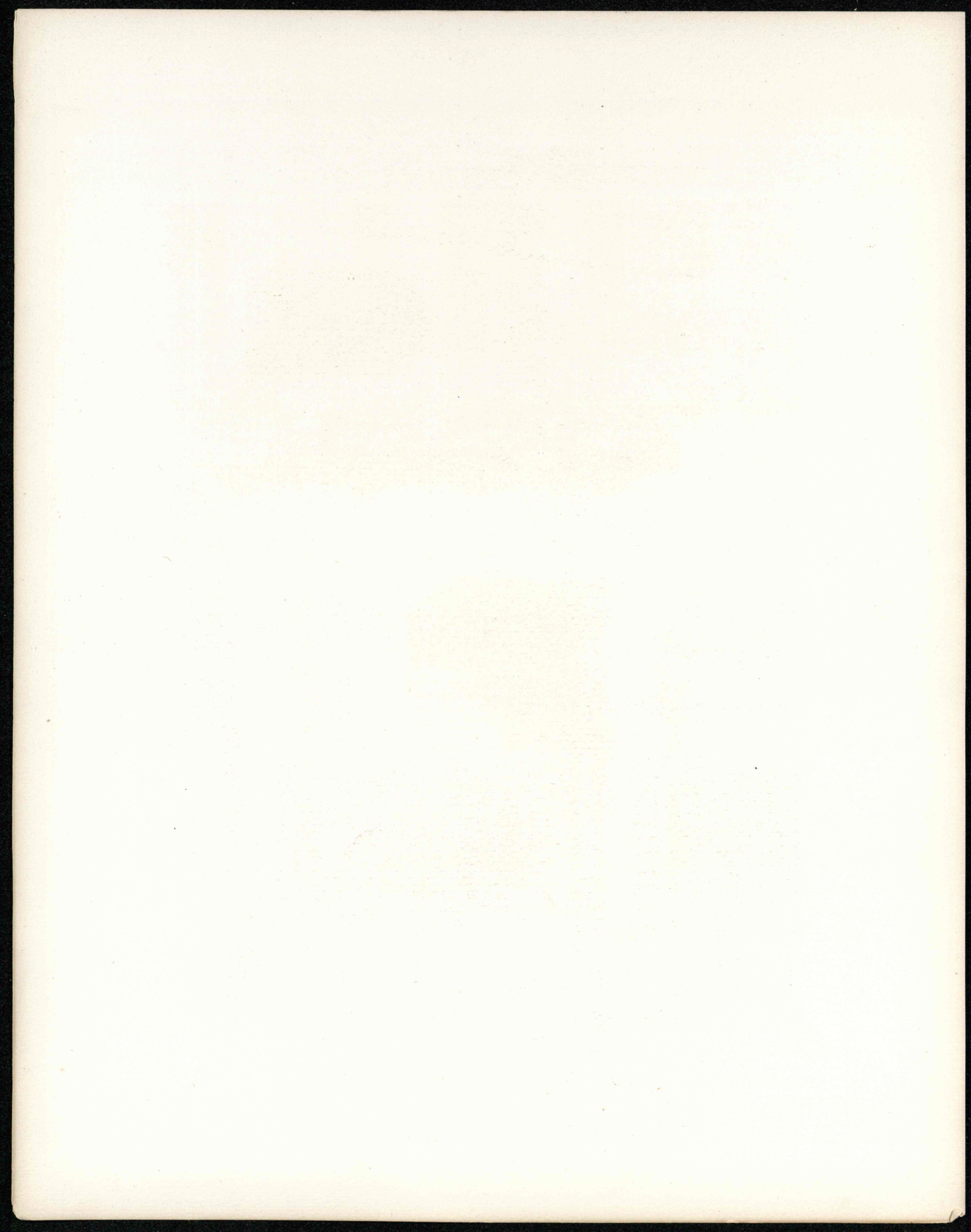


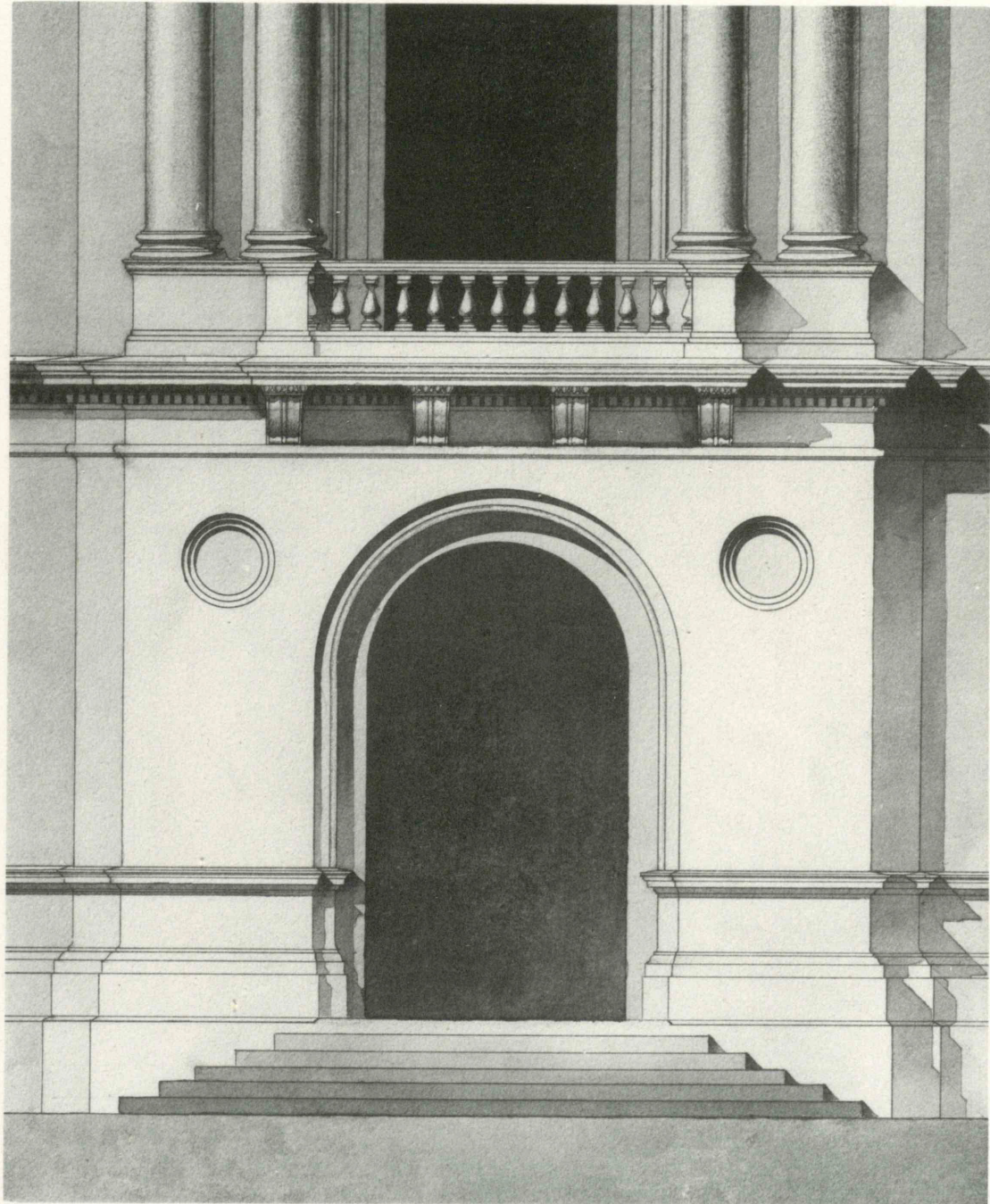


FIRST MENTION.

THIRD YEAR.

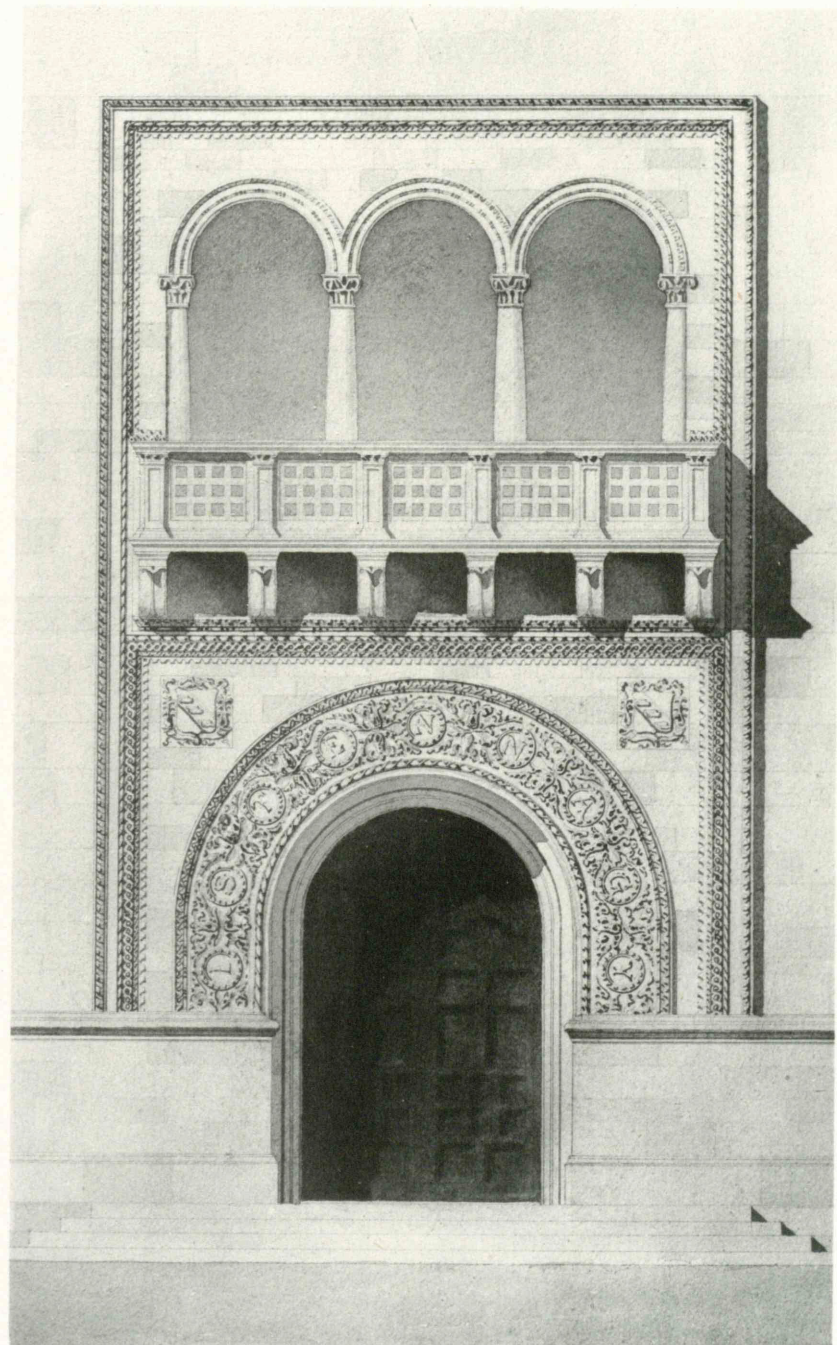
PROBLEM IN DESIGN,
MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
AN ARCHED ENTRANCE, BY EDGAR V. SEELER.





SECOND MENTION.

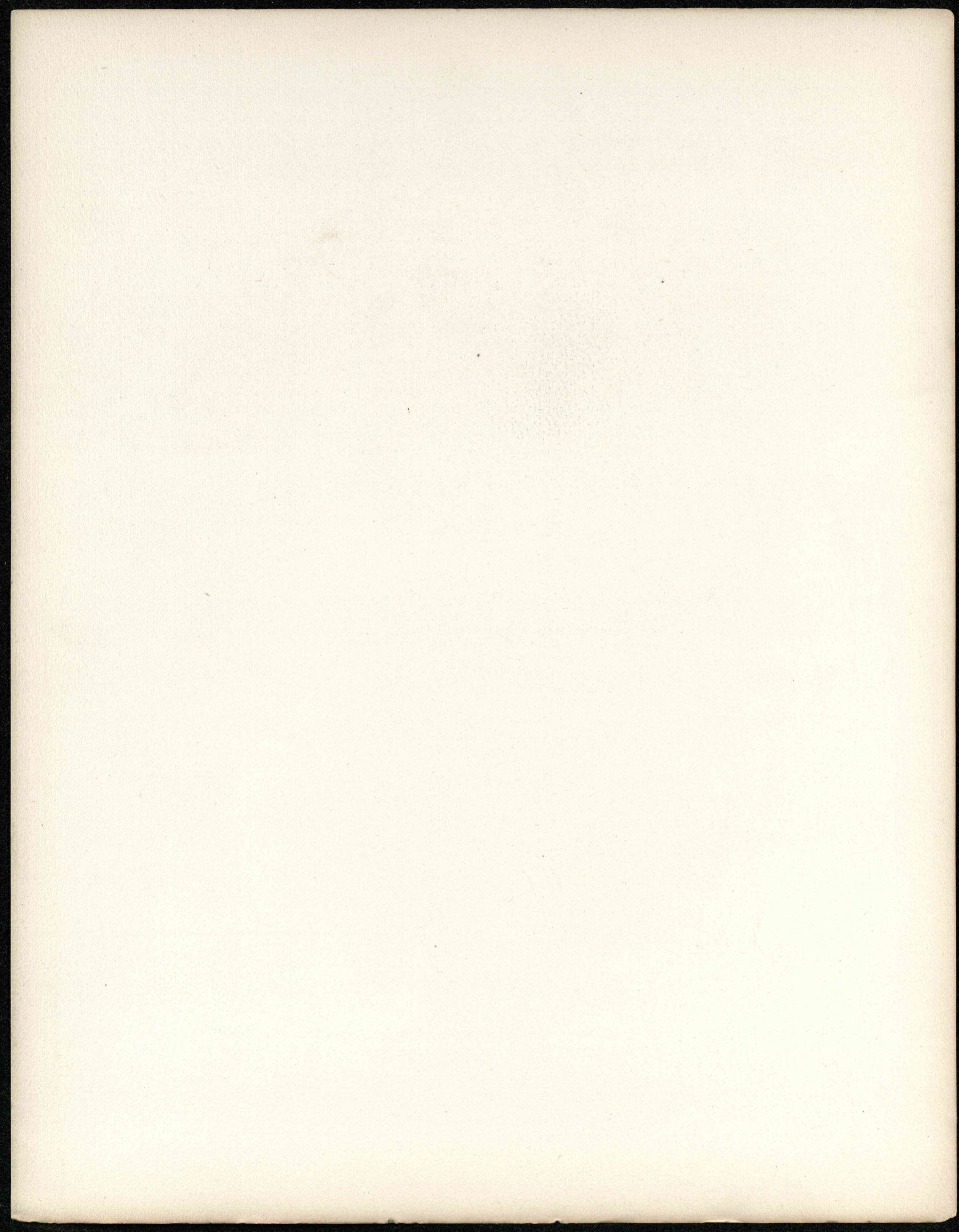
R. H. MILLER.



THIRD MENTION.

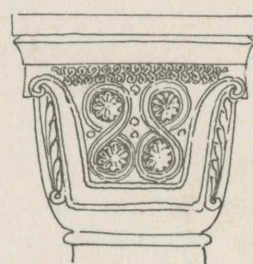
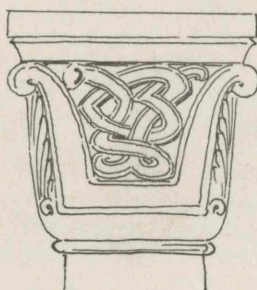
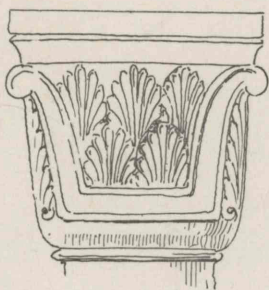
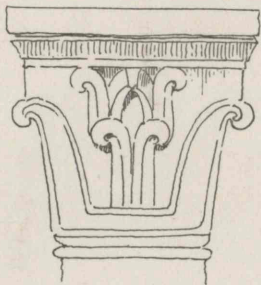
V. A. WRIGHT.

PROBLEM IN DESIGN,
MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
AN ARCHED ENTRANCE.

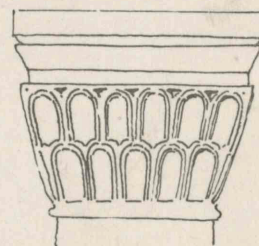
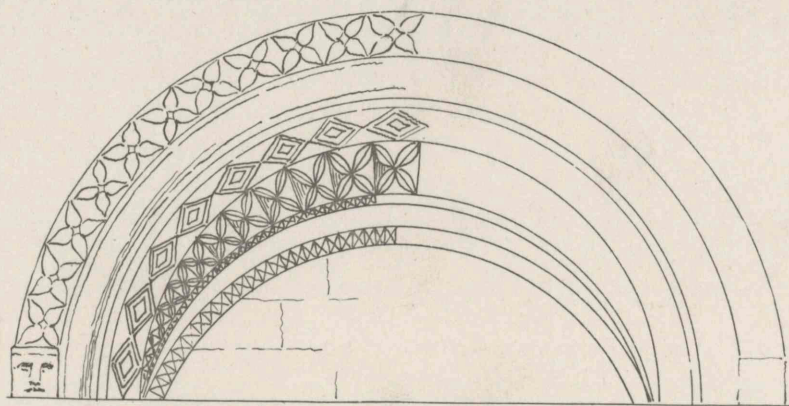
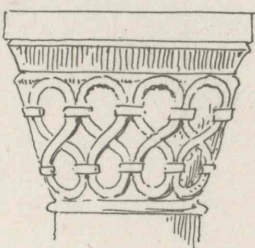


ROMANESQUE CAPS AND ARCHES

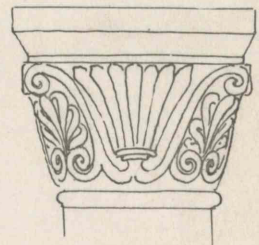
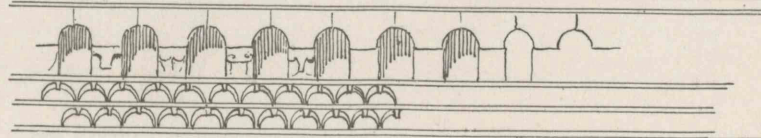
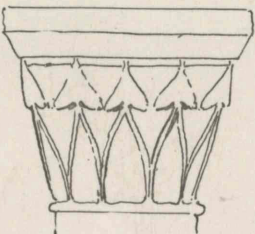
From Colmans Normandy



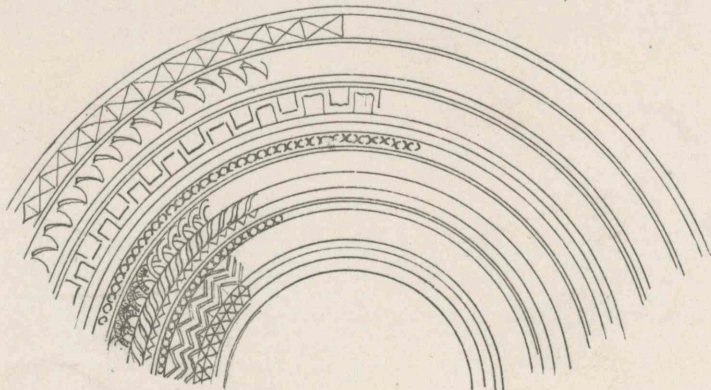
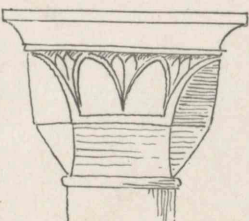
Eglise de Sanson de Rille



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Dept. of
Archit.



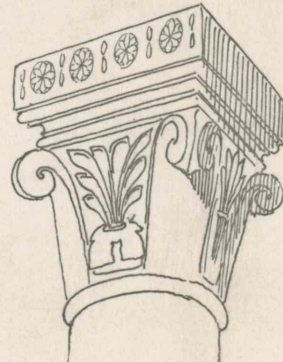
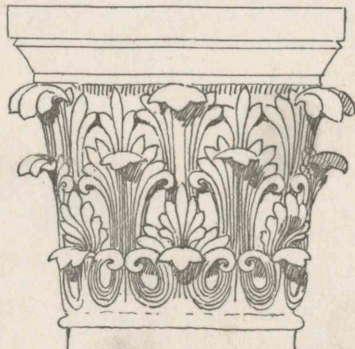
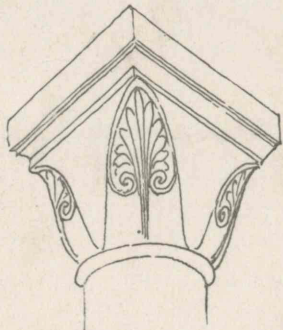
Eglise Bieville. near Caen,



Eglise Bieville,

Abbaye St George de Bocherville

Eglise Bieville



Abbaye St George de Bocherville
An Imitation of Corinthian Cap

