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No. 1.

THE VILLAS OF ROME.

PART II.

THE gardens of Italy have for centuries excited the admiration of the world and have served as the models of all that has since been done in landscape gardening on classic lines. As early as 1492, when the French made their memorable invasion of Italy so fruitful in the discovery of Italian civilization, if of nothing else, Charles VIII. writes: "Above all you would not believe what fine gardens I have in this city, for on my faith it seemeth that they lack only Adam and Eve to make them a veritable Paradise on earth."

Since then these villas have been described and studied, measured and drawn by many eminent architects. Of these the earliest, such as Falda and Piranesi, contented themselves with descriptions and drawings of the picturesque qualities of the villas, and it was not until Percier and Fontaine had spent many years of patient labor in drawing from measurement the casinos and their gardens that anything in the way of careful research and scientific accuracy was attempted. Even in their day many of the notable villas, such as the Madama, Negroni and Sacchetti were already in ruins, while since then the iconoclastic builders of modern Rome have spared only such as were beyond their reach.

In a previous number (Architectural Record, Vol. VI., No. III) the villas of the city proper were described. As was there pointed out, there is a marked difference in character between the urban and suburban villas. In the former, the buildings were intended as rendezvous rather than as residences, and were seldom more than casinos, intended for the exhibition of works of art. The grounds are for the most part too restricted to permit of any extended treatment in the ramps and terraces, which give to the gardens their chief at-

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traction, while the water, which plays such an important part in Italian landscape gardening, could only be obtained from a distance, and the expense limited its use to fountains. None of these restrictions was imposed upon the architect of the suburban villa. The casinos expand themselves into huge buildings capable of accommodating a large company and their retinue, while the parks and gardens which occupy a large area, are treated with the greatest skill.

Before we proceed to describe the villas in detail it will be well to consider the social conditions of which they are the expression, the sources from which their characteristic details were derived, and in studying them as a whole to discover, if possible, what constitutes their peculiar charm.

In the first place we must remember that an Italian villa is not a single building, but rather a great establishment, consisting of the casino, or dwelling of the proprietor, the secondary buildings, such as farmhouses, out-buildings and dependencies, and the park, with its gardens, terraces, fountains and pavilions. It is the park rather than the casino which is remarkable, for the latter is seldom of any great architectural interest, and is considered, not as with us the most important part of a suburban residence, but only as a refuge in inclement weather, or as a shelter at night.

In considering Italian villas one is at once struck by the judgment with which the site has been selected, the ingenuity with which every natural advantage of the place has been made use of, and the skill with which the architect has so disposed the various parts that all may form a charming whole, while on every side may be new surprises and unexpected delights.

The buildings are never placed as with us almost at random, but there is always a progression artistically managed from the unconfined naturalism of the lower park to the strict formalism of the grounds which immediately surround the casino. In the Italian gardens there is all the variety and picturesqueness of other parks, without either the puerile simplicity or monotony which too often characterizes our efforts. With them there is never the small ingenuity or the ingenuity in small things—the petty details that confuse our scheme are properly subordinated. Things are done with a more liberal hand. The statues, vases and fountains are of real bronze or marble, not base imitations in iron or zinc; the porticos, casino and summer houses are of carved stone, and never of painted wood or rustic work. The architectural features, such as fountains, pavilions and statues, are placed to the best advantage and appear to have been called into existence by the necessity of the site, rather than as if, procured by accident, they have found a resting place almost by chance in this place rather than in another.

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CHATEAU D'EAU OF THE VILLA TORLONIA, FRASCATI.



A BASIN AT THE VILLA TORLONIA, FRASCATI.

Many of the features, such as the colossal statues, the Nile gods, grottos encrusted with seashells or covered with stalactites carved in stone, seem strange to us, but these details are seldom capriciously bizarre; they are always controlled by a fixed purpose and are introduced to produce a certain effect. The faults committed are seldom those of the ignorance which places ingenuity above sentiment or mistakes silliness for simplicity. Statues of iron and fountains of zinc are not mistaken for magnificence.

It would be strange if it were otherwise. The Roman aristocracy were wealthy and prided themselves on their patronage of the arts. Ready to their hands was the most skilful band of artists and artisans that the modern world has seen. The very soil was rich in the

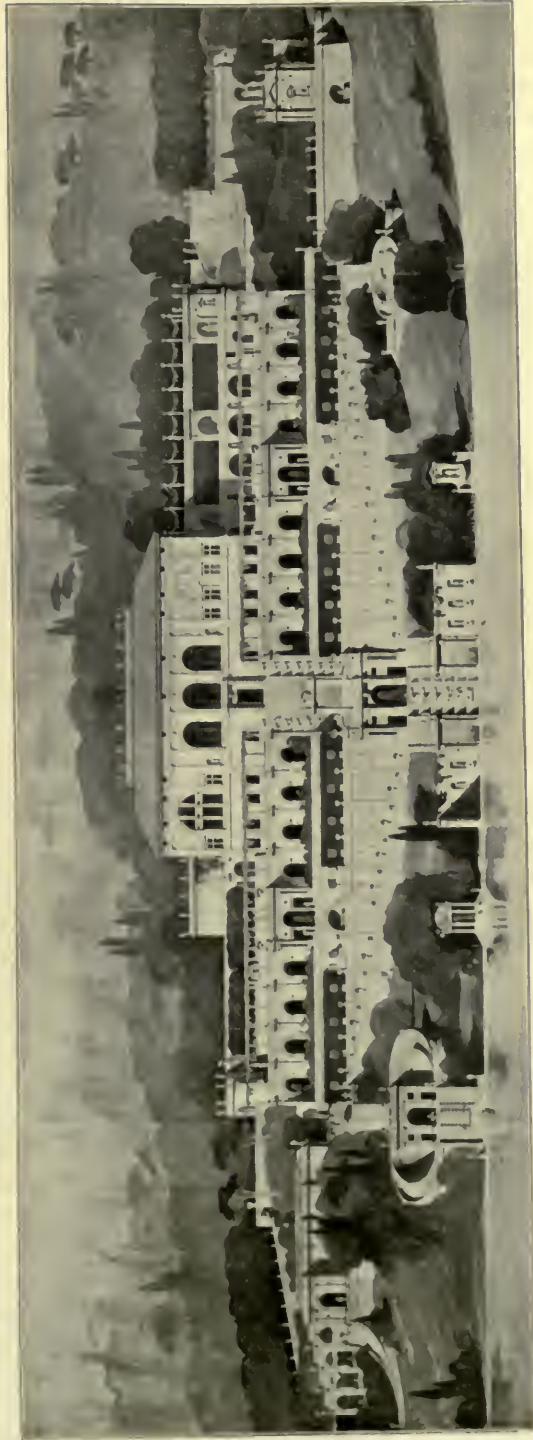


WALK SHADED BY YEW TREES, FLORENCE.

buried treasures of ancient art, the spoils of every country, which for centuries had been awaiting an appreciative age.

The villas became museums of ancient art, and the grounds were filled with originals or replicas of the best that Greek art had produced—columns, statues, vases and marbles, discovered for the most part on the very spot. This rich heritage of ancient Rome the master minds of the Renaissance made intelligent use of, placing it where it would appear to the best advantage.

The skilful disposition of these details and the wonderful skill with which the varied effects are obtained from the use of water in cascades, fountains, grottos and nymphaea seem like fairyland or the



By M. Benard.

RESTORATION OF THE VILLA MADAMA.

gardens of Armida, or persuade us the brilliant conceptions of Ariosto have been realized. At every step new beauties are discovered, from every terrace the wonderful panorama of the Campagna spread at our feet claims attention, while around us at every turn open new vistas. Here a fountain throws its water to a great height against a background of dark foliage; there a stream issues from an obscure grotto formed by mossy rocks, or pours from the throat of some great Triton to form a pool, in which are reflected the foliage of the overhanging trees; then descending through stone channels with a thousand mimic cascades, the stream enters a more formal basin, whose clear waters reflect the marble balustrades and show the mosaic pattern of its bottom, and as we follow its descent through a succession of cascades, rivulets and basins, the scene becomes ever more formal until the casino itself is reached.

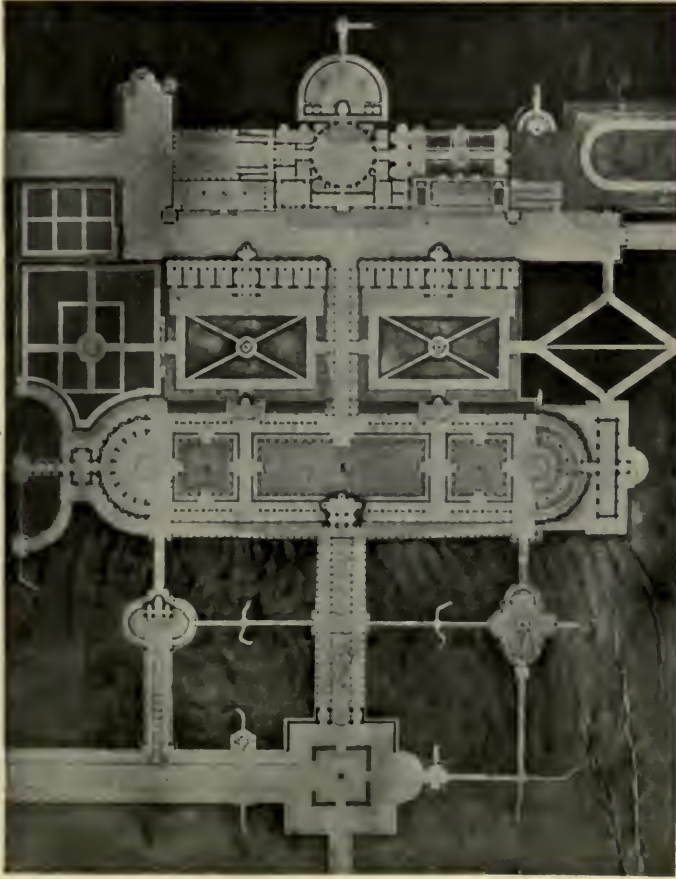
This is usually placed on a great terrace. Behind it is often a gallery or amphitheatre of formal design wherein niches, statues and fountains are disposed. Above this, on the wooded hillside, is placed the chateau d'eau, which occupies a wide passage cut through the forest trees.

The waters are led under the casino and issue again in a similar succession of delightful features until the lowest terrace is reached. This is laid out as a pasture, with beds of flowers within hedges of box, and adorned with statues and fountains. While the parterre, the ramps and terraces which lie before the casino, are usually bathed in the bright Italian sunlight, those at the rear are more naturalistic and picturesque, and are shrouded in the shadows cast by the great trees. Throughout the park paths symmetrically disposed radiate from pavilions or porticos. Here a marble casino, half covered with Roman roses, invites repose and offers an extended view across the Campagna. Further on a grotto, ornamented with shells and wet with dripping plants, enshrines the image of a wood nymph; again, a more pretentious structure with walls of marble and a stuccoed ceiling, decorated in arabesque, contains some rarer statue. Architecture, painting and sculpture, created by the same mind and often executed by the same hand, are united in perfect harmony.

Though seldom occupied, these villas still preserve an appearance of grandeur and magnificence, which the desertion of their owners has in no way detracted from, while the abandon, if anything, lends a greater charm. The effect is not that of disorder, nor does it suggest the picture of ruin and desolation that might be expected. These gardens give us an exact idea of the famous villas of ancient Rome, of the much praised gardens of Lucullus and Sallust, or the villas of Cicero and Pliny.

It is, indeed, remarkable how many of these features the architects of the Renaissance derived directly from their ancestors, the ancient

Romans, whose passion for villa building is evinced by the ruins of the numerous villas, which once filled the Campagna and made of this now deserted plain a garden, which reached from the walls of Rome to the Alban hills. These villas were built on much the same plan, rising in terraces against the side of a hill, each terrace supported upon huge arched foundation walls, which, on a lower terrace, were ornamented with niches and grottos. The lower grounds were never



PLAN OF THE VILLA MADAMA.

Restored by M. Benard.

occupied by buildings, but were laid out in gardens, pastures and vineyards. On the very summit of the hill was placed the dwelling of the proprietor. By this arrangement a view could be obtained from every terrace, and a comparatively small supply of water could be used over and over again in the decoration of the grounds.

The most striking characteristic of these gardens was the entire absence of natural beauty. No tree or shrub was allowed to grow in its own fashion, but all were made to conform to the will of the head

gardener, or *topidarius*, who was ever present to lend a correcting hand, and force the wilful foliage into the prescribed form.

The *allées* were shut in by hedges of box and rosemary, which were carefully trimmed into walls by the skilful hand of the *topidarius*. False as this taste may be we must remember that the gardens of the Romans contained but few plants, and these by no means very interesting ones. Foreign countries had not as yet been made to contribute a thousand kinds of trees and flowers; those at the command of the Romans—the box, myrtle, yew, plane, ilex and laurel—are alike in character, and the desire of imparting interest to their foliage led the Ancients into all manner of absurdities. Paths were often covered with trellises and green arbors, made by stretching canes



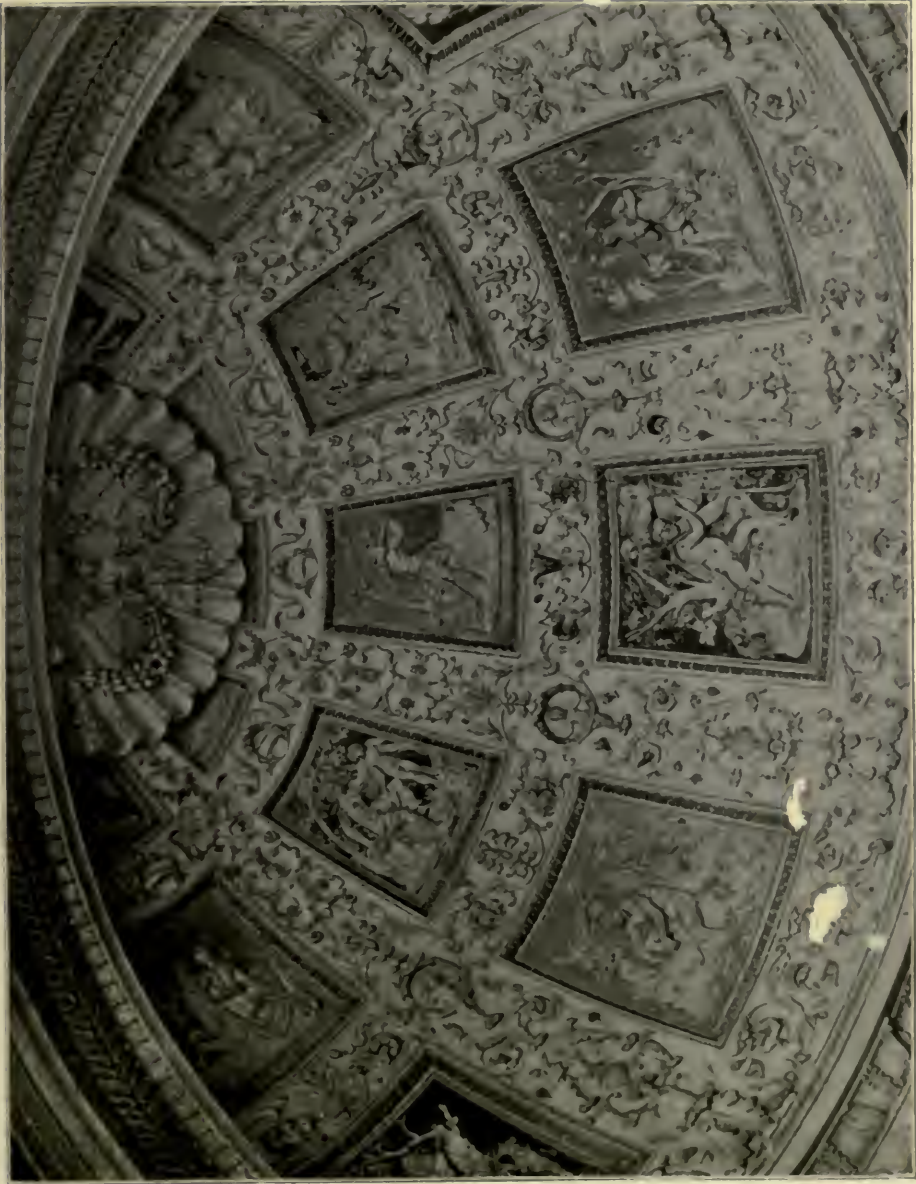
THE LOGGIA OF THE VILLA MADAMA.

from stucco columns over which were trained grape vines, as is the custom in Italy to-day. Violets and roses were the favorite flowers, but the gardens also contained the crocus, narcissus, lilies, hyacinth, poppy and amarynth.

To obtain a perfect picture of the suburban villa of the Renaissance one has only to read the description by Pliny of his Laurentine villa (Pliny, Lib. II., Ep. XVII.).

How large must have been the great villas of the Roman Emperors we may imagine from reading the description of this villa which Pliny says is "large enough to afford all desirable accommodations without being extensive."

Forty-six rooms are described, and yet that half of the house



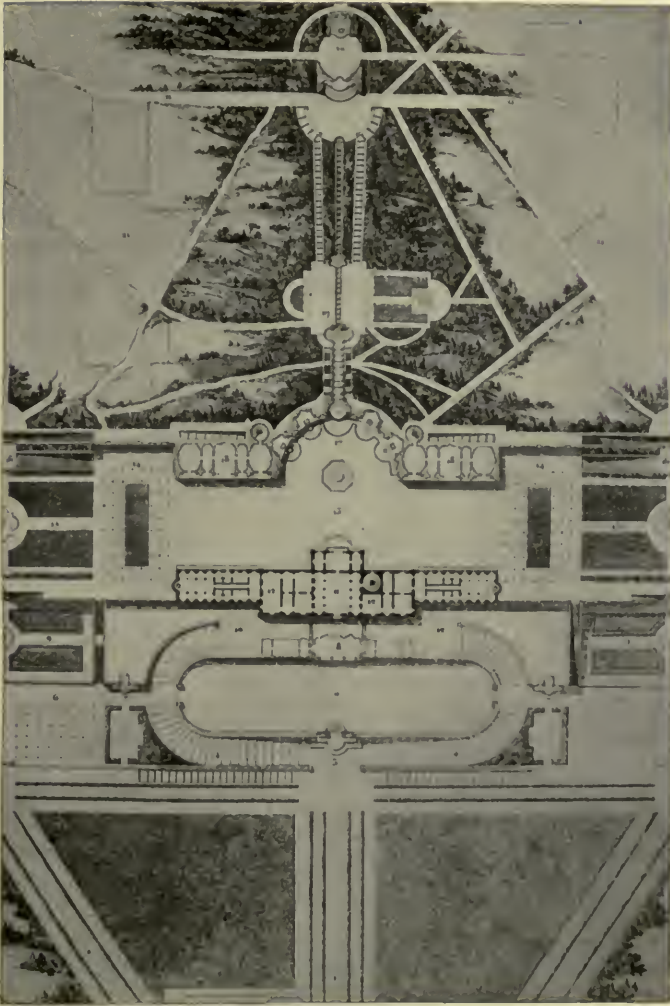
DECORATION IN PLASTER ON THE VAULTING OF THE VILLA MADAMA.

which was allotted to the slaves is passed over with a mere mention. There were rooms adapted for every kind of weather, according as they were sheltered or exposed to the different winds or received the morning or afternoon sun.

But it was on the gardens of the villas that the Romans lavished their greatest care. Their lives were for the most part spent out of doors, in the exercises of the gestatio or the tennis court, in walking in the shaded allées or in the porticos and galleries which surrounded the house on every side. For them the house was a refuge in bad weather or during the hours of eating and sleeping; the rest of the day was spent in the open air. So it is that while the buildings were large and adorned with every art that the most luxurious could demand (for the Romans carried their taste for marbles and mosaics and furniture of bronze or carved marble, with them into the country), the buildings were insignificant when compared with the vast areas, which were laid out in terraces, gardens, race courses and swimming pools, among which was scattered a profusion of statues, of marble temples, and orange trees in vases of bronze or marble. The whole was disposed on strictly architectural lines. At the end of each alley a decorative feature closed the vista. Before the villa on successive terraces were sheets of water in marble basins, fed by many fountains, while on either side the box-hedged allées led to the gardens and meadows below. Here and there were disposed to the best advantage porticos, libraries, dining halls and guest chambers, each occupying its own building, and removed from the noise and interruptions of the main hall.

As for the gardens, they are best described by Pliny, who writes as follows about a larger estate which he possessed among the Tuscan hills:

The exposition of the house is due south and seems to invite the afternoon sun in summer into a spacious and well proportioned portico. * * * In the front of the portico is a sort of terrace, embellished with various figures and bounded by a hedge of box, from thence you descend by an easy slope adorned with representations of various animals in box, answering alternately to each other, into a lawn overspread with the soft, I had almost said the liquid, acanthus; this is surrounded by a walk, enclosed with evergreens, shaped into a variety of forms. Beyond this is the gestatio, laid out in the form of a circus, ornamented in the middle with box cut in numberless different figures, together with a plantation of shrubs, prevented by the shears from sprouting up too high. The whole is fenced in with a wall of box rising by different ranges to the top. * * * Opposite to the centre of the portico stands a square edifice, which encompasses a small area, shaded by four plane trees, in the middle of which rises a fountain, from whence the water running over the edges of a marble basin gently refreshes the surrounding plane trees and the verdure beneath. This apartment consists of a bed chamber, secured from every kind of noise, and which the light itself cannot penetrate, and a dining room, which I use when I have only intimate friends with me. There is also another room, which, being situated close to the plane



PLAN OF THE VILLA ALDOBRANDINI.

Drawn by Percler & Fontaine.

tree, enjoys a constant shade and verdure. Its sides are encrusted half way with carved marble, and from thence to the ceiling a foliage is painted with birds intermixed among the branches, which has an effect altogether as agreeable as the marble. At the base, a little fountain playing through several small pipes into a basin produces a most pleasing murmur.

Pliny then describes a succession of apartments, dressing and anointing rooms, hot and cold baths, swimming pools and plunges, then come porticos and galleries, some of which are enclosed, bedrooms and suites of apartments, until "a very spacious hippodrome is reached."

This is enclosed on every side with plane trees, covered with ivy, so that while their heads flourish with their own foliage, their bodies enjoy a bor-

rowed verdure and thus the ivy twining around the trunks and branches spreads from tree to tree and connects them together. Between each plane tree are planted ilexes, and behind these bay trees which blend their shade with those of the planes. * * * In one place you have a little meadow, in another the box is cut into a thousand different forms, sometimes into letters expressing the name of the master, sometimes that of the artificer, while here and there little obelisks rise intermixed with fruit trees, when on a sudden in the midst of this elegant regularity you are surprised with an elegant imitation of the beauties of rural nature. * * * At the upper end is an alcove of white marble, shaded with vines supported by four small Carystian pillars. From this bench the water, gushing through several little pipes as if it were pressed out by the weight of the persons who repose themselves upon it, falls into a stone cistern beneath, from whence it is received into a finely polished marble basin, so artfully contrived that it is always full without ever overflowing. When I sup there this basin serves as a table, the larger sort of dishes being disposed around the edge while the smaller swim about in the form of vessels or little water fowl. Corresponding to this is a fountain, which is incessantly emptying and filling, for the water, which it throws up to a great height, falling back into it, is by means of the openings returned as fast as it is received.

Then Pliny describes a "summer house of exquisite marble," then a "little private recess, furnished with a couch," and shaded by a vine; "in this place, also, is a fountain which rises and instantly disappears." Scattered throughout the grounds are "marble seats, which serve no less than the summer houses as resting places after one is tired with walking. Near each seat is a little fountain, and throughout the whole hippodrome several small rills run murmuring along where-sover the hand of art thought proper to conduct them, watering here and there different spots of verdure and in their progress refreshing the whole."

So much of Pliny's enthusiastic account of his Tuscan villa has been quoted because no better description of the villas of the Renaissance could be framed. As one charming feature after another is described we might imagine it a letter of an appreciative tourist who was attempting to give some idea of the beauties of the great villas of Frascati, Tivoli or Viterbo.

The Romans of the Renaissance were the true descendants of the Romans of old, and partly because similar modes of living required similar expression, partly because ancient culture was the fashion and men prided themselves on the accuracy with which they followed classic customs and encouraged classic art, villa building came again into fashion, and all descriptions of the ancient suburbanum were eagerly studied. Be this as it may, at the end of the fifteenth century the great Roman families began to establish for themselves the summer residences among the Alban hills which have made the landscape gardening of Italy a model to all the world.

In passing from a description of the villas contained either within



GALLERY BEHIND THE CASINO OF THE VILLA ALDOBRANDINI.



A PART OF THE GRAND STAIRCASE, VILLA CONTI, FRASCATI.

the walls of the city or in its immediate neighborhood, to those of the suburbs we may well consider the Villa Madama, which, standing halfway up the slope of Monte Mario, the lofty hill overlooking the city on the north, partakes of the nature of both. Here we find the casino of the city villas merging into the great pile of buildings which characterizes the suburban villas, while the architecture is so palatial as to suggest the influence of its neighbors in the city, from the outskirts of which it is separated only by its own orchards and vineyards, which slope to the banks of the Tiber.

The Villa Madama exhibits a new departure in the disposition of the surrounding gardens. Here, for the first time, we find a studied arrangement of ramps and terraces and all the elements which, in subsequent years, developed into the elaborate architectural gardens which characterize the Italian villa. The villa was designed by Raphael for Cardinal Giulio de Medici, afterwards Clement VII., but the death of the master in 1520 occurred before work had been begun, and its erection was entrusted to his pupil, Giulio Romano. The grounds and the various casinos, porticos and exedras were intended to reproduce as closely as possible the villas of ancient Rome with which Raphael was well acquainted from the ancient fresco paintings.

The whole was on the grandest scale, for if the original design had been carried out it would have been by far the largest villa in Italy.

Only a small portion was completed and the present building is no more than a quarter of that originally contemplated. The most striking feature of the building was to have been a circular court some seventy feet in diameter, inscribed within a square, the corner pieces being filled by dependencies of a single story, while the whole was contained within the quadrangular court within the greater buildings. Above these one-story dependencies was a terrace, from which spectators could have a view of whatever pageants were enacted in the court below. Three open loggias were to occupy the centre of each of the two sides, while against the hillside, in the rear, an amphitheatre was to have been formed in imitation of those of ancient Rome. The loggia in the front would have commanded a wide view of the entire city and the gardens which reached to the river's edge.

The building, as it now stands, consists of only the eastern loggia and the adjoining rooms, half of the circular court and the eastern terrace. It is this loggia which is now the only attractive feature of the building, and it is the decorations in plaster which have made it famous.

In plan, the loggia consists of three bays, separated by piers; from the center one opens the passage to the circular court, while the others are extended into semi-circular apses. The entire surface of pilasters, walls and vaulting is of plaster, and covered with decorations

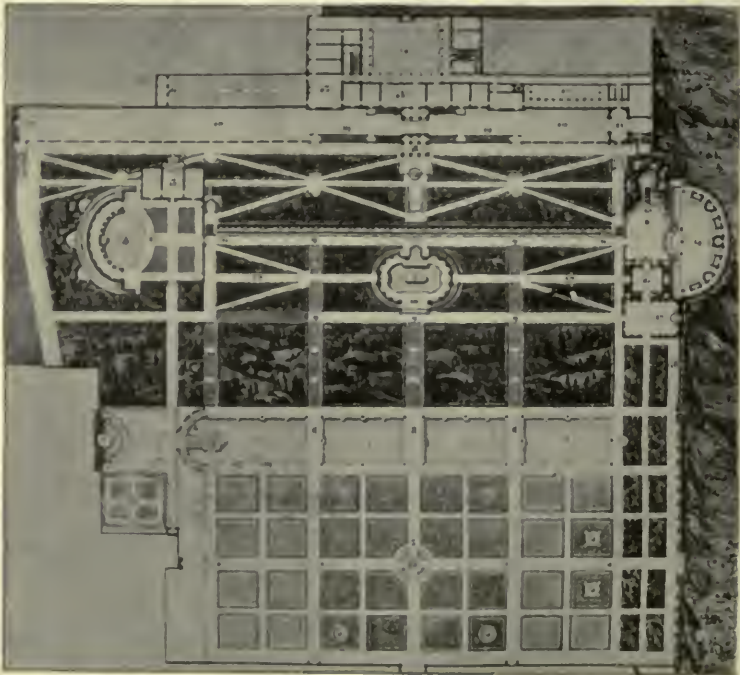


GALLERY BEHIND THE VILLA LANCELOTTI, FRASCATI.



GALLERY OF THE VILLA MONDRAGONE, CASTELLI, ROMANI.

in relief and in fresco. The latter have well-nigh disappeared from the walls, and can only be traced here and there by patches of color and by the indented lines, which still suggest the outlines of arabesques, garlands and cupids. The decorations in plaster for which the loggia is justly celebrated were suggested to Raphael by the beautiful decorations in relief which still exist in many of the Roman ruins. This medium he had used with great effect in the Vatican stanzas, and his pupils, Guilio Romano and Giovanni da Udine, who had taken part in the execution, naturally employed the same material in the decoration of this new work which they had inherited from their master and carried it to a still greater development.



PLAN OF THE VILLA D'ESTE.

As measured by Percler & Fontaine.

By the courtesy of the Duc de San Martino I was permitted to make careful measurements and to draw to a scale the entire loggia and many of the charming details. The delicacy of the reliefs is surprising. The pilasters and piers are completely covered with a fine network of ornament, which for the most part is not over a sixteenth of an inch in relief; those portions in high relief vary from one-half to three-quarters of an inch, the reliefs increasing in boldness as the distance from the eye becomes greater.

Added to the arabesques, which were suggested by ancient plas-



THE VILLA D' ESTE, TIVOLI.

ter work, are many more natural motives, such as heads of wheat, strawberry leaves, flowers and birds. These appear to have been cast in moulds and affixed to the walls; the connecting lines were then made in the fresh material with some blunt instrument. In no place is there the same grouping. One pilaster is completely covered with ears of wheat, all of which are made from a single mould, but which are so skilfully disposed, and so admirably grouped by the connecting lines that some appear stiff and upright, while others droop in many different curves. The whole has all the charm of a freehand sketch. Another is covered with a fine network of strawberry leaves, also the impression of a single mould, interspersed by images of birds, disposed in such different positions that it is hard to believe that they are all from the same mould.

The vaulting of the apses is decorated in a much higher relief, representing scenes from classical mythology. Here are depicted Pan playing on his pipes, Bacchus, Atlas, Europa, Ganymede and a host of other pagan heroes and demigods. All are admirably executed, for they were modelled by the masters themselves, who did not consider it beneath their dignity to execute details which in these days would be intrusted to the workmen. Like the villa, the gardens were never more than the suggestion of the elaborate scheme which had been contemplated.

The upper terrace on which the loggia gives has been neglected for many years. In a niche, half concealed behind a tangle of fern, an elephant's head discharges a stream into the basin beneath. A stone piscina occupies the centre of the terrace, but the bowl in which the gold fish once disported is now filled with a rank growth of weeds. Below is a great basin, which once reflected the niches and grottos in the foundation walls, but the walls have lost their marble coverings and the basin that once mirrored the shrines of pagan deities now reflects only crumbling walls and tangled underbrush. The Villa Madama has more than once been restored by architects, and has received great attention from the pensioners of the French Academy at Rome. The restorations of M. Bénard which are here presented, while perhaps visionary, give an excellent idea of the scale and arrangement of a great Italian villa, and show, perhaps more clearly than any photograph of an existing villa, the treatment of ramps and terraces and the disposition of exedras, porticos, fountains and nymphæa.

If modern Rome differs from the ancient city in one respect more than another it is in the abruptness with which the city ends and the country begins.

The modern city has no suburbs, and the walls once passed one enters at once into the deserted region of the Campagna. In the time of Augustus it was impossible to define even approximately the con-



CASCADE IN THE VILLA D' ESTE, TIVOLI.



SWIMMING POOL IN THE VILLA D' ESTE.

finer of the city. To the densely populated centre succeeded a circle of detached dwellings; around these were establishments of greater pretensions, while these in turn gave place to the great villas and *latifundia*, each of which constituted a flourishing village, for Rome in those days extended to Ostia, Tusculum and Veii.

All these have now passed away, and over the buried villages and deserted grounds stretches the great plain of the Campagna.

I know of no more impressive sight than this fever-stricken wilderness whose silence is unbroken save by the occasional train that hurries through as if afraid of the miasma. But the Campagna once passed, a different scene is entered as suddenly as the Eternal City is succeeded by the Campagna.

The train, as it leaves the Campagna and begins to climb the spurs of the Alban Hills, enters a region clad with the silver green of the olives, whose gnarled and blighted trunks seem but little younger than the aqueducts and ruins of the Campagna. To this succeed the vineyards, where the vines, climbing from one ilex tree to the next, ripen their grapes on the sunny hillside—for all these places are famous for their wines, and Frascati, Tivoli and Marino are names well known to the epicure.

Finally the foot of the mountain is reached, and the traveller climbs the steep hillside and finds himself in the thriving village of Frascati.

It is not strange that the wealthy members of the papal aristocracy were not slow in recognizing the beauty of the site of the ancient Tusculum, which in former times had witnessed the delights of Lucullus, and that they here erected the many splendid villas to which they retired when, the heat of the summer having abated, they were able to leave their castles in the north of Italy, but were as yet unable to enter the heated and unhealthy city.

From the hillside an uninterrupted view over the Campagna may be obtained which reaches to where, in the far distance, a faint blue line marks the waters of the Mediterranean.

To the north and west rise the wooded slopes of the Sabine and Umbrian Hills, while before us lies Rome, whose domes and towers are plainly seen in spite of the fourteen miles of desolation which lie between the Alban Hills and the Eternal City.

The atmosphere of Rome is peculiar to itself. Nowhere else, save in the landscapes of Claude de Lorraine or Gaspard Poussin, can one find the clearness and yet softness, the ideal light which reveals the masses while it hides and softens all that might be hard or unsightly in the outlines.

A peculiar vapor rises in the distance which seems to unite the plain, the mountains and the sky in one harmonious whole, where tint succeeds tint, and the colors by insensible gradations merge into one



THE CASINO AND PARTERRE, VILLA LANTE, BAGNAIA.



THE PARTERRE FROM THE FIRST TERRACE, VILLA LANTE, BAGNAIA.

another until one cannot tell where the greens and purples of the hillsides are lost in the opals and lapis lazuli of the clouds.

No more beautiful country could have been found, nor one which offered greater natural facilities to the architect. The gentle slope of the hills presents a variety of attractive sites, while the forests of great trees and the inexhaustible supply of water which finds its way downwards through many streams and rivulets lend themselves readily to the adornment of the parks and gardens.

From the end of the little square which occupies the centre of the town of Frascati rises the park of the Villa Aldobrandini, also



THE SECOND AND THIRD TERRACES, VILLA LANTE, BAGNAIA.

known as the Belvedere, from the beautiful view which the terrace commands.

Through the level lower grounds three avenues of giant ilex trees lead to a terrace with semi-circular ends, which measures some three hundred by seventy feet; against this is built the retaining wall of the upper terrace, which is about four hundred and fifty feet in length.

On this stands the casino, an uninteresting building, the last work of Giacomo della Porta, who erected it about 1598 for Cardinal

Aldobrandini, the nephew of Clement VIII. Like most of the suburban Italian villas, the exterior is of little importance as compared with the grounds in which it is set. Behind the villa is a higher terrace, at the level of the principal story, from which a grand vestibule leads to the larger apartments. The kitchens and other dependencies are placed in one-story wings on either side of the main building.



THE FOUNTAIN AT THE THIRD TERRACE, VILLA LANTE, BAGNAIA.

These open on the lower terrace, while their roofs, decorated with balustrades, statues, fountains and orange trees, form esplanades bounding the upper terrace. Back of the casino, on the opposite side of the terrace, is an imposing loggia with a semi-circular centre, forming, as it were, an amphitheatre, the niches of which are filled with fountains and statuary; behind this is a gallery decorated in mosaic and fresco. Here one may walk in the cool shade, surrounded by flowers and green plants and charming works of art, while the ear is delighted with the splashing of the cascade without.

Far up the hillside is the grotto from which issues the stream which supplies the entire park with waters innumerable. The arrangement of the chateau d'eau is the work of Giovanni Fontana and

Orazio Olivieri, landscape gardeners and architects. The waters, issuing from the grotto, are collected in a broad basin, and are then conducted through open stone cisterns or channels to the cascade in the rear of the casino. These stone basins are employed in many of the villas, in which water plays an important part in the adornment of the park. They are raised several feet above the ground, and are built at an inclination. Down this the waters rush swiftly in a narrow stream, which is broken into innumerable little cascades by impediments placed in the stone bed. Another favorite device is to lead the water by a succession of stone basins, each of which, receiving the water from its predecessor, discharges it into the next through the mouth of a mask, the nostril of a dolphin, or by a mimic cascade rippling over a carved sea shell. On either side flights of stone steps, here and there adorned with a fountain, follow the course of the stream.

What a heritage of delight have these princes of the Renaissance, who in their day cared only for themselves, bequeathed to posterity, and how much less attractive were those gardens as their owners built them than they are to-day, for, after all, we must acknowledge that the charm is due as much to the kindly touch of nature as to the skill of man.

The amphitheatre, now so charming in the green mosses which hang to the walls of grottos and clothe the limbs of centaurs and of fauns, must have been less attractive in its coat of gaudy stucco, and the statues, in their dazzling whiteness, unsheltered from the lightness of the Italian sky, must have had a different character from the shy creatures which peep from their shelters of clinging vines; nor could the trim balustrades, the fresh vases and the new marbles have had the charm of color which makes them blend so happily with the russets and greens of their surroundings.

The abandonment and neglect of their owners detract but little from their old magnificence, while the silence which reigns in these delightful places but adds to their attraction.

Adjoining the grounds of the Aldobrandini are those of the Villa Conti. The casino is architecturally unimportant, and its only attraction lies in the magnificent rose trees which have been trained against the walls, which they almost conceal in a bower of fragrance.

These trees, centuries old, reach to the highest cornice and cover the walls with a shower of red and yellow Roman roses. I have seen these trees in midwinter, and found them still bending under their load of blossoms.

I imagine that this building was but a temporary affair, for the four great flights of steps, each some twenty feet broad, and flanked with balustrades of stone, which lead to the broad terrace on which no building stands, as well as the elaborate treatment of the grounds,

would imply a more pretentious casino than the present building; if so, it was the wiser course to begin the gardens and plant the trees before commencing the building. The park is perhaps the most attractive of those at Frascati, for the trees are superb, and the arrangement of the ramps and terraces and the nymphæa and cascades, while less formal than those at Aldobrandini, are not less elaborate.

Adjoining the Aldobrandini on the other side is the Villa Rufinella, the property of Prince Lancellotti. The casino, built by Vanvitelli on the site of the Academia of Cicero, is architecturally of little interest.



VILLA CAPRAROLA.

In the park are some wide walks shaded by ilex trees. These, planted in two parallel rows some twenty feet apart, have formed an arbor by the meeting of their branches. They are kept carefully trimmed, so that the sides and top form thick walls of vegetation, which present, from the outside, the appearance of a gigantic hedge. I have seen the same treatment of box hedges in England and France, but the greater size of the ilex trees permits a broad walk instead of the simple passage.

The Villa Taverna, designed by Gerolamo Rainaldi for the Prince Borghese, has a casino whose forbidding exterior gives no

hint of the charming gardens which in the rear rise from the casino in a great amphitheatre upon the hillside. Beyond these gardens avenues of orange, laurel and cypress lead to the adjoining villa, also the property of the Borghese.

The Villa Monte Dragone, the most pretentious of the Frascati villas, was built in 1567 by Martino Lunghi for the Cardinal Altemps, nephew of Pius IV. Pope Gregory XIII. made extensive additions to the villa, which was finally completed by Flaminio Ponzio and Giovanni Vasanzio for Paul V. and his nephew Scipio Borghese.

Architecturally this is the largest and most magnificent of all the Roman villas. The main palace measures 320 feet in length by 108 feet in depth. It is a two-story composition, behind which is a square court of great size, enclosed on one side by a gallery, richly decorated with paintings, and on the other by a two-story wing containing suites of apartments. Behind this again is an oval terrace, adorned with niches and statues, which seems to have been intended for athletic exercises. At the rear is a large garden enclosed by walls and entered by a two-storied loggia of some elegance, opposite which is the elevated terrace, approached by a double flight of steps, and having in the centre a semi-circular gallery or amphitheatre.

This is a favorite decorative device which is found with unimportant variations in many of the villas.

Before the casino is an immense terrace built upon the dependencies below, for, the hill being a very steep one, the casino is two stories higher on this side than on the court façade. From this terrace a superb view across the Campagna can be enjoyed, with the domes of the Eternal City rising in the distance.

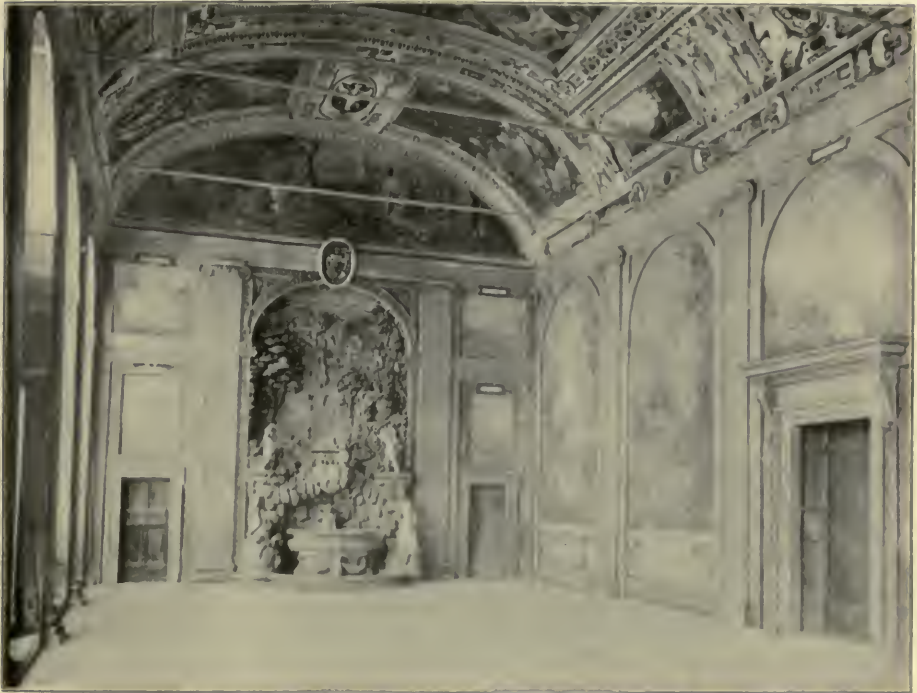
Even in the days of their prosperity the Borgheses neglected this villa, preferring to live at the Villa Taverna. To-day it has passed into the hands of the Jesuits, who have here established a school for boys.

It was a sad sight to see the magnificent court and richly decorated galleries filled with the not over-clean children and resounding with their shrill Italian voices, for it was the hour of exercise, and some fifty boys, each with a hoop, were giving chase to a young Jesuit priest, who, with his cassock and rosary flying in the wind, was trying to protect his hoop from their assaults.

It is unnecessary to describe the villas of lesser importance, such as the Villa Muti at Frascati, the Casino Colonna at Marino, the Villa Guistiniani at Bassano or the Parco Chigi at Ariccia. All are charming and, in a country less filled with masterpieces, would excite interest.

The Villa Barberini at Castel Gandolfo is remarkable as approaching more nearly than any other to the ancient suburbanum. It occupies the exact site and in many ways follows closely the gen-

eral plan of the great villa which the Emperor Domitian built on the west slope of Lake Albano to unite the villas of Clodius and Pompey the Great. The ancient walls, the huge arches supporting the terraces are still there, but hidden under a thick covering of vines and evergreen. The owners have prided themselves on fostering the resemblance, and no tree or plant is allowed a footing but those which adorned the gardens of ancient Rome. The ilex, pomegranate, yew, cypress, stone pine, laurel, fir and myrtle furnish a sufficient shade, while roses, violets, crocuses and hyacinths are the only flowers. Along the walks are architectural fragments of beautifully carved



THE LOGGIA, CAPRAROLA.

marble which, with the columns, statues and niches, once adorned these gardens of Domitian.

Perhaps the villa which is most widely known is the Villa d'Este, at Tivoli. This was commenced about 1540 by Cardinal Hippolyte d'Este. After having passed from one member of the house of d'Este to another it finally became the property of the Dukes of Modena, who valued their heritage so lightly that they sold many of the more famous statues which adorned the grounds to Benedict XIV., who placed them in the Vatican.

The exterior of the casino was never completed, but seems to have been prepared for a veneering of marble, which it never received. It

is an uninteresting structure, with a frontage of 180 feet, and stands on the brow of a steep hill.

The gardens occupy the entire hillside, and present at every step an infinite variety of treatment in which every device known to landscape gardening seems to have been exhausted.

The lower portion is treated as a garden, in which rose trees have run riot for many years. In the centre of the parterre, surrounded by yolk elms and cypresses of great size, a fountain throws its stream to a great height, while between the cypress trees smaller fountains are disposed. From this lower garden the whole arrangement of ramps is visible, which lead to the great terrace some 600 feet in length on which the casino stands.

At every crossing of the ramps is a small terrace, the back of which is filled by a small grotto, in which a fountain throws its waters against the dark background of the dripping water plants. A broad canal, crossed by bridges and enclosed within a marble balustrade adorned with vases and statues, receives the waters of a cascade, which, issuing from a little marble temple, pours over a steep ledge of rock. The little temple is placed on the very edge of the cliff in order that it may be reflected in the pool beneath.

Four ramps lead from the lower garden to the main terrace, all of which are bordered by little rivulets, conducted in marble basins, while the broad walks which cross the hillside from right to left are walled by continuous basins of marble, into which a succession of tiny jets discharge from lion heads, masks and statues set in the marble backing. At every turn one finds grottos in rockwork, presided over by the divinities to whom the fountains are dedicated, pavilions, temples and swimming pools.

Everywhere water is used in the most varied manner, now pouring from the mouth of some monster or issuing from a little temple and falling in a great cascade into a basin, again thrown to a great height or bubbling down the hillside in the marble cisterns. Everywhere are statues, not remarkable as works of sculpture, for the best have been carried away to adorn the endless galleries of the Vatican, but charming in the coating of moss and lichens which hides their deficiencies.

Some of these are placed symmetrically to adorn the walks or to be doubled by reflection in some quiet basin; others are set picturesquely on the summit of a rock in the cool shade of a grotto.

A huge colossus, fallen and broken, has stretched its length for centuries beneath the shrubbery. Diana of the Ephesians discharges a hundred tiny streams from her innumerable breasts. Nile gods and the giant Tiber watch complacently their stony offspring, while forgotten divinities still find in this delightful retreat their temples and grottos.

But if the gardens of the Villa d'Este have achieved the highest success of classic landscape gardening and unite to the greatest natural advantages of the site the best that landscape art can do to beautify nature, it must be confessed that in several instances good taste and restraint have been sacrificed to the satisfaction of invention and the desire to achieve a novelty, and that many effects now charming



THE STAIRCASE, CAPRAROLA.

in their ruin and decay must have seemed bizarre if not ridiculous at the time of their creation.

The traveler in Italy, if he sees any of the suburban villas, is likely to visit only those which are grouped closely together among the Alban hills. Few tourists visit Viterbo or are acquainted with the charming villas in its neighborhood.

The villa Lante lies at Bagnaia, a little town some three miles outside of Viterbo. This charming villa, begun in 1477 by Cardinal Riario, changed hands many times, until Alexander VII., about 1660, gave it to the Lante, who still possess it.

As is usual, the villa occupies the slope of a beautifully wooded hill; against this a wide terrace has been formed, which has been laid out in a beautifully designed and well-kept parterre. The centre is occu-

pied by a square marble basin, surrounded by balustrades and crossed by four bridges, which lead to a little island that serves as a pedestal for a superb group of statuary. Four nude figures of youths in bronze support the Albani arms, from which innumerable jets of water fall into the basin beneath.

Above the parterre, two ramps lead to a higher terrace, where are the two casinos, ascribed to Vignola and decorated with frescos by the brothers Zuccheri. Above this again is a continuous succession of ramps and terraces, adorned with grottos, marble porticos, statuary, fountains and swimming pools, the whole extending up the hillside for a mile or more to the two small casinos with columns and porticos from which issue the streams which supply the waters for the gardens.

From each of the terraces a superb view can be enjoyed. The parterre with its box-trimmed hedges, its obelisks, its statues and its beautiful basin and fountain, lies exposed in the full sunlight, which contrasts with the deep green of the wooded slopes above, where marble temples and porticos are seen but indistinctly in the half-lights under the great yew trees and orange trees, exposing their "golden lamps in a green night." The distribution of light and shade, of sunny garden and shady hillside, if a little theatrical, is wonderfully effective and presents, in my opinion, the most attractive of Italian villas.

Some seven miles from Viterbo is Caprarola, the great estate begun by Sangallo for Alexander Farnese, nephew of Paul IV.

Completed by Vignola, it is, perhaps, his best known work, for the architectural details are of the greatest interest since the beautifully studied doors and windows have become well known from the published works of Vignola.

The fortress-like palace stands on a lofty terrace, which is reached from the parterre below by two stately double staircases.

The interior is superbly decorated and is full of charming detail. The extensive gardens, while interesting from their symmetrical arrangement, have been so greatly neglected that one feels here a sense of isolation unusual to the Italian villas, whose neglect seems if anything to have added to their attraction. It was long ago abandoned by the kings of Naples, who inherited Caprarola with the other possessions of Casa Farnese, and only the solidity of its construction prevents its destruction.

It is not within the scope of the present article to describe the villas of Italy, and I have considered only those which lie in the Roman province, and which were the seats of the great Roman families. We must leave unvisited the gardens and cascades of Caserta, the Boboli gardens at Florence and many others which are among the most beautiful spots in that garden of Europe.

All are charming, but their attraction is not one which can be conveyed by words or by an enumeration of their beauties.

To the admiration which these gardens have inspired we owe the many charming gardens of France, the glories of the Tuilleries and the Luxembourg, of St. Cloud, Versailles and the Italian gardens of many of the chateaux of Touraine. If to them can be traced the inspiration which has given us the gardens of many a quaint Eliza-



PLAN OF THE LITTLE CASINO AND THE PARK, CAPRAROLA.

bethan manor, we must also hold them accountable for the absurdities which characterize many of our modern parks and gardens.

For us, in America, it would, perhaps, have been better if the gardens of Italy did not exist to enthrall the traveler with their sensuous charms, for to them we owe the unhappy attempts at imitation which find expression in the cheap substitutes for real magnificence—the zinc statues, the fountains in which the feeble stream seems glad to hide itself in the cast-iron basins, the stags and ferocious mastiffs of

bronzed iron, the century plants in cheap vases, the bogus statues, ugly pavilions and summer houses which seem a necessary adjunct to our private gardens and public parks.

Sickened by these horrors, we have argued from the abuse against the use of classic gardening, and have now gone to the opposite extreme; abandoning all attempts at an architectural treatment, we have taken refuge in the freedom of the English landscape gardening.

Our roads must now be winding and our paths must twist in a thousand contortions in as many yards, our trees must go untrimmed and our shrubbery unbridled. We make little pools that a ray of sunshine would dry up, and call them lakes; we build little bridges of rustic work to cross our stagnant streams, and sit on benches made of twisted roots or gnarled branches, which are as awkward to look at as to sit upon. We drag rocks from a distance and heap them up on our lawn to form a rockery or fernery, we transplant strange trees of ungraceful shape, and force others to grow which are unsuited alike to our climate and their surroundings.

In the disorder of our imaginations we confound the attributes of everything and forget good taste. On rare occasions we study the works of the great masters of the past, and of late we have produced much of which we have just reason to be proud.

Happily the horrors of the anti-centennial period are giving place to better things in landscape gardening, as in architecture and other arts, and with extended travel and study our landscape architects are prepared to give us something better whenever we are ready to receive it.

Marcus T. Reynolds.



FIG. 1.—AUBERGE DE TREIB.

Lake of Lucerne.

SWISS CHALET.*

II.

ONE of the finest examples of ch[^]alet with large pointed roof is furnished by the old Inn at Treib (Canton of Uri), a historic edifice on the bank of the Lake of the Four Cantons, at the Seelisberg station, opposite Brunnen. It dates from 1650 (Fig. 1). The photograph was taken in the Swiss village of the Geneva Exposition, where this inn was exactly reproduced. It is one of the most interesting and most picturesque of ch[^]alets, and it enables us to complete the knowledge of the wooden constructions which we derived from the Fischenthal and Stanz ch[^]alets.

The general appearance is extremely light and easily-read, the structure and decoration of the front indicating the internal divisions and the play and bearing of the joists. The situation itself of the inn is charming. The front overhangs the lake and is built on piles, while the body of the house rests on terra firma. The roof, covered with thatch-planks, rises with a steep slope. It is, in fact, the Fis-

*See Architectural Record, Vol. VI., No. 4, for Part I. of this article.
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chenthal system of protection against rain, and the projecting eaves shelter the front. Note should also be taken of the useful part played by those large brackets upholding the projecting part of the roof, and of the ornate pendentives which terminate them. The architects of these wooden edifices never fail to extract a decorative effect from the indispensable elements of the building. As we have already remarked, instead of seeking to minimize the external part held by the framework of the building they have in every instance emphasized it and given it the greatest possible development, so as to produce a decorative effect. Note, in this connection, the dormer window in the roof. It is in itself a complete piece of architecture. The shape of its covering suggests the entire roof. It, too, has its brackets, and pendentives, and thus, out of a necessary opening in the roof, the ch[^]alet architect has had the skill to make an important element of architectural decoration. Hereby wood architecture teaches a useful lesson which her elder sister (or offspring, for is not all architecture descended from wood?), stone architecture, and her younger sister, iron architecture, too often forget.

The Auberge de Treib further interests us from the double point of view of its decoration and its sheltered front. We have already referred to the beautiful ornamentations in carved wood which are so appropriate to wooden edifices. Here, too, the window-frames are in finely carved wood; but we find, in addition, the application of decorative painting to the fa[^]ade. The bands surrounding the windows and the panels below, comprised in these bands, are painted in wide stripes of yellow and black alternately, the national colors of the Canton of Uri. This has been done with a truly intelligent conception of decoration. The whole front is not painted. The vertical beams, which project and intersect each other at the angles, as well as the boards on the wall, are left bare, only the bands enframing the windows and panels, and the panels themselves, being painted. The radiating black and yellow stripes give life to the front, and the whole arrangement is highly effective. This is very different from the fronts of wooden houses in the United States, with their flat, uniform tint. In this case again it is the natural tone of the wood which predominates.

The system of protecting the front is also interesting in wooden constructions, and the Auberge de Treib furnishes an excellent example. At every story a penthouse, resting on small brackets, runs along the front above the windows, the horizontal framework of the ch[^]alet and the upper part of the windows being thus protected from the rain. These penthouses not only shelter but are decorative as well, as they accentuate the division of the building into stories. This arrangement is very common in ch[^]alet construction in Switzerland, and we shall come across more than one example of it in the course

of this study. It is not merely fancy that has led architects to introduce this important feature into chalet-building; they have been brought to it by logical necessities, by the climate, and by the material chosen for the construction. They were using wood, and that in a country where rain falls frequently; consequently, the first thing to do was to arrange the edifice in such a manner that it should suffer as little as possible from bad weather by finding means to prevent the rain from reaching and damaging the foundations. Hence the great outward extension of the roofs over the fronts, the penthouses above the windows, and the almost excessive prolongation of the



FIG. 2.—WINDOWS WITH PENTHOUSES.

roof-line beyond the lateral walls, the roof sometimes reaching, as we shall see, to within a few feet of the ground, where it is upheld by posts. Hence also a number of excellent arrangements, examples of which will be found in the chalets described below. For instance, the balconies or galleries are always on the upper story of the chalet, where they enjoy the shelter of the roof, and the stairs and sometimes the galleries also are placed outside the house, where the projecting eaves cover them entirely.* We have a variety of protective measures intelligently combined for the purpose of ren-

*See the fine Chalet at Stanz (Fig. 3) as to the position of the stairs and galleries.

dering the chalet as durable and healthy as possible. Necessity has created this system, and the builder's art has managed to obtain the happiest architectural effects from it.

In Fig. 2 we give a series of windows protected by small penthouses, which form a continuation of what we have said relative to the protective system, and, earlier, as to the decorative part held by the window in wood construction. These models, which are taken from Varin's work, already cited, are extremely pleasing, and their composition is excellent. Architects will be able to find inspiration in them. For country houses they afford an element of variety and picturesqueness which should not be ignored.

* * * * *

Let us now pass on to the important class of chalets with flat roofs. In the Fischenthal, Stanz and Treib chalets we have had three remarkable types of large, steep-roofed chalets, and the illustrations convey a clear idea of the beauty of that system, both from a picturesque and an architectural point of view. The ascending lines of the roof give great elegance to the edifice, and, besides, for climates where rain, rather than snow, is to be feared, the said type is logical and thoroughly rational. But in many parts of Switzerland—in most parts, in fact—the winter brings snow and rain, and this has caused a modification in the principles of construction. Instead of seeking to get rid of the snow and prevent it from accumulating on the roof, every effort is made to keep it there; it is wanted to collect and form a thick blanket, protecting the house from the intense cold of the winter nights. The line of the roof is, therefore, lowered and brought nearer the horizontal (see the Berlingen Chalet). There is evidently a loss in picturesqueness, but there is a gain in protection, and also, as we shall see later on, in convenience of internal arrangement. In any case it is a new and very interesting system. Often beams are placed perpendicularly to the front in order to retain the snow and prevent it from sliding.

In chalets of this type the exterior decoration is very elaborate. The fronts have rich friezes in bold relief, whose decorative character offers the greatest interest. We may take, for instance, the Auberge de la Croix Blanche, at Montbovon (Canton of Friburg), which is a good example. Along each story there runs a frieze formed of a regular series of little arcades, reminding one of the Lombard bands which so often figure in Romanesque and pre-Romanesque art. These accentuate the interior division of the house. It should be noticed here—and succeeding illustrations add to these examples—how completely the decorative spirit of chalet builders has held itself aloof from the progressive movement of architectural decoration in stone construction. Those neo-classic ornaments which were then the only ones admitted in stone architecture, are met with simply as

exceptions. The châlet-builders have just followed the ancient lines which they knew and liked; they have continued the immemorial traditions of their ancestors, and have delighted in the ornaments which found favor in the sight of their predecessors of the Middle Ages. Thus have they kept alive in their little corner of the world some portion of that which constituted the admirable essence of the

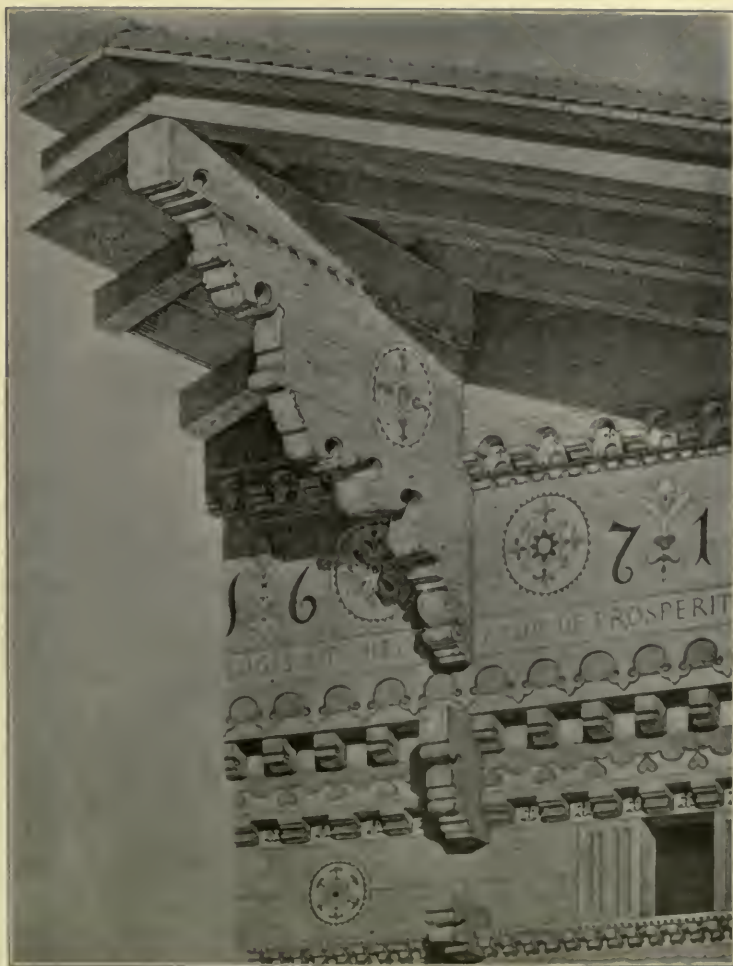


FIG. 3.—DETAIL OF CHALET AT LA FORCLAZ, VALAIS.

art of the said period, and their painted and carved fronts tell us better than political history can do what those inhabitants of Switzerland were and what kind of life was theirs. It is in Romanesque art—in our French cathedrals—that we shall find the prototypes of the friezes on Swiss châteaux of the seventeenth and eighteenth centuries.

Furthermore—and this is a point on which we must insist—these façades present in most cases a double decoration; the carving is reinforced by painting. It is interesting to see how, as in the Middle Ages and the ancient Grecian, the decoration is incorporated with the architecture and is not a thing apart. Viollet-le-Duc, speaking of the role of architectural painting, says: “The painting, which is essentially a part of the architecture, is subject to the lines, forms and design of the structure. . . . It was only at the Renaissance that the painting became a separate thing from the architecture.” It is evident that, for the painting which we see on Swiss châteaux, the Renaissance had no existence. It accentuates the reliefs of the friezes, adds force to the shadows and brightens the light parts. In the plane and empty spaces of the front, and on the flat sides of the consoles, it expands in beautiful roses and daisies, of a highly decorative character. Roses have been the favorite ornament of châteaux-builders. One finds them again and again (see illustration further on). They are certainly of Eastern origin. Finally, to complete the front and give it full importance, a dedication or a citation from the Bible is engraved on it, calling down the heavenly blessing on the dwelling. Nothing could be more serious than these large inscriptions running from story to story, in simple, unaffected language.

Fig. 3 shows part of a front and the central beam of a châteaux at La Forclaz, Valais, with the date and a portion of the inscription. Here one can grasp more clearly the character of the carved and painted ornamentation. It is a fine example of its kind. The bracket supporting the principal beam is also of excellent style and one of the best models of carved wood. This châteaux dates from 1671 and belonged to Jean Tille. We borrow our illustration from the justly-esteemed work by Gladbach, “Holzbauten der Schweiz.” In this châteaux, as in that of Croix Blanche, which dates from 1725, note should be taken of the extension of the beams over the front. This is one of the characteristic features of wood construction. Lastly, before finishing with Montbovon, we will recall what we have already said in regard to the windows and their grouping, so ingenious and symmetrical, in the façade.

The next châteaux, which is very near to the Auberge de la Croix Blanche in its architecture and decoration, also comes from Montbovon, where it was purchased by the authorities of the Geneva Exhibition. It dates from 1668, and is therefore half a century older than the other. Fig. 4 affords a general view of it as reconstructed in the “Swiss Village.” The little châteaux which is seen beside it is the oldest of all those figuring at the exhibition (Châteaux de Broc). It was built in the year 1590. This is one of those small châteaux of the village of Gruyère in which the cowherds store their utensils. This châteaux also was bought for the exhibition. There we may get an-



FIG. 4.—CHALET AT MONTBOVON.

other view of the façade of this same chalet at Montbovon which enables us to better understand its structure and decoration—the plank walls, the joints of the framework, the arrangement of the windows, the far-projecting eaves, and, above all, the relief of the carved decoration, the character of the painted decoration and rosework, and, finally, the carving of the large consoles which support the roof. All these features explain themselves and do not call for any comment. The visitor will also remark the very graceful arrangement of flowers placed upon shelves on the second story of the front.

The Chalet of Iseltwaldt (Fig. 5), which stands on the border of Lake Brienz (Berne), belongs to the type most frequently seen, and which has been popularized by the wood-carvers of the Oberland. It is certainly less elegant than that of Fischenthal, but it has the merit of presenting in a clearly-defined manner the characteristics of the flat-roof chalet. The two galleries are on the second story, at either side, under the shelter of the roof. The stairs on the front is a feature met with less often. The roof is covered-in with shingles, and the chimney is stunted. From an architectural point of view, note should be taken of the lengthening of the principal brackets, which start from the bottom of the front. This extension, the effect of which is very happy, is produced by the projection of the corner and middle beams, as will be seen from the next figure (No. 8), which gives a side view of the same chalet. The composition of the windows here is, as usual, very pleasing. In the side view the system of crossing the corner beams is clearly apparent, and we are also better able to judge of the carved decoration, which in this case is particularly rich and elaborate. The side view further enables us to form an opinion as to the relief of the decoration and as to the ribs of the façade. Everything is in excellent proportion. One great merit of wood architecture is that it is never afraid of high relief; an ornament is never flat or timid; everything, on the contrary, is of suitable strength for the play of bright parts and deep shadows. The ground floor of this chalet is in stone. The foundations and sub-basements of chalets are nearly always in stone, but the stonework does not often rise high enough to form a story. A chalet at Champéry, in Valais (Fig. 23), presents, however, the same peculiarity. As to its other features, this edifice resembles the Iseltwaldt Chalet in structure, but is distinct therefrom in the character of its ornamentation. The small columns in the balconies are of turned wood, a circumstance sufficiently rare to deserve mention. Notice will doubtless be taken of the position of the large balcony, viz.: on the upper floor, where it is sheltered by the eaves.

We may notice, although it is not connected with this class, a chalet at Saanen, Canton of Berne, whose steep roof, with canted gable-end, projects to an enormous extent. The chimney is mon-



FIG. 5.—CHALET AT ISELT WALDT.

umental, and is covered by two movable boards which are raised and lowered according to the direction of the wind. This fine chimney is to be coupled, from an architectural point of view, with the large dormer windows of *Trieb* and *Stanz*.

Such are the two classes of buildings presented by wood architecture in Switzerland. The types we have given exemplify all their important elements, both from an architectural and a decorative standpoint. Everything we have examined fully justifies itself from a historical point of view. From a practical point of view the utility is less direct—we mean that, while the finer Swiss *châlets* supply us with excellent models of decoration of picturesque fronts and elegant roofs, there cannot be any question of our copying exactly either *Fischenthal* or *Treib*. The comfort-loving people of the nineteenth century would not be at ease in the rather confined limits of a Swiss *châlet* of the seventeenth or eighteenth century. However, the lesson taught by these *châlets* is all the higher for being of less direct use. They show us how the carpenter-architects extracted, with great logical force, their entire system from the character and qualities of the material they employed. Their architecture is real and not borrowed; it does not come from elsewhere. This is a fundamental quality in architecture.

Before broaching the entirely modern part of our subject and giving some *châlets* of the present day, which, while comfortable and adapted to our needs, remain true to the old spirit of wood architecture, we desire to mention a few types of small, light constructions which are capable of being at once utilized for our purposes, either as a pavilion in a park, a gatekeeper's lodge at the entrance of a large estate, a hunting lodge, or a gamekeeper's house. We shall then give a model of a mountain residence, built as far back as 1754, and shall show the wood architect's conception of a farm house. After that we shall pass on to the interior of some *châlets* and see what is to be learned there that will be useful for our modern dwelling houses, and the good or bad points of that kind of building. This examination of modern effort in wood architecture will show us what use has been made of the teachings of the past, and in what direction should tend our endeavors to perpetuate the charming art of *châlet* building.

Let us take, in the first place, notice of a little *châlet*, which is a gem of elegant construction and decoration. It is an original specimen of a *châlet* at *Brienz-Wiler*, in the *Berne Oberland*. Just as it is, it would make an extremely picturesque porter's lodge at the gate of a country place in a hilly district. The balustrades, carved in openwork, and the friezes along the front and around the windows, are in the purest possible taste. This *châlet* was transported bodily from *Brienz-Wiler* to the Geneva Exposition. The actual dimensions



FIG. 6.—CHALET AT MARPACH.

might be adhered to; in fact, this is a somewhat important point, as Swiss châteaux would suffer greatly by being reproduced on a larger scale, so complete is the harmony between their dimensions, their structure and their decoration. But the small houses here shown can answer certain purposes without undergoing any modification.

The châteaux illustrated in Fig. 6 is situated at Marpach, Canton of Berne. It is an original and charming model. The upper story is larger than the ground floor, exceeding the latter considerably on both sides. The front thus offers a very curious appearance, the charm of which is heightened by the immense circular opening, which pierces the covered gallery and gives light to the chamber. The cant on the end of the sharp gable shelters the gallery, and a penthouse protects the windows of the ground floor.

A châteaux at Langnau, Canton of Berne (Fig. 7), furnishes again



FIG. 7.—CHALET AT LANGNAU.

another example of the vivacity and elegance of architectonic forms in wood construction. Upon a rather confined ground-floor which can scarcely be used for any other purpose but the storage of fruit, cheese, etc., stands a larger first story resting in the simplest manner on the big transversal beams of the ground-floor prolonged on each side of the house. Then there is a gallery running round the edifice, with large carved gallery supports upholding semi-circular arches. On the upper story another gallery, with a deliciously carved balustrade, takes shelter under an enormous roof with a cant, the eaves being sustained by heavy consoles. It is charming to see to what good account the ingenious decorator has turned such an original structure, how he has united the first story and the ground floor by a carved ornament, and how cleverly he has conceived the arches of the gallery and the balustrade near the roof.

We repeat that the three models just presented and which are all exquisitely graceful, appear to us susceptible of being utilized for country places as pavilions or porter's lodges.

With the large *châlet* at Rossinières (Vaud), shown in Fig. 8, we enter into a different domain. The *châlets* hitherto shown have been of middle size and scarcely capable of containing more than a single family. Here, on the contrary, is a *châlet* of such ample dimensions that it might serve as an hotel. It dates from 1754, and a long inscription of seven lines which runs along the front informs us for whom it was built, and calls down God's blessing on the founder and on its subsequent inmates. The *façade* offers the same series of little arches already familiar to us, painted ornaments, the owner's arms, and animals, such as stags, lions, and so forth. The large roof-brackets also extend downward to the first floor. We again see here, applied on a large scale, the fundamental principles of wood architecture. It is of the high, pointed roof type. Here, too, the gable has a cant, in order to avoid the acute angle. The ascending lines of the roof are fine and the house really seems to be sheltering itself under its enormous covering. But with this system of roof, descending on each side almost to the earth, the lateral faces of the houses are sacrificed; everything is in the front, whereas in the flat-roofed *châlets* the more horizontal roof-lines admit of side windows on the first floor and a gallery, covered by the roof, on the second story. (See the Iseltwaldt *Châlet*, Fig. 5.) We shall find, however, how well the builders have managed to take advantage of this situation and what a practical sort of edifice they have evolved out of the steep-roofed *châlet*. In the example before us they have left the *façade* for the dwelling rooms; it can be carved and painted, and it is there that the tenant and his family live. At the side, the architects have seen that the overhanging roof might be utilized to shelter tools, carts, ladders, plows and other farm implements. It forms an excel-



FIG. 8.—CHALET AT ROSSINIÈRES.



FIG. 9.—FARMHOUSE.

lent storing-place, and we thus come to the type of farm-châlet, of which Fig. 9 is a specimen. It is a Bernese châlet, with high roof and canted gable, the gallery being protected in a curious manner by a large arch. The overhanging part of the roof is boarded-in, so that the gallery is completely sheltered. On the front are the windows of the dwelling apartments, and at the rear the farm buildings, properly so called. The loft formed by the elevation of the roof serves for storing fodder. This châlet is evidently the abode of a well-to-do farmer, but what should be specially noted is how, while having a dwelling that is practical and suited to the requirements of his kind of life, he has at the same time a house possessing style, individuality and harmony. All this he has got without trouble by faithfully following a national tradition, by continuing a style which he knew, by applying without great efforts the principles proper to the material chosen by him, the fundamental rules of wood construction; and in this way he has obtained something that is architectonically satisfactory. This type is very frequent in wood architecture in Switzerland.

We also give views of two other Bernese farms (Figs. 10 and 11) of similar type. They are more rustic, their decoration is less elaborate, but their principal lines are interesting. The roofs are of the same kind as those just examined.

THE INTERIOR.

It is certain that we could not accommodate ourselves to the interior arrangements of Swiss châlets of former centuries. The rooms are small and low, varying from 6 feet 7 inches to 7 feet 6 inches in height, and the hygienic condition which we insist upon in modern houses are non-existent, for there is an absence of air and an insufficiency of light. The agriculturists, farmers, or cattle-breeders who inhabited them lived in the open air, in the fields or on the mountain pastures, and they therefore required less comfort and less hygiene than we do, as they were only at home during meal times and the hours of repose. In our different conditions of existence, we could never live in their dwellings. The smallness and lowness of the rooms spring from the intrinsic necessities of the building, the system of framework and planking. Still, while rejecting the idea of keeping the inside of the châlet just as it is, we can retain some of the essential principles.

First, the decoration in wood. We have a house built of wood; let us decorate the interior of that house with the same substance; let us use it for the ceilings, where, quite naturally, without anachronism, and without infringing good taste, the beams will be left visible; for the flooring, where one can obtain the richest effects; for the



FIG. 10.—FARM IN THE CANTON OF BERNE.



FIG. 11.—FARM IN THE CANTON OF BERNE.

staircases, rails and balustrades, of which we have so many fine models in carved wood; and finally, for the wainscoting. In this manner we can have a charming decoration which will be uniform without falling into monotony. As a matter of fact, the different kinds of wood allow a great variety of color in the principal tones of the rooms and in the arrangement of the panels. Fir, the tonality of which is very agreeable; larch, which is richer and takes an admirable patina, and pine, which is redder, can form the ground-work of the decoration, while oak, beech, walnut, birch, pitch-pine, etc., might each play a prominent part in producing any desired effect. It is also possible to arrange the different kinds of wood, so as to avoid monotony. Besides, wood lends itself to all kinds of work; it can be moulded, carved or fretworked with the greatest facility. Hence its immense field for decorative purposes. Lastly, as wood architecture makes use of painted decoration for the exterior, so does it utilize the same for the interior. We have seen painted friezes of leaves and fruit in the common room of the *châlet*, and we also see painting lending its aid to architecture by strengthening the cornices, ornamenting the mouldings and enhancing the reliefs on the walls and ceilings.

We give a view of a room on the ground floor of the Montbovon *Châlet* (Fig. 12), purchased for the Geneva Exhibition. It shows the effect of the painted decoration, which, however, is not first-rate in this example. But what is excellent in the Swiss *châlet*, is the place held by the various articles of furniture; they positively form a part of the room and its decoration; they are not intruders; they have not the appearance of having been dragged in without rhyme or reason, as is often the case with the furniture in our apartments. As a rule, the dresser forms part of the woodwork. We reproduce two models of dressers (Nos. 12 and 13), but they have been placed in rooms to which they did not originally belong. In the Historical Museum at Basle there are several sixteenth and seventeenth century rooms, where the truth of the above observations can be verified. The dressers here shown are interesting as samples of woodwork, although they bear visible traces of the influence of the German Renaissance. They are very practical pieces of furniture, with cupboards for bread, glassware, china, table services, and, besides, with a washstand. The brass ornaments are always in their proper places. The pitcher and basin are generally made of block-tin. The shape and ornamentation of these dressers are good, and they are one of the excellent creations of Swiss woodworkers.

In the room in the Stanz *Châlet* (Fig. 13) the woodwork only reaches to mid-height; a garland of fruit and foliage runs around the apartment under the cornice of the ceiling. The woodwork itself has received a painted decoration quite in the taste and spirit of wood



FIG. 12.—ROOM IN CHALET AT MONTBOVON.



FIG. 13.—ROOM SHOWING DRESSER IN STANZ CHALET.

architecture. The tables and chairs are in harmony with the room; they are inspired by the same decorative spirit that conceived the chalet and its ornamentation. This is no slight merit, and we ought to be the more sensible of it as we are so far from having a logical conception of the art of furnishing. We are crazy after bric-a-brac; the Middle Ages, the Renaissance; the Louis XV. and the Louis XVI. styles of furniture are mingled together in our houses with English, Japanese and other styles; the upholsterer and the archaeologist share equally the honor and profit of supplying us with furniture. Therefore, we are truly delighted to see a room having a unity and a soul, repeating, with variations, the external decoration of the house itself. Seeing the room, we can picture to ourselves the house, and vice-versa. The dressers are one with the wainscoting, of which they seem to be an extension. On their panels are the same ornaments that appear on the doors and other woodwork. Against the wall there is a breadsafe in carved wood, simple and ornate withal, like the whole chalet. The table, the chairs, the spinning-wheel near the stove—everything, in fact, declares a common origin and speaks of one life, one family, the continuity of one spirit and one taste. There is reason to fear that at the rate we are going, and accustomed as we are to flats, and especially hotels, with the unfortunate facilities they afford us of changing our surroundings every two or three years, if not every two or three months, we shall become indifferent to the charms of an abode which was that of our parents and grandparents before us, and where, after our time, our children in their turn will dwell. That is what the Swiss chalet has been, and for this reason it is regarded with affection.

Before concluding we have still to see, in the interior of the chalet, another of those happy achievements of wood architecture; we mean the effect from within of the groups of windows, whose value as an element in the decoration of the façade we have already mentioned. The examples given here show with what ingenuity and with what art the chalet builders conceived the window. We have called attention to double windows and three-twin windows, as well as to the frames enclosing them. We have spoken of the necessity of windows being low in wooden houses. From the inside, the effect of these groups of windows is equally pleasing. Generally, the inside frame corresponds to the external one. A frieze unites the windows that are near each other and makes a set of them. An example of this may be seen in the interior of the Stanz chalet. Very often, too, a seat extends from the wainscoting and is comprised in the frame of the group of windows. The room remains light, and the effect of the double or triple windows is as good from within as it is from the outside.

THE MODERN CHALET.

We desire now to mention a few points in connection with the wooden houses at present in course of construction in Switzerland. It should be observed, in the first place, that modern châteaux are built for a different class of people from those for whom they were

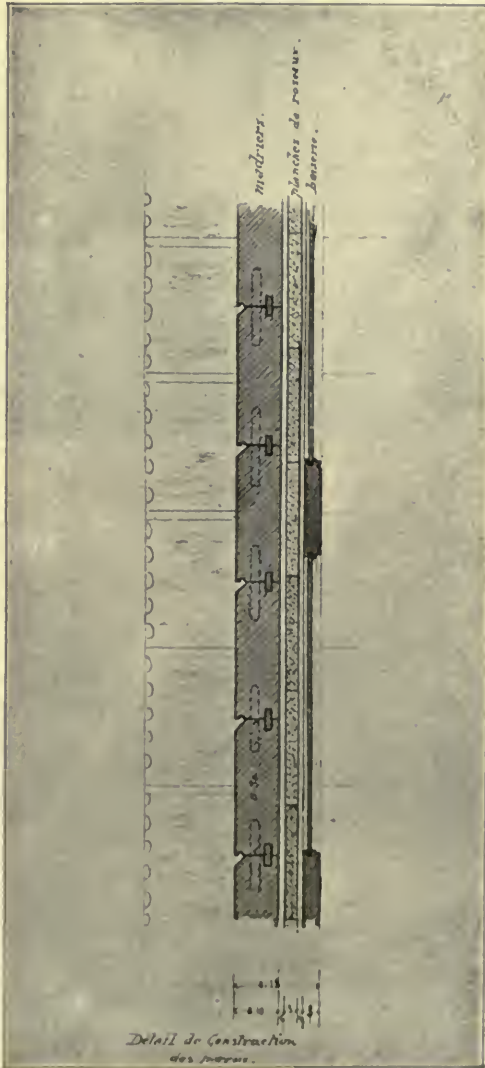


FIG. 14.—SECTION OF WALL OF A MODERN CHALET.

built in the past. Formerly they were erected for farmers and well-to-do country people. Nowadays they are country residences for the moneyed classes. They must be provided with more comfort and refinement; the rooms must be larger and higher, and the sur-



FIG. 15.—CHALET, LAKE GENEVA.

roundings better adapted to the exigencies of modern life. The models we have examined need to be transformed, but these modifications are not fundamental and do not affect the principles which have been applied by *châlet* architects in such charming ways. To-day, as in former times, wooden houses, to be architectural, must conform to the old conditions; architects ought to remain faithful, not to the letter, but to the spirit of wood architecture.

The later-day *châlet* is built entirely of wood, only the foundations being of stone. Fig. 14 is a section of wall of a modern *châlet*. The exterior part is formed of *madriers*, 4 inches thick, the inside face of which can be covered with thick building paper. At an interval of 1-3 inch there is a bed of reed-planks, formed of reeds, tied together and joined with plaster. This is an excellent non-conductor. It is 1 inch thick. This, too, can be lined with a layer of building paper. Lastly comes the interior wainscoting, 1 inch thick. This makes a total thickness for the whole wall of about 7 inches, which has been proved to be amply sufficient. The wood employed is fir, treated with refined linseed oil. Fir has the great advantage of cheapness, and is strong and elastic. It is somewhat light in tone at first, but darkens rapidly and takes a rich harmonious patina.

A *châlet* near Geneva, built in 1893 by Mr. Edmond Fatio (to whose kindness we are indebted for some of the plans and details used for this study), retains in its main features the silhouette of the

summer residence. The total cost of building such a ch[^]alet, including plumbing, heating arrangements, complete internal decoration in wainscoting, is 60,000 francs, or \$12,000. The ch[^]alet measures 50 feet by 45 feet. The prices of the wood are as follows:

Outside walling of madriers, 3 inches thick, 13 francs per square meter; the large carved brackets, 15 francs each; the fine carved decorations, 2 francs per running meter; the large beams, carved in little arcades or otherwise, 3.25 francs per running meter.

The carpenters of the present day are exceedingly skillful, and turn out carved decorations of a very fine character. There is, therefore, no reason why the exterior of modern ch[^]alets should not be as ornate



FIG. 17.—HALL IN CHALET.

as that of old ones, unless it be the cost, and as to that it should be observed that 2 francs, or 3.25 francs, per running meter for the decoration of a house-front is not a very excessive price.

Another of the same architect's productions, situated at Rolle, on the bank of the Lake of Geneva (Fig. 18), presents a more picturesque arrangement. The decoration is more elaborate, the relief sharper; the consoles are of more ample proportions and they sustain a great outward extension of roof. The general aspect offers a certain variety, and does not present that symmetry of outline which architects are too prone to strive after. We have seen that wood

architecture in its best manifestations never hesitates to sacrifice symmetry to picturesqueness. The ingenious arrangement of the interior is also noteworthy. On the lateral front, shown in the photograph, the architect has retained the type of little windows, so charming in the old châteaux. There is a group of four on the ground floor, protected by a penthouse. On the first story there are two which project and two in the plain wall. These eight small windows give light to a large hall two stories in height. Fig. 26 gives a view of it; but it should be mentioned that the photograph has been taken too close and fails to give an idea of the real size of the apartment, which is 9.80 meters long by 6.50 meters wide, with a height of



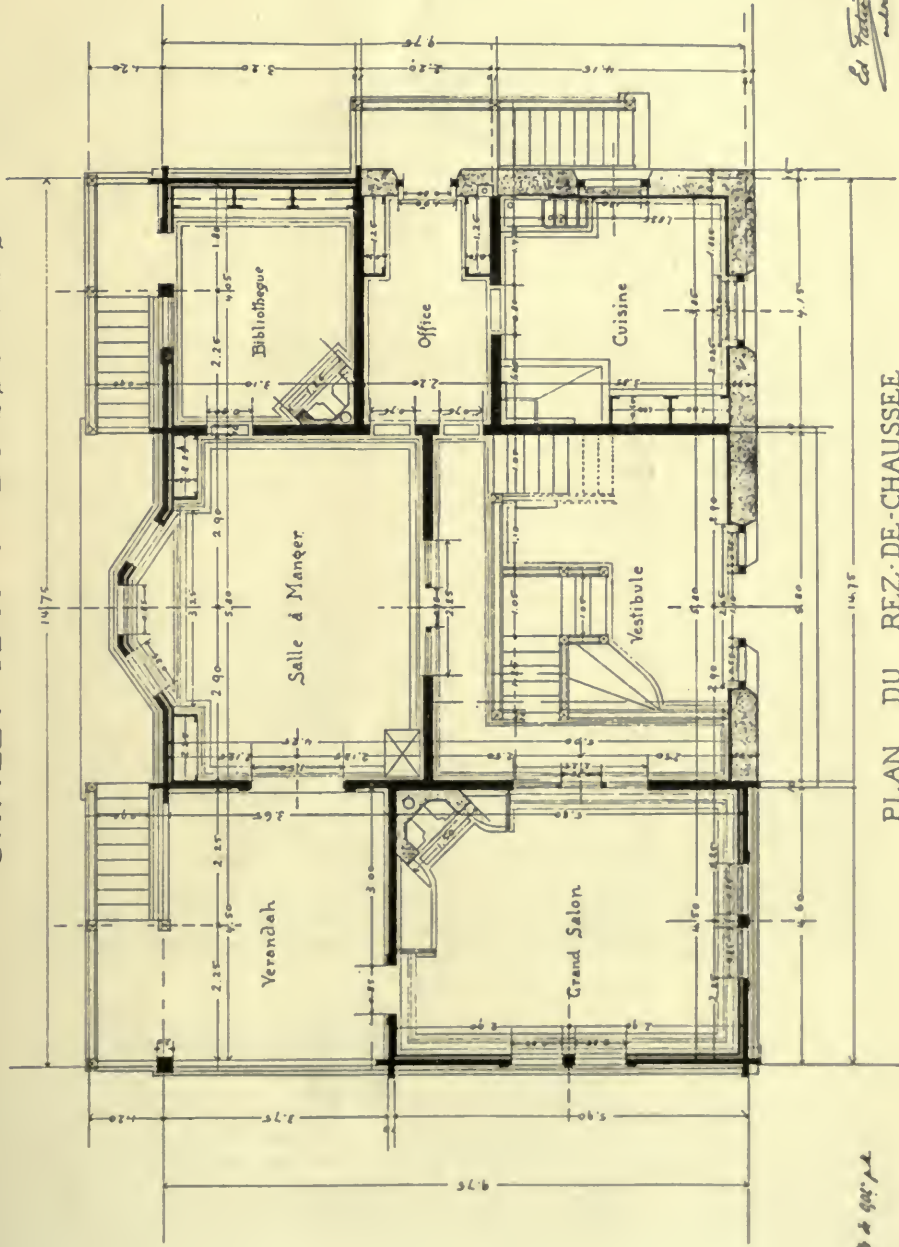
FIG. 18.—CHALET DE ROLLE.

5.90 meters. A staircase leads to a smoking gallery, which is as wide as the hall and 3.10 meters in length. The lighting, by means of little windows, is very successful. This is one of the difficult points in connection with châteaux building. The delicious old models are very cramped in the matter of dimensions, and modern owners ask for big windows, giving an abundance of light.

The plan of this large châteaux will be interesting (Fig. 19). As will be seen, the total dimensions are 21.75 meters of frontage by 11.85 of depth. The total cost of construction, including all the interior decoration in various kinds of wood, is 80,000 francs.

We reproduce also the plan of another châteaux, which is in course of

CHALET DE M^r FI BOISSONNAS



Ed. Fattet
architecte

PLAN DU REZ-DE-CHAUSSEE

FIG. 20.

Exhib. de 904 p. 2



FIG. 21.—FACADE OF CHALET.

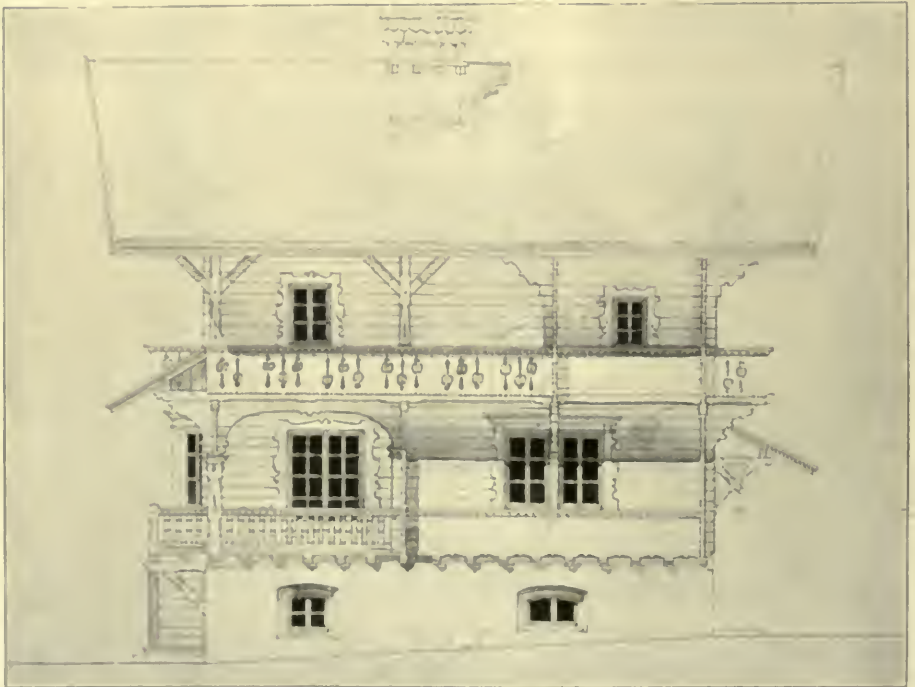


FIG. 21A.—SIDE ELEVATION.

erection, the architect in this case again being M. Edmond Fatio (Fig. 20). It is smaller, but its proportions seem to us particularly good. The plan is simple and easily-read. The architect has made use of the dining-room bow-window to embellish the façade. At the corner there is a verandah. A large penthouse protects the ground floor. The view of the south façade (Fig. 21) shows the extension of the penthouse, the gallery and the roof. This little *châlet* certainly presents a most harmonious appearance. Its cost, entirely finished, amounts to 45,000 francs.

We do not know of any modern attempt to build a high-roof *châlet*, and we regret this, for the elegance and picturesqueness of roofs like those of the Fischenthal, Stanz and Treib *châlets* deserve



FIG. 22.—VIEW OF INTERIOR OF MODERN CHALET.

to be revived in contemporary edifices. No doubt, as regards the arrangement of the rooms, the flat-roof system is far more convenient. If the roof rises and its lines become more perpendicular, it is necessary to add a story on the front, which is lost at the sides. Still, the thing is possible, and the old *châlets* supply excellent models of large dormer windows that might be utilized for the bedrooms on the side of the house. It should be remembered, too, that in our temperate climate and at moderate altitudes, say up to 2,000 feet, the high-roof *châlet*, designed for rain, is the most logical and the most elegant.

From the foregoing, a fair idea can be formed of what is actually



FIG. 23.—CHALET AT CHAMPERY.

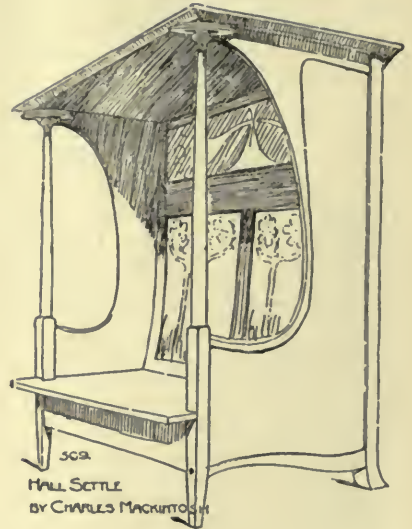
being done in wood architecture in Switzerland, where it had such a fruitful and splendid past. Differences in social life have necessitated the appropriation, by a new class, of models which formerly belonged to the farming and well-to-do peasant class. In the present day the rich middle-class build chalets for their summer residences. In spite of all the transformations necessary in old chalets to meet modern tastes and requirements, we think it results from this examination that it is, nevertheless, in the types furnished by the past that wood architecture must seek inspiration and guidance, and that an attentive study of the models here gathered together cannot fail to be truthful in teachings. Wood architecture, as manifested in Switzerland in the sixteenth, seventeenth and eighteenth centuries, has the incomparable merit of being a system which defies translation into another material without losing all its grace and beauty—a system perfect in cohesion and logic, and based entirely upon an exact understanding of the properties and qualities of the substance employed, namely, wood.

Jean Schopfer.

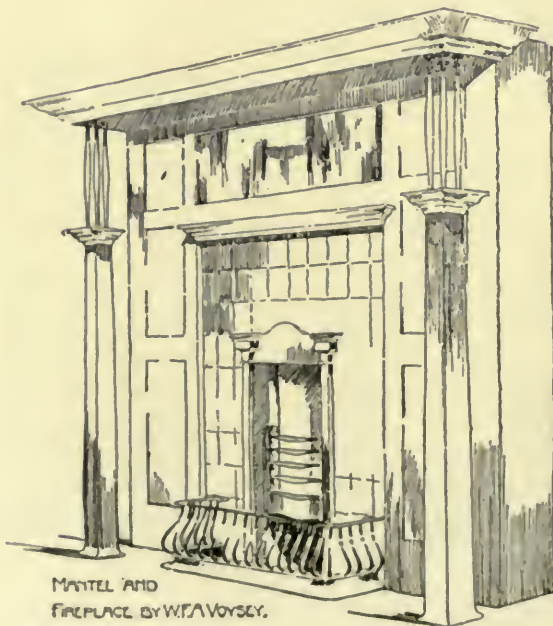


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ARMCHAIR
BY
A. WICKHAM
JARVIS.

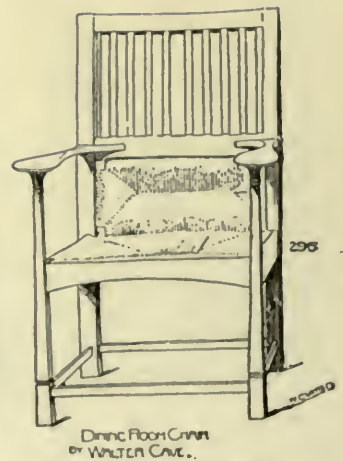
WICKHAM DEL.



303
HALL SETTLE
BY CHARLES MACKINTOSH



MANTEL AND
FIREPLACE BY W.F.A. VOYSEY.



Dining Room Chair
BY WALTER CRUIK.

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EXAMPLES OF FURNITURE IN THE "ARTS AND CRAFTS EXHIBITION," LONDON.

(From The Builder, London.)

A DISCOVERY OF THE ENTASIS IN MEDIAEVAL ITALIAN ARCHITECTURE.*

I.

AMONG the architectural refinements of Greek antiquity there is no one feature as universally recognized and as widely known as that of the columnar "entasis"—the swelling or outward curving profile of the column. According to the Century Dictionary, "The entasis is designed both to counteract the optical illusion which would cause the profile of the shafts to appear curved inwards, if they were bounded by straight lines, and to give the effect of life and elasticity to the column in its function of supporting superimposed weight."

As distinct from the horizontal curves of Greek architecture, which are commonly supposed not to have been employed by the Roman builders, the entasis of the column is generally found in Roman constructions, and it frequently appears in the engaged columns used as wall decorations as well as in actual porticos.

In Renaissance architecture once more, to which the horizontal curves are supposed to be absolutely unknown, the columnar entasis is of well-known and constant occurrence. It is even employed by Palladio in wall pilasters as distinct from engaged columns, a use which is supposed not to have been made by the Romans and which has consequently somewhat astonished modern architects; the presumption being that so devoted an apostle of Roman art as Palladio was would not have acted without a Roman precedent (Figs. 15, 16).

In view of the wide use of the entasis in the Roman monuments and in Renaissance buildings of the fifteenth, sixteenth and seventeenth centuries, it is a significant and startling fact that the entasis of the Greek columns at Athens and of other original Greek architectural monuments was not observed by modern architects or modern archaeologists until the year 1810. Knowing as we do that Roman art is borrowed Greek in all its decorations and in all its refinements, it seems utterly incredible that Stuart and Revett, who began their survey of the Parthenon in 1753, should have overlooked this best known of all classic architectural refinements—utterly incredible that the followers and successors of Stuart and Revett down to 1810 should have failed to notice it. This is, however, the bare and simple fact.

* All photographs used in illustration of this article, excepting Figs. 1, 5, 15, 16, 17, were made by Mr. John W. McKeekle for the Brooklyn Institute Survey.

According to Penrose* the entasis of the Greek columns was first noticed by Cockerell in 1810. According to Mr. A. H. Middleton** 1814 was the date and Allason the original discoverer, who was then followed by Cockerell. It would appear that the first accurate measurements of the Greek entasis were carried out by Joseph Hoffer as late as 1837 or 1838,*** and it is a matter of general information that the systematic and comprehensive knowledge of the Greek entasis dates from the measurements of Penrose made in 1845-46 and from his publication of 1851.*

For the purposes of our own publications the inferences are evident. The mere fact that mediaeval architectural refinements have been hitherto overlooked by modern investigators does not in the least imply that they do not exist.

As far as explanations of the modern oversight of the Greek entasis are concerned it should be noted that no attention was paid to the original Greek monuments until after 1750, about which time began the Greek Revival, headed by John Winckelmann. It is significant for the wholly recent date of interest in Greek art (as distinct from Roman) that as late as the opening of the nineteenth century the British Government, acting on the advice of an expert commission, refused to purchase the Elgin Marbles, and that they were secluded in London for fourteen years, without other recognition than that which was given them by the painter Haydon. During all this time they were supposed to be "poor Roman copy-work of the time of Hadrian."

If, then, we wish to establish a precedent for the modern oversight of the mediaeval entasis, it is easily obtained by reflecting that the incipient stages of modern interest in mediaeval art are seventy-five years later than the same stages of interest in Greek art. The revival of historic, literary and artistic interest in the Middle Ages began about 1820, or 1825, and before this date the mediaeval monuments had been utterly neglected and despised since the middle of the sixteenth century. Mediaeval style and taste were repudiated in Italy more than a century earlier.

When a cultivated Englishman of Charles the Second's time writes down his impressions of French cathedrals, two words are sufficient to express them—"only Gothic." This is what we find in Evelyn's Diary. The organ of refined English society at the opening of the eighteenth century quotes the Gothic cathedrals as well-recognized types of abnormal ugliness. This is what we find in Addison's Spectator. It is well-known that the re-discoverer of the Middle Ages was the German poet Goethe, and that his Essay on

* Principles of Athenian Architecture.

** Dictionary of Architecture, under "Entasis."

*** Wiener Bauzeitung, 1838.



FIG. 2.—VIEW LOOKING ACROSS THE NAVE OF THE PISA CATHEDRAL FROM AN AISLE OF THE NORTH TRANSEPT.

Showing the rear of the pier whose pilaster entasis is seen in Fig. 8, and ancient columns from Sicily, also having the entasis. For the leaning column on the right see text at p. 82.

the Strassburg Cathedral was the first modern proclamation of the beauties of mediaeval architecture (about 1773). But this same Goethe, who had time in Padua to inspect and buy editions of Palladio, did not visit the Arena Chapel (1786). Goethe, who left his diligence and made a detour on foot to inspect the Temple of Minerva at Assisi, never saw the Church of St. Francis (1786). This was the current attitude toward mediaeval art in the later eighteenth century, and Goethe himself, its first real apostle, did not rise to its comprehension in general until a later date, when he became the founder of the "Romantic School," of Germany, from which the Gothic Revival of 1820-25 must be dated for the rest of Europe.

If, then, the Greek Revival, dating from 1750, reached a recognition of the best known of all Greek refinements, the entasis, in 1810, we may more easily understand why the Mediaeval Revival, dating from 1825, is groping toward a recognition of the use of mediaeval architectural refinements in 1897.

II.

We come back once more, then, to the assertion that, in view of the well-known and widespread use of the entasis in Roman and Renaissance monuments, the oversight of the entasis in the original monuments of Greece, and during a time when they were being attentively studied, between 1753 and 1810, is a significant and a startling fact. One explanation is, no doubt, the one suggested by Mr. Penrose, viz., that the Greek entasis is more delicate and more easily overlooked than that found in Roman and Renaissance buildings. There may be another.

Just as modern men of a primitive culture have sharper senses of vision than the modern man of European civilization (the superior eyesight of the American Indian is a well-known instance), so it appears likely that the eyesight of the average man of modern civilization is inferior to that of the Greek, of the Roman, of the man of the Middle Ages, or of the Italian of the Renaissance. To the historian of painting no fact is so well known as the general decline in average color quality of the paintings of the seventeenth century as compared with those of the sixteenth century. This decline is again marked in the paintings of the eighteenth century as compared with those of the seventeenth century. The average paintings of the early nineteenth century are again inferior in color quality to those of the eighteenth century. The English neglect of Constable and the French neglect of Rousseau—men who had to die in order to become famous—are notorious instances of the want of color sense in the public and in the critics of the early nineteenth century. Goethe has remarked on the general want of strong color sense in modern

people of culture, and he suggests that the reason may lie in the weakness of their eyes.

It cannot be denied that there has been a general and continuous decline in the average color quality of pictures since the last quarter of the sixteenth century and down to the second quarter of the nineteenth century (since which time we have seen an improvement, due to the interest in Oriental color and in historic pictures). This decline must be due to a corresponding decline in color sense on the part of the public, of which the artists are a portion and to whose taste they must appeal for bread. Was there not a corresponding decline in sharpness of vision as regards the appreciation of form and outline? The architect is only a member of a community to whose taste he is subject, and whose general taste he reflects. It is a matter of general information that the architectural style of Michael Angelo (middle sixteenth century) is inferior to that of Bramante (late fifteenth and early sixteenth century), and that the style of Bernini (seventeenth



FIG. 3.—DETAIL OF FACADE, S. MICHELE, LUCCA:
The engaged mediæval columns have an entasis.

century), is inferior to that of Michael Angelo.* Here again we find the same falling off, for periods as a whole, which is true of their greatest representatives, and here again the explanation must lie ultimately in the taste and eyesight of the public.

It would not be difficult to prove that the diffusion of printed books, the gradual specializing of occupations, the division of labor, and the ultimate triumph of machinery over hand-work have tended to

* Although, roughly speaking, Michael Angelo was contemporary with Bramante, his architectural work begins from twenty to thirty years after Bramante's death, and represents a much colder and more formal stage of Renaissance design—the first stage of the decadence.

cripple certain faculties in civilized man. The brain has been developed at the expense of the eye and of the hand. What could be more striking proof of this than the recent effort to retrieve this loss by artificial manual training in schools, just as the tests for color blindness which are now in vogue are a testimony at once to the perfection of modern science and to the impotence of the modern eye?

If, then, it should be true that the oversight of the Greek entasis between 1753 and 1810 was due to a general constitutional deadening of the animal faculties in favor of an overwrought nervous and mental activity, to which modern civilized man has been undoubtedly subject, it would not be a surprising fact.

Such considerations lead us to understand at one and the same time the modern oversight of mediaeval architectural refinements and the superior artistic organism of the human beings who once enjoyed and devised them.

III.

The use of a columnar entasis in Italian mediaeval buildings in phases which are the exact counterparts or equivalents of those found in classic antiquity is to my present knowledge and observation a rare occurrence. It does, however, occur in some presumably very well-known churches, and the use of an entasis in the profile of mediaeval piers and pilasters on the side facing the nave is widespread in Northern Europe, as well as in Italy, although up to date the fact has not been recognized. It is wholly improbable (and this will have a very important bearing on the purposes of the Italian horizontal curves discussed in our last Paper) that any sentiment but that of beauty for its own sake, as distinct from a purpose of optical correction, could have inspired it.

This makes it all the more important to mention that an entasis in other forms than columns and piers was employed in the Middle Ages and possibly for purposes of optical correction.

The following facts are mentioned by the same Mr. A. H. Middleton, whose very generous notice of my own results at Nimes, in Egypt, and in Italy, appeared in the "Nineteenth Century" for March, 1897, and was republished in the "Scientific American" for April 24th. These facts are entered in an article on the "Entasis" contributed by Mr. Middleton to the "Dictionary of Architecture."*

The mediaeval architects also occasionally used an entasis. The round towers, excepting those of late date in Suffolk, have an entasis (*Builders' Journal*, XVI., 260), and a diminution and entasis are common features in the towers of Essex and Middlesex. The tower of All Saints' Church, Colchester, has an entasis, and diminishes from 22 feet to 19 feet, with internal offsets. This expedient was also employed, sometimes to excess, in

* Issued by the Architectural Publication Society.



FIG. 4.—A PIER IN THE CATHEDRAL OF FIESOLE.
Showing the entasis in profile.

spires and broaches, as may be seen in the spires to the west end of the cathedral at Lichfield. The spire of Gedling Church (Civil Engineers' Journal, VII., 47,105), about four miles from Nottingham, has an entasis which in its widest part is not less than two feet, and the spire at Newark, of about the same date, affords an instance of the curved line; but in most cases of mediæval spires the effect was not produced by a continuous curve, but by distinct lines. The fragment at the Church of St. Mary Redcliff at Bristol may be cited as showing two distinct lines, even in so small a part of the work: where the required form is given in three lines, the junctions generally occur at one-third and two-thirds of the height. One of the spires at Stamford has an outline formed by only two lines and one angle in the height. A rule for regulating the entasis in a spire is described by T. Turner (Builders' Journal, 1848, VI., 375).

To the above facts cited by Mr. Middleton we may add one which was verbally communicated a few weeks ago by Mr. George L. Heins, viz., that the square tower of San Zenone at Verona has an entasis.

It is probable that the facts mentioned by Mr. Middleton for England will prove to have other counterparts in Italy, although spires are practically unknown there, and that the facts will hold for spires and towers in all parts of Europe. As the facts stand, however, they are sufficient to suggest that optical corrections, as well as optical illusions, were studied by the builders of the Middle Ages. This point may be regarded as corroborative of facts which have been quoted in my own Papers, for it will be difficult to assert that a period could have had no knowledge of optical illusions which was able to design an optical correction for an optical illusion. The effect of concavity in the straight lines of a spire, in so far as it exists, would be due to an optical illusion of divergence in lines which meet at an acute angle. As the eye moves away from the angle the lines appear to diverge in an increasing degree. As for an illusion causing an appearance of concavity in towers it may come under one of the explanations suggested by Mr. Penrose for columns. It is, however, certainly conceivable that an entasis in a square tower like that of San Zenone is simply due to a preference for the "life" of the curving line. It seems possible that all explanations of the entasis, up to date, have laid too much stress on the purpose of optical correction, and that this is especially true for spires and towers.

IV.

The "Century Dictionary" has been referred to at the opening of this article for the explanation of the entasis of Greek columns generally to be found in modern authorities, viz., that it is partly a correction of an "optical illusion which would cause the profile of the shafts to appear curved inwards if they were bounded by straight lines," and that is partly designed to give an effect of "life and elasticity" to the column. In other words, it is universally admitted



FIG. 5.—SAN MINIATO, FLORENCE.

Showing an entasis in the profile of the engaged half-columns, facing the piers.

that the columnar entasis is partly due to an aesthetic preference for the curve as against the straight line. Mr. Fergusson, for instance, notes that the want of an entasis "gives that rigidity and poverty to the column which is observable in modern examples." The following quotation from Mr. Penrose also shows the same admission of an aesthetic preference for the curve as distinct from a purpose of optical correction: "The above reasons for an appearance of contraction and weakness in the central parts of the shaft, as well as the real monotony of a perfectly straight line, seem sufficient to have led the Greek architects to the use of an entasis."

As to the causes which tend to make a column appear thinner at the centre, they are more rarely discussed by the authorities, and the subject is treated by optical experts as one of some difficulty.

Mr. Penrose admits that the causes are not wholly clear, and considers his own explanation as tentative. It is, briefly stated, that the eye dwells longer at the base and top of the column than it does at the centre, and that the centre consequently appears weaker and thinner. Thiersch* rejects this explanation and gives an elaborate series of diagrams to show that the fundamental cause of the optical appearance of inward deflection lies in the diminution of the classic column. This diminution tends to exaggerate the effects of natural perspective (Fig. 1). Therefore the column appears taller than it

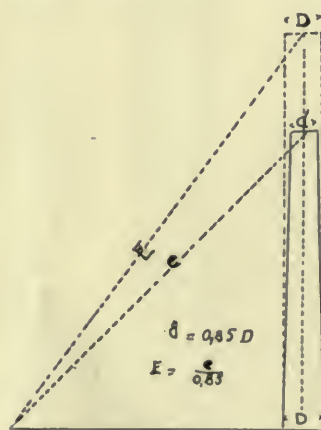


FIG. 1. Diagram from Thiersch, showing the apparent increase in height and consequently of upper diameter of a shaft, as due to the diminution.

really is. Therefore the top of the column appears wider than it really is. Therefore the eye in moving up the column moves from the foot, where the actual width is visible, in lines which tend to diverge outward from the upper actual width of the column. Hence an appearance of concavity, hence the optical correction.

Thiersch remarks in support of his contention that the cylindrical shafts and columns of mediaeval churches which have no diminution do not appear concave at the centre.

It appears that the effects of light which Mr. Penrose considers in his analysis of the appearance of a Greek portico, as tending to exaggerate dimensions at the foot and top of the column, do not come in play in a church interior. It may also be that the optical explanation of Thiersch has most value for points of view near the column,

*Optische Täuschungen auf dem Gebiete der Architectur, in the Zeitschrift für Bauwesen, 1873, p. 10.



FIG. 6.—NAVE OF THE PISA CATHEDRAL, FACING THE ENTRANCE.
Photographed from the top of the High Altar, showing an entasis in the profile of the
piasters facing the piers at the transept.

where the eye has to travel farthest in taking in its dimensions and where the diminution of the shaft gives greatest illusion of added height and consequently of increased upper width. It may be that the explanation of Penrose has greater value for points of view farther removed from the shaft, where the angle of vision more nearly includes the whole shaft. Finally it may be that both these experts give relatively too little consideration to the aesthetic feeling of the Greek architects—to that sentiment of beauty which is conceded to have had a share in the creation of the entasis and which they both concede to have a share in the satisfaction which the eye obtains from its results. It is at this point that our own observations of the hitherto neglected entasis in Italian mediaeval piers and pilasters begin to come in play.

V.

In the early Italian basilicas and in those numerous Italian Romanesque churches which continue, like the Cathedral of Pisa, to employ the columnar supports of the basilica, the entasis frequently appears, because the columns used were taken generally from Roman structures. These are not quotable cases of a mediaeval use of the entasis, but they offer a palpable and easy explanation of the source and origin of the mediaeval entasis.

In the matter of Italian mediaeval horizontal curves we have to contend with an unsolved problem, viz., how far the horizontal curves were used in late Roman buildings which have been destroyed, and in early Byzantine buildings which have been destroyed or which have not been examined for this appearance, but in the case of a mediaeval entasis we meet the obvious solution that the Italian mediaeval builders were surrounded by thousands of Roman examples, which were used again in their own constructions. Notice, for instance, in Fig. 2 of the Pisa Cathedral, the entasis of the columns on the left. The plumb-line hanging from the gallery enables us to recognize its very pronounced character. The entasis is also observable in all the columns of Figs. 10 and 12. If the mediaeval builders had not noticed these examples they would have been blinder than Stuart and Revett. If they had not copied them they would have been more inartistic than Bernini.

It is often difficult to distinguish mediaeval columns from the more numerous borrowed Roman ones. What might be revealed by minute investigations as to the number of really mediaeval columns (as distinct from piers or pilasters) which exhibit an entasis, it is impossible to say, but it is highly probable that the number of quotable cases is much larger than the list here given, for our survey in Italy devoted attention mainly to the entasis of the piers.



FIG. 7.—NAVE OF THE PISA CATHEDRAL AND THE NORTH GALLERY.
Showing the entasis in the profiles of the pilasters at the transept (also showing the bend in elevation of the north gallery).

The following cases of the columnar entasis are all distinctly mediaeval. It holds of the engaged columns in the main portal of S. Pietro at Toscanella and of the columns in the main portal of S. Giacomo at Florence, but these cases are so crude and corrupt (and the columns are so small) as to have little interest or significance. A much more important case is seen in Fig. 3, that of the engaged columns on the walls of S. Michele at Lucca (whose horizontal curves were specified and illustrated in our last Paper). Most of these columns have a very delicate entasis and they are undoubtedly mediaeval. This is attested by my own observation of the masonry; also by the consideration that the proportions are too slender for classic columns, as appears from the photograph.

Still more interesting examples are, however, those found in the profiles of piers in the Cathedral of Fiesole (Fig. 4) and in S. Miniato at Florence (Fig. 5)—more interesting, because the forms showing the entasis have the characteristics of the mediaeval pier and still have an obvious analogy with classic examples of the engaged column and of the ancient columnar form in general. The closeness of this relation is also suggested by the capitals, which are mediaeval Corinthian. The photograph of the entasis at Fiesole (Fig. 4) (repeated from the first article of this series) is a dull picture taken near dusk, and not very satisfactory. In the small dimensions of the reproduction it will require rather close attention to detect the curve, which is shown by the half-column seen in profile. It will best appear by sighting down the page with its bottom held near the eye. Our finest illustration of the mediaeval entasis is found in Fig. 5. This photograph was not made by our survey, but is reproduced from a picture loaned the "Architectural Record" by Mr. A. A. Hopkins, of the "Scientific American." The phenomenon appears in this picture accidentally. An illness of Mr. McKecknie in Florence made it impossible for our survey to take a photograph in S. Miniato. The facts were, however, noted on the spot by myself and my nephew, Mr. Nelson Goodyear.

The importance of the examples of the mediaeval entasis so far quoted is far-reaching. The use of this refinement in the given buildings is undeniable, and it is a refinement which has not, up to date, been credited to the mediaeval pier. In so far, then, we find a corroboration for the discovery of horizontal curves previously announced. The existence of either refinement strengthens the presumption in favor of the other. Moreover, this entasis is so unmistakably classic in origin that the contention in favor of considering the mediaeval horizontal curves as a classic survival is materially strengthened.



FIG. 8.—PISA CATHEDRAL NAVE.

Showing an entasis in the profile of the plaster at the transept. A plumb-line suspended from the gallery shows a forward curve of $3\frac{1}{4}$ inches deflection.

VI.

The peculiar use of the entasis at Fiesole and in S. Miniato is outside those explanations bearing on a purpose of optical correction which have thus far figured so conspicuously in the explanation of the classic columnar entasis. It is for this reason that in a preceding paragraph attention has been called to the supposed causes of an illusion to be corrected. No suggestions are conceivable here excepting those of an aesthetic character. If the entasis is beautiful when used by the Greeks it must be beautiful when used by the Middle Ages, and no optical expert has yet appeared to discover that there is an optical appearance of concavity in the piers and clerestory walls of a church which needs correction by a contrary convexity. If, then, aesthetic considerations were paramount in these certain cases, may they not have been paramount in the use of the mediaeval horizontal curves? The tendency to stress the theory of a purpose of optical correction for the horizontal curves of antiquity which is observable in Penrose and his followers, undoubtedly makes a belief in the purposed construction of mediaeval horizontal curves a difficult one, but if we assume in both cases that the horizontal curves were more a matter of feeling and of art than they were of optical science, this difficulty disappears. This assumption for mediaeval curves is certainly supported by the existence of a mediaeval entasis which cannot be ascribed to a purpose of correction.

But the most important phase of this topic has not yet been touched upon. It may be urged that the instances at Lucca, Fiesole and Florence are isolated cases—the results of local imitation—which have no wide bearing on the art of the Middle Ages as a whole, but there are others of which this cannot be said.

The instances shown at Fiesole and in S. Miniato merge into other instances of a vertical curve convex to the nave, which is a widespread phenomenon in the piers and pilasters of Romanesque and Gothic churches. The Pisa Cathedral offers a beautiful example of this entasis, and although the pilasters here in question depart widely from the forms of classic antiquity, the use of the curve corresponds exactly to that found in the examples already illustrated, in which these forms are more closely copied, and is clearly related to them. The use of the word entasis as applied to these curving pilasters is strictly within the interpretation and definition of the term as found in the Dictionary of Architecture, and in the article by Mr. Middleton from which quotation has been made. In this article the term is used to include all forms of the Greek curve—horizontal as well as vertical. The word entasis is derived from



FIG. 9.—PISA CATHEDRAL NAVE.

View looking from the south transept gallery into the north transept gallery; showing the masonry of the arch spanning the nave and of its piers.

εὑρεῖν and means a stretching or distention, hence any swelling or curving line.

Fig. 6 is a photograph taken from the top of the High Altar of the Pisa Cathedral. (From the standpoint of the photographer it is an interesting case of a picture looking through an open door, against the light, and without a halation. The path leading to the Baptistery and the Baptistery door are seen in the distance. Mr. McKecknie obtained the effect by opening the door after a long exposure was nearly completed and only a few seconds before its termination.) This photograph exhibits the graceful vertical curve of one pair of the pilasters of the great arches spanning the nave. The curves are convex to the nave, the pilasters lean out gradually and delicately from their bases, then straighten back to the perpendicular. Thus there is a delicate suggestion of a horseshoe bend toward the meeting of the pilasters with the lines of the arch. This beautiful curve is again varied by the cutting of the voussoirs, which give a higher pitch and a more pointed form to the upper side of the arch. This treatment of the arch in non-concentric curves is also found in the round arches of the Pisa Cathedral; see Fig. 11.

The general character of these curves is well shown by Fig. 7. This picture also shows the gallery bend in elevation, of which another view appeared in the last issue (Vol. VI., No. 4, Fig. 14). The surveys of this bend and of its opposite counterpart are given in Vol. VI., No. 3.

Fig. 8 exhibits the pilaster curve as repeated from the cut published with the preliminary general announcements of Vol. VI., No. 1. A plumb-line is here seen suspended by a stick held on the edge of the gallery above, in such a way that its lower end defines the edge of the pilaster near the base. The forward curve is thus measured at $3\frac{1}{4}$ inches. It is to be observed that the pilaster does not bend back of the perpendicular, and this will appear by placing a straight-edge on the plumb-line so as to continue its direction as far as the capital.* Hence, if there had been a thrust of the lower aisle vaulting there would be a fracture and displacement in the masonry joints above the capitals of over three inches. It is fortunate that the marble masonry of this part of the Pisa Cathedral shows the closest fitting and the finest jointing which the Middle Age can boast. In order that the delicacy and close-fitting joints of the original and unrepaired masonry may appear, the following photographs are appended. They relate mainly to one pilaster, but the facts all hold for its fellow. Fig. 9 is a photograph showing the

* The right pilaster does have a delicate return curve back of the perpendicular, but the possibility of an outward thrust from the arch above seems wholly barred by the consideration that this arch thrusts against transverse walls in the galleries, which unite with the exterior transept wall. For this construction see the plan of the galleries, Fig. 13. The doors, whose openings appear in the plan, are of no great height.



FIG. 10.—INNER NORTH AISLE, PISA CATHEDRAL, LOOKING TOWARD THE
TRANSEPT.

Showing the vaulting. For construction above at the piers compare the gallery plan,
Fig. 13.

face of the pilaster and the construction which surrounds it. The sharp and well defined edge of the arch masonry and its unfractured continuous line are very clearly shown. Fig. 2 shows a rear view of the pier of which this pilaster is the facing. (The leaning column on the right in Fig. 2, shown in contrast with the plumb-line, leans by constructive setting and leans from a slant in the joint seen above the base. The survey has a photograph of this column in large detail from the opposite side, which shows the column bending at the joint. The columns of ancient temple porticos were leaned intentionally for reasons variously explained. See, for instance, Boutmy and Penrose. No conclusions can be drawn from this ancient example as to the intentional asymmetry of leaning columns in mediæval work.) Fig. 10 shows the aisle vaulting nearest the pier in question. The pier in Fig. 10 is on the right and is seen in the distance. At this point it will be noticed that the vaulting rests on a transverse wall and a lower arch of black and white marble voussoirs. Fig. 11 shows the adjacent aisle vaulting in a view facing in the opposite direction towards the entrance and illustrates the character of these transverse arches. A better view of the construction of these transverse arches below the aisle vaulting is offered by Fig. 12, which shows the construction of both aisle arches in one view. This view looks out of the south transept into the nave and relates to the pier and pilaster opposite to the one which has been illustrated in detail. It is very important to observe that all these photographs represent the original marble masonry of the arch construction in its careful workmanship and fine preservation. In the transepts the Renaissance stucco decoration of stripes imitating the colors of the marble begins above the line of arches, but it does not include the masonry of the arches. (In Fig. 12 the stucco begins at the first white stripe above the arches.) In the nave the stucco stripe decoration begins above the gallery arches, but the stucco does not extend to the pilasters which have been described. These explanations bear on the value of the photographs as showing the character of the joints and of the masonry construction. The delicacy and refinement of taste shown in the entasis of the pilasters are equally apparent in these details, which verify its constructive existence.

Fig. 13, a plan of the Pisa Cathedral galleries, shows the reinforcement of the piers at the level of the galleries by walls, which connect these piers with the walls of the transept.

Some additional facts are brought out by these pictures of a class considered under the head of constructive asymmetry (Vol. VI., No. 3), and it will be wise not to omit a mention of them here. It is the peculiar distinction of the Pisa Cathedral to combine a larger number of refinements than any other building in Italy and under con-



FIG. 11.—EXTERIOR NORTH AISLE OF THE PISA CATHEDRAL, LOOKING TOWARD THE ENTRANCE.

Showing the masonry of the arches at the transept.

ditions of such obviously careful arrangement when the masonry is examined in detail, that much light is thrown on the more isolated phenomena of many other churches. St. Mark's at Venice offers an equal amount of subtlety in its details, but under such conditions of ruder workmanship in some points, and of infinite variety in others, that it is difficult to draw the line there between artistic indifference to symmetry and the intentional avoidance of it. It would be difficult to prove, for instance, that the irregularities of casing in St. Mark's are anything more than the usual and natural results of artistic hand-work, such as appear in old lace and Oriental rugs, but the carefully contrived irregularities of the Pisan masonry reveal themselves unmistakably to a careful observer. If there were any doubt as to the definitely purposed avoidance of symmetry in the alternations of white and black marble which are shown by the arches of Figs. 11 and 12, and the horizontal stripes of Fig. 14, this doubt must certainly disappear when the piers are considered whose pilaster entasis has just been illustrated. Is it an accident that the whole right pilaster of Fig. 6 is of black marble and the whole left pilaster of white marble? Is it an accident that the whole main right pier faced by the black pilaster is of white marble (see Fig. 2)? Is it an accident that the whole main left pier faced by the white pilaster is of black marble (see Fig. 2 and Fig. 6)? Is it an accident that the whole rear pilaster facing the rear of the white pier is of black marble (see Fig. 2)? Is it an accident that the whole rear pilaster of the black pier is of white marble (see Fig. 12, compare Fig. 6)? After such a convincing proof we move with confidence to a study of the variations in masonry color, which are illustrated by the arches and stripings of Fig. 14. Such facts may be apparently foreign to those regarding the vertical curves, but they are not so in reality. Both classes of facts contemplate the avoidance of monotony—in one case the monotony of the straight line, in the other case, the monotony of parallelism in color.

In Fig. 6 we notice the capital of the pilaster on the right as being about two feet lower than the corresponding capital. This irregularity is especially to be remarked in Fig. 7, where the same capital, now seen on the left, should, according to perspective effect, be higher than the one opposite, but it is still seen as dropping below it. The mystification of the eye resulting from such asymmetry is much greater in the building than is suggested by the photographs, but one still feels, in glancing at No. 6, that the standpoint of the camera is much farther to the left, judging from the capitals, than it appears to be when the distances of the piers in the foreground from the edge of the picture are considered. It then turns out that we are not far from the centre of the church, in spite of the depression of the right pilaster capital.



FIG. 12.—PISA CATHEDRAL, LOOKING TOWARD THE NAVE FROM THE SOUTH
TRANSEPT.

The impression that the photograph is taken farther to the left of the centre than is the case, is enhanced by several facts. The south gallery cornice (left in Fig. 6) is concave in plan, the north gallery cornice (right in Fig. 6) is convex in plan (see Fig. 13). The south gallery, therefore, is unduly foreshortened in the photograph, and the north gallery is less foreshortened than it would otherwise appear. This also gives an appearance of a picture left of the centre, which is again stressed by an inequality in the heights of the gallery cornices; the north gallery being eight inches lower than its fellow, at the transept. We have here another series of the expedients for producing an optical confusion as to the point of sight, by a series of varying effects from any one given standpoint, which have been described in an earlier article.

In Fig. 10 we see the plinths of the aisle columns whose arrangement in an unbroken curve has mention specified by figures in the preceding issue (p. 502) and which is represented by survey in Vol. VI., No. 3, Fig. 6. The complete curve could not well be shown in the picture, as it was not possible to place the camera so as to include the bases near the entrance.

In Fig. 12 we see some of the transept columns mentioned in Vol. VI., No. 3, p. 387, as averaging two and a half feet higher than the companion line, for reasons there explained. In Fig. 14 both these lines of transept columns appear in the distance.

In Fig. 11, finally, we have an illustration of the inevitable irregularities due to the use of heterogeneous materials, as shown in the varying heights of the line of capitals, which are simply due to the accidental variations in height of the ancient columns, which were brought from Sicily. (On these points compare Vol. VI., No. 3, p. 387.)

VII.

In these last paragraphs we have abandoned the treatment of the entasis in mediæval piers in order not to omit new illustrations or corroborations offered by these pictures of points previously dwelt upon; all bearing on the general fact that subtleties of construction were systematically practiced by the Italo-Byzantine builders. Additional cases of the mediæval entasis will be described in a following Paper. Meantime its general character may be further illustrated by a well-known Renaissance theatre, the Teatro Olimpico at Vicenza (Figs. 15, 16).

The Teatro Olimpico is a design by Palladio, constructed after his death. The stage scenery is a stationary construction of timber and stucco. Its central arch (Fig. 15) shows Palladio's use of the entasis in pilasters, a use which in this instance gives exactly the gen-

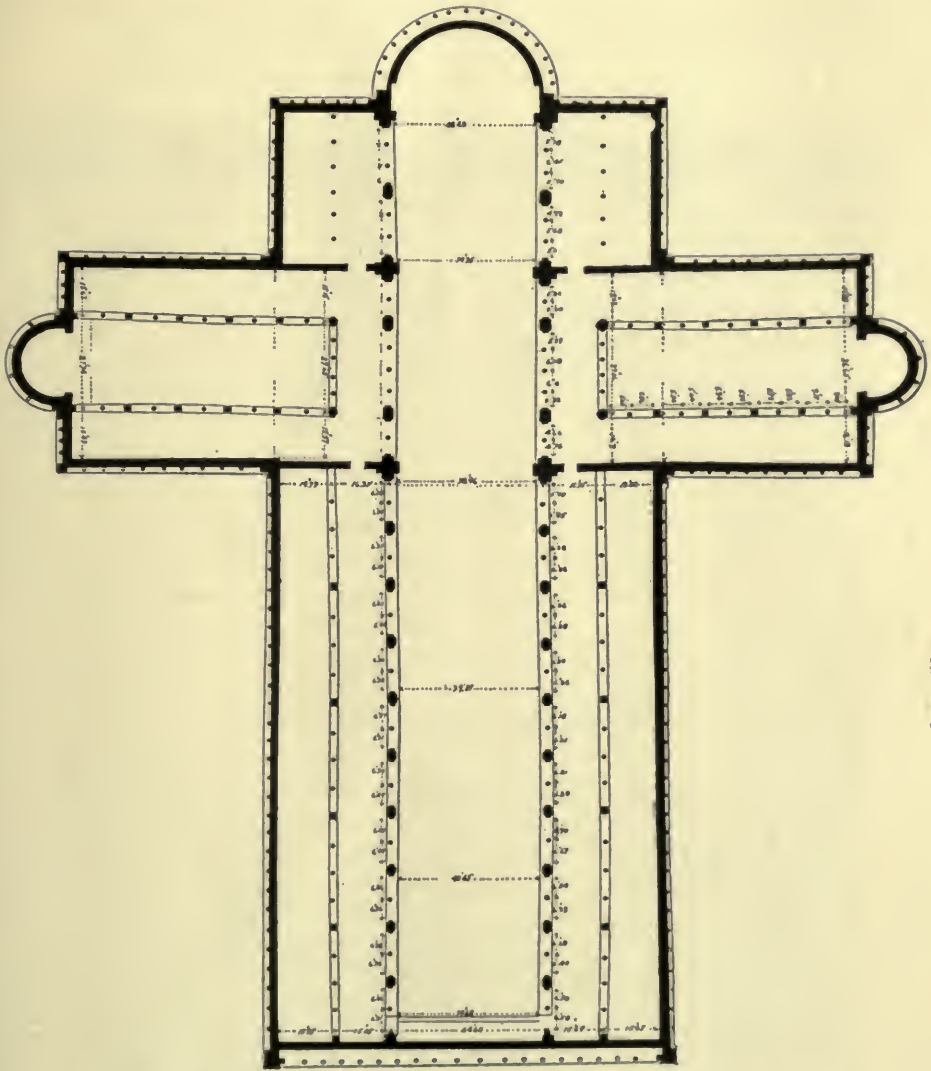


FIG. 13.—PLAN OF THE GALLERIES, PISA CATHEDRAL.

This plan shows the reinforcement of the transept piers and their connection with the transept walls. It also shows the curves in plan of the galleries. Drawn and surveyed by Mr. John W. McKecknie.

eral results of the backward bend of the pilaster into the curve of the arch which appears in S. Miniato at Florence (Fig. 5) and in many other mediaeval piers. The same bend appears in S. Stefano, a Renaissance church of Vicenza, as a result of the use of the entasis in pilasters. And the Gothic cathedral of Vicenza offers a closely analagous and impregnable case of the corresponding mediaeval entasis. This is the church mentioned in our first article as showing an entasis similar to that of Fig. 5, in half-columns which

face chapel walls, instead of piers. These walls are solid, without even the break of a door-way, and are about twenty feet in depth.

It has been observed in the opening of this Paper that Palladio's use of the entasis in pilasters is supposed by modern architects to be without a Roman precedent. The accompanying photograph from Baalbek (Fig. 17) shows, however, that the entasis was used in pilasters by the Roman architects of the second century of our era. I noticed this entasis at Baalbek in 1869, since which time the photograph now published has been in my possession. It is well known that many and important ruins of the city of Rome have disappeared since the sixteenth century. Two suppositions are therefore possible—either that Palladio did independently what the Roman art had done already or that he was acquainted with Roman examples in Italy, similar to that at Baalbek, which have since disappeared.

In either case it is probable that we have at Baalbek an example of a classic entasis which cannot be explained by theories of optical correction, and which must be due to aesthetic considerations. It is true that our instance is of corrupt style, but it is none the less important historically. None of the explanations of an optical illusion causing an apparent concavity of lines, to be corrected by an outward curve, will apply to such a case. The habit of considering the entasis of the Roman and Renaissance engaged columns as a wholly imitative feature, due to a cause existing in porticos and not existing in the engaged columns themselves, may receive some shock from this example. As long as aesthetic considerations are allowed to have some share in the conception of the Greek entasis (also generally quoted for Egyptian obelisks) it would appear that they must have had a still more distinct influence in the engaged columns and pilasters of Palladio and of the Romans. Certain it is that the Palladian palaces of Vicenza are, of all Renaissance buildings, those which strike the student of optical refinement as having an effect of optical mystification analogous to that found in certain mediaeval buildings. Is it not possible that this is due to Palladio's universal and emphatic use of the entasis—his use of the curving line?

VIII.

The point to be kept in view, however, is that as a matter of fact there are two sixteenth century Renaissance examples at Vicenza of a peculiar bend of the piers supporting an arch, and that this bend is a counterpart and continuation of the mediaeval entasis of the pier.

This leads me to say that in the composition of this article I have been influenced to some extent by the very important letter below



FIG. 14.—PISA CATHEDRAL, LOOKING FROM THE NORTH TOWARD THE SOUTH TRANSEPT.
Showing the systematically varied use of colored marble masonry in arches and stripings.

appended, and originally published in the "Evening Post" of May 3, which Professor Charles Eliot Norton was good enough to write me on the score of the discoveries which have been published in the "Architectural Record."

Dear Mr. Goodyear: I am much obliged to you for sending to me a copy of the last number of the "Architectural Record." Your article in it is of great interest, and, in continuation of your former paper, it brings together a series of facts which cannot but change our conclusions in many respects in regard to the principles and methods of mediæval building. You have opened a vast field for discussion, and you have provided a mass of material so exact and so well selected as to furnish a solid basis for the work of future inquirers.

But it seems to me that one result of your investigations is that much wider investigation must now be undertaken. Your work, while it solves many questions, has but opened many others. One of the most important, certainly one which it is very desirable to determine in order that we may understand properly the principles of mediæval building, is, whether the builders of the churches which show these remarkable designed irregularities erected them on a basis of well-recognized principle derived from authentic tradition, or whether in their construction they were using simply empirical methods handed down from generation to generation without intelligent understanding of their real significance.

If their work was based on a tradition from ancient times, it is a surprising fact that we have no literary record of the principles by which they were guided, no reference, so far as I am aware, in any work later than Vitruvius indicating that the architects possessed a body of traditional principles by which the character of their work was determined. (And when was the tradition lost? How did the precious knowledge vanish from the minds of men?)

I am much obliged to you for bringing to my attention Mr. Middleton's article in the "Nineteenth Century"; it is a just but hardly a sufficient recognition of the value of your work, and it is of service as calling attention to the fact that there is now need of much more elaborate examination and careful measurement of the best Gothic structures in England, as well as on the Continent, than they have heretofore received.

I hope that it is your intention to gather up your own various articles upon the matter into a volume. It is not easy always to study a subject which is to be looked up in various numbers of various magazines. I hope also that your interest in the subject is such that you will carry on your investigations in other regions than Italy, for there is no one who understands so well as you the various points which are to be regarded, and the risks of overlooking some of the matters which require closest attention. Indeed, one of the most instructive general results of your investigations is the conclusion which one is forced to draw in respect to the fallibility of human perceptions, and the carelessness of our common observations of the objects which present themselves to our sight.

C. E. NORTON.

Prof. William H. Goodyear.

Two questions are raised by this letter which require consideration. How did the use of mediæval optical refinements come to disappear and why have we no record of them?

I suggest, on the first head, that they did not wholly or suddenly



FIG. 15.—PORTION OF THE STAGE SETTING, TEATRO OLIMPICO, VICENZA.
Showing a horse-shoe bend in the profile of arch and pier, as result of Palladio's use of
the entasis in pilasters. Compare Fig. 16.

disappear with the close of the Middle Ages. The horizontal curves are found in the parapets of the Certosa at Pavia which is early (fifteenth century) Renaissance. The vertical curves appear in the Teatro Olimpico and in S. Stefano at Vicenza in a similar form to that which we find in the Gothic cathedral of Vicenza. It is well known that perspective illusions were practiced by Bernini (Scala Regia) and by Borromini (Palazzo Spada). In fact, up to date such illusions have been only recognized as occurring in the late Renaissance. The nave of St. Peter's narrows in nine feet four inches between the entrance and the transept. This is quite possibly due to some special cause connected with the lengthening of the nave by Carlo Maderna, but it is not wholly impossible that an optical trick of the Bernini style is in question here. There is no doubt that a very considerable increase in perspective is obtained by this narrowing in of the nave at the third pier, and there is no doubt that this element of effect in increase of magnitude is universally overlooked. The deflected ground-plans of the Middle Age are also paralleled in St. Peter's, whose nave axis is deflected about a foot from that of the choir. One is tempted to ask whether there have not been Masonic secrets which the Free Masons have neglected since they ceased to be masons. It may be that the secrecy of some of the Masonic guilds which preceded and developed into the modern secret society of the Free Masons may answer one of the questions which Professor Norton has raised, as to the absence of written mention of the mediaeval refinements.

As to constructive asymmetry in the Renaissance, there is a suggestive passage in a recent German journal, apropos of the opening to the public of the Appartamento Borgia of the Vatican. I owe to the politeness of Mr. Edward R. Smith, curator of the Avery Library, my knowledge of this extract. The original German will be found in the *Kunst-Chronik* for May 15th, 1897.

Was it intention or was it necessity that none of the walls are parallel in any of the rooms of the Palace of Nicholas V. or of the Torre Borgia? . . . All the apartments have the form of an irregular trapezoid. There are no right angles at the corners of the rooms. Consequently the division of the spaces of the vaultings [and their frescos] and also of the walls, could not be managed without a certain hap-hazard [or arbitrary] appearance. Were the picturesque results reached consciously or unconsciously, by the abandonment of rules which no modern architect fails to consider? At all events the Appartamento Borgia offers in this line also an abundance of material for thought and for study, and the influence which the arrangement and decoration of these magnificent rooms, now once more thrown open to the public, are destined to exercise on the palace architecture of modern times cannot be estimated.

Similar facts to those quoted may be noted in the Stanze of Raphael, and they are especially apparent in a more oblique setting and align-



FIG. 16.—PORTION OF THE STAGE SETTING, TEATRO OLIMPICO, VICENZA.
Showing Palladio's use of the entasis in all columns and pilasters. Compare Fig. 15.

ment of the pavement mosaic patterns than the irregularity of the walls would seem to call for. The given rooms are a construction of Bramante, just succeeding in time to those of the Appartamento Borgia. It is quite certain that one superiority of the early Renaissance architecture to the more formal and frigid later Renaissance style lies in its off-hand spontaneity and acceptance of natural irregularity. Possibly it also shows an occasional purposed avoidance of symmetry. There are very strong curves in plan in the loggie of the Vatican built by Bramante, which face the piazza. They are not due to movement of masonry, as they reappear in the inner wall of the third story loggia. They may be due to carelessness, but it has not been usual to charge Bramante with this fault. Moreover, the inner wall curves, and outer cornice curves, are parallel.

Thus the survivals just quoted, and others which may be brought to light, may illustrate a farther gradual and natural dying out of the mediaeval refinements, which is already a very marked feature of the North Italian Gothic. Their ultimate entire disappearance would not be a startling fact, in view of the tendencies to artistic blindness in our own age which the failure to notice the Greek entasis appears to specify and illustrate.

If the artistic effects obtained in many mediaeval buildings were due to a highly cultivated artistic sense, then the gradual dying out of this artistic sense, which seems to be a conceded result of nineteenth century progress, would explain the disappearance of architectural refinements. If empirical observation of optical effect was one source of these refinements, the weakening of the modern eye will be one explanation as to why these effects are no longer studied. If traditional continuation of ancient classic methods was one source of the refinements, the gradual weakening of classic tradition through the later Middle Age will also explain their disappearance.

As to the absence of written records, which Professor Norton mentions, it is my impression that mediaeval writers did not indulge in architectural disquisitions or treatises on building. In so far as they have failed to give us systematic information on other points, it is not surprising that they should also have neglected this one. It appears in our own time that it is already growing difficult to write a connected history of the evolution of the steam engine, owing to the disappearance of important early plans. Is it not a general rule that a vigorous and vital art does not tend to lay stress on literary record or literary elucidation? It would appear that the Greek works on the theory of architecture were later than the creation of the greatest monuments. In spite of the disappearance of these classic records, it is well known that many such existed, and that both optical corrections and optical illusions were considered by them. The preservation of Vitruvius was a lucky chance, and without it, it ap-



FIG. 17.—THE ENTASIS IN ROMAN PILASTERS AT BAALBEK, SYRIA.
The date is second century of our era.

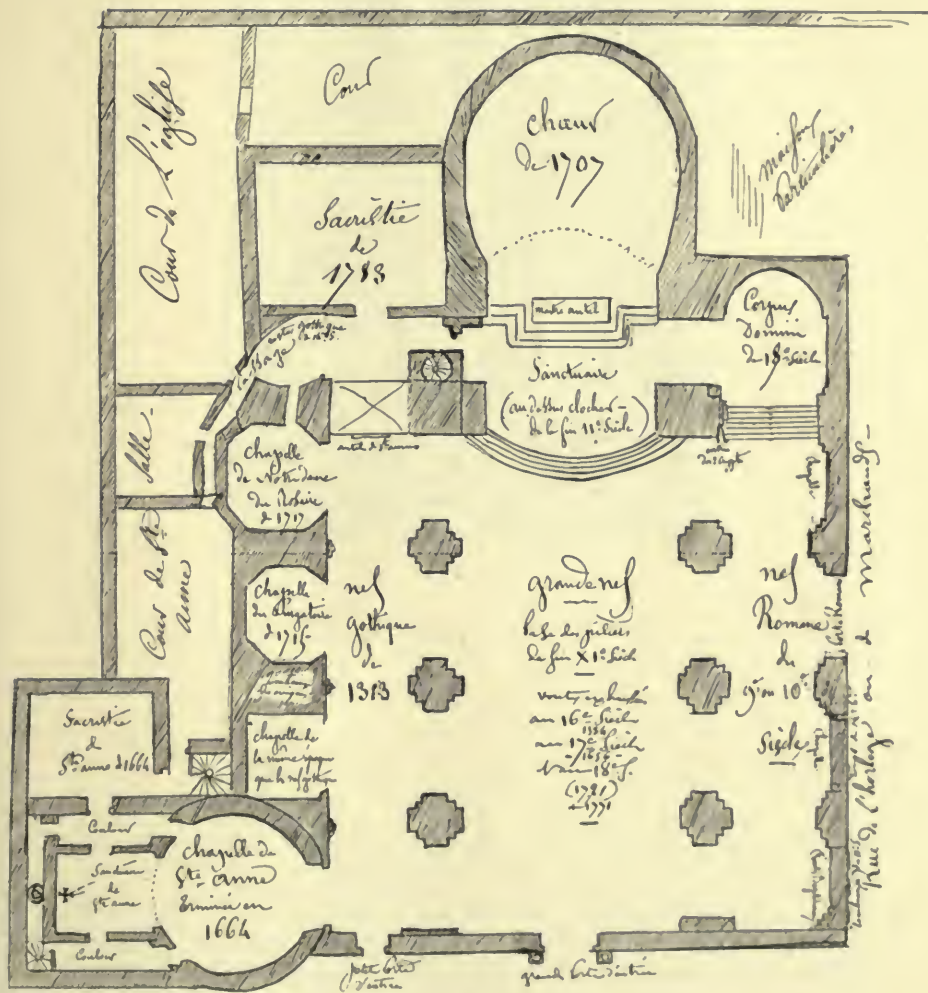
appears possible that the Greek curves might never have been discovered. We know that Pennethorne was prompted to look for the Parthenon curves by connecting his memory of those at Medinet Habou with the passage in Vitruvius prescribing the curves. These points are suggested with great deference to Professor Norton's superior knowledge of the matters concerned, and they may be summed up as follows: The absence of literary mention during the Middle Age may not be especially surprising, in view of the close bonds, professional jealousies, and traditional secrecy of the Masonic guilds. The ultimate abandonment of optical refinements is preceded by an earlier dwindling away of the exceptional prominence which obtains for them in the eleventh century, especially in the Pisa Cathedral and St. Mark's. The Renaissance does show very late and very distinct survivals. Altogether, I think we shall be led by a study of this subject to a more vital apprehension of the overwhelming shipwreck which the Italian Renaissance brought upon mediæval art—a shipwreck clearly prophesied in the Italian Gothic.

A most remarkable case of the survival of mediæval tradition, without the assistance of literary record, has been brought to my knowledge by Mr. George L. Heins. It appears that Scotch masons of Halifax, Nova Scotia, have actually been applying the entasis to church spires in our own generation, as a traditional expedient. They have explained to Mr. Heins their empirical method for obtaining the desired curve and their explanation of its use was that "it looked better so."

Of still greater interest is the fact that the designs of Messrs. Heins and La Farge for the new Episcopal Cathedral of New York include a series of refinements similar to those which obtain in the Cathedral of Pisa and other mediæval churches described in these articles.

Wm. H. Goodyear.

(To be continued.)



SKETCH PLAN OF THE CATHEDRAL OF APT.
An unpublished drawing by M. Garcin.



WEST FRONT, SENEZ.

FRENCH CATHEDRALS.

 Part XI.

THE CATHEDRALS OF PROVENCE.

SENEZ

THE little town of Sénez is about twenty-two miles from Digne, but the railroad only runs to within four miles of it. It is wholly outside of travel, and even a Frenchman would hesitate to visit it unless urgent business took him there. Your landlady at Digne will eloquently maintain the town contains nothing of interest, and only by the most persistent effort can a visit to it be accomplished. Whatever importance Sénez may once have had it has so completely disappeared that to-day it is only a poor hamlet, in which the little cathedral is the one important building. Though not the smallest cathedral in France it is one of the least known, and certainly one of the least visited; some extended reference may, therefore, be made to it.

The close proximity of the town to Digne is sufficient explanation for the similarity between the cathedral churches of the two cities.

In plan they are almost identical, save that at Senez the transepts have semi-circular apses on the east, and the central apse is also a semi-circle. The nave has a pointed tunnel vault, rebuilt in the present century, carried on three single arches resting on corbels. It is lighted by featureless round headed windows. The apse has a very short rectangular part, with a tunnel vault slightly higher than the semi-dome beyond. At its entrance is a double arch, the lower of which rests on applied half-columns, with cushion-like capitals, having a rosette on the centre face. It is lighted by three round-arched splayed windows.

The transepts have pointed tunnel vaults, with double arches and half-columns at the nave, as at the nave apse entrance. The apses are similar to the main apse, but have no opening arches, and only a single window. The sacristy is under the tower, and immediately adjoins the west wall of the south transept. The corresponding place in the north transept is the usual entrance to the cathedral, through an outer room or porch, devoid of architectural interest. The apse of this transept is enclosed by a screen in a modern Renaissance style. The cathedral is so small that the choir stalls extend beyond the transepts into the third and fourth bays of the nave, most of the interior being thus used for the altar services.

The exterior is as simple as the interior. The west front recalls that of Digne, though much less elaborate; it is in a very bad state, with a large crack on the north. On each side is a plain buttress, with the portal in the centre. It is a pointed archway, whose columns, three on a side, have disappeared. The arches are delicate roll mouldings, separated by fillets and hollows; the outermost is decorated with regularly disposed foliage, now in a bad state. At one time these arches were painted in color to resemble variegated stones, and traces of red, black, yellow and white may still be seen on them. On each side is a projecting stone that may have been carried on an outer column as at Digne. The lintel bears the date 1837. Above is a slender, round-arched window, whose splay is edged with a delicate roll moulding. The rather sharply pointed gable is without ornament or finish.

The side walls are almost featureless. On the north the first bay has been filled up to the depth of the plain buttresses, giving the window an external splay of enormous depth. The transept is perfectly plain, with a gable raised above its original inclination. The south wall retains its original buttresses, but the old windows have been blocked up and new ones cut. The tower adjoins the south transept, as at Digne. It is now an almost shapeless mass rising not far above the nave roof. The lower part of its south face is built out in buttress form and continued around on the west. Above it is divided into two sections by a string, with two small round-arched

windows in the upper one on the south side, and one on the west. It has a very flat roof of wood, above which, on the north side, are two small open arches with bells.

As is frequently the case with the early cathedrals of Provence, the most interesting portion of the exterior is the east end. Here the three semi-circular apses are divided into bays by slender half columns, of which the central apse has four and the smaller one two. The cornices are formed of small pointed arches on triangular corbels. Over the central apse, in the nave wall, is a small, round window, with double recessed frame. The gable end, which is unornamented, was raised when the vaults were rebuilt in our century.

It need scarcely be said that a building so simple as this, a structure so decayed, and now almost uncared for, devoid of architectural interest, and without monumental form, is of small importance in the history of architecture. It is, however, interesting, as illustrating a simple and elementary type of building, and viewed from the southeast its wood roofs, with their long, spreading lines, its tower and its apses, make a whole that is distinctly picturesque, and certainly quite unlike any other cathedral exterior. It is evidently of the thirteenth century, and its consecration is recorded to have taken place in 1242. Its restoration in the sixteenth century, after it had been ravaged by Francis I. in 1536, and by the Protestants four years later, does not appear to have been more than was sufficient to refit it for the uses of divine worship. The later restoration in the early part of the nineteenth century was scarcely more extensive. At the most, it is a slight and unimportant fabric that has been subjected to sundry structural repairs, rather than to restorations and rebuildings, resulting in a somewhat picturesque pile that has been almost wholly overlooked by the historians of architecture.

APT.

Of the many Provençal cathedrals which have suffered from rebuildings and restorations none has been more unfortunate than the cathedral of Apt. Consisting of a south aisle of the ninth or tenth century, a central nave of the end of the eleventh, a north aisle of the early fourteenth, with chapels and a sanctuary of the seventeenth and eighteenth, and with almost countless repairs, generally in a debased form of art, carried out at the time most unsuited to such work, it presents a strange medley of unimportant parts with scarcely archaeological value. It is a church of some size, being about one hundred and sixty-five feet in length, with a central nave twenty-four feet wide. And its past history has been one of the most famous in France; for the church contains the relics of S. Anne, the mother of the Blessed Virgin, which, so the story runs, were brought here by a pious pilgrim to Palestine, sealed up and forgotten in the

crypt below ground, miraculously discovered in the presence of Charlemagne, and subsequently the object of the greatest veneration, that has not diminished in our own day. But the treasure amassed in nine centuries of pilgrimages disappeared in the Revolution, so that, to-day, it depends on its past glories rather than on its present possessions. Unfortunately, there is no record that Charlemagne visited Apt, save that contained in the legend telling of the finding of that body; but there is no disputing the religious fervor this relic excited, nor the subsequent fame of the shrine.

The date of the south aisle, the oldest part of the cathedral, is not now known, but it may, with the utmost confidence, be attributed to an epoch prior to that of the central nave, which is known to have been built towards 1056. It has been claimed that the central and south aisles belong to the same period, and are the remains of a two-aisled church repaired in 1056. Such a plan would have been wholly extraordinary, and the supposition, moreover, is not supported by the structures nor by their detail. There appears, therefore, no reasonable doubt that we have, in the south aisle, the remains of an ancient church to which the other parts were subsequently added. It is four bays long, with an elevated chapel at the east end, rebuilt in the eighteenth century, and corresponding with the crossing bay of the nave. The first bay to the west shows the Gothic character of the north aisle. The three remaining bays exhibit the original aspect of the ancient church. The low vault is constructed in a singular manner, being half a barrel vault on the south side and a half-cross vault on the other. Double arches divide the bays, forming deep recesses, used as chapels, on the south side. Over them runs a richly carved frieze, which is repeated on the north piers, where only the second and third bays retain the primitive wall arches, now opened into the nave below higher arches within it. The fifth bay, which is elevated to a level with the sanctuary of the nave, has a tunnel vault at right angles to the preceding ones. The semi-circular apse is entirely covered with decorations of the eighteenth century.

The central nave has been repeatedly repaired, its vaults having been subjected to alterations in the sixteenth, seventeenth and eighteenth centuries, with further restorations, including the whole cathedral, in 1840. But it is known to have been built by Bishop Alphant, about 1056, and its original characteristics must, therefore, have been those of the Provençal churches of that date. But the vaults are now pointed cross vaults, built about 1721, and which almost amounted to a rebuilding of the nave—round-headed windows which form a clerestory over the round longitudinal arches. The bay of the present century—the fifth bay—is the sanctuary, and is elevated five steps up, with the entrance to the crypt below. It is a

domed bay of the Provençal type, with deep single low arches on the east and west, and double corbelled arches, not unlike the system of Notre Dame des Doms at Avignon, on the north and south. The octagonal dome, with ribs in the centre of each face, is supported by the usual pendentives with symbols of the Evangelists. Beyond is a shallow bay, raised two steps up, with a large pentagonal choir or apse, built in 1721. A good deal of tawdry decoration, including a huge gilded glory around a painting of the Transfiguration over the entrance arch of the sanctuary, deprives these parts of the little architectural value they have.

The north aisle was added in the early years of the fourteenth century by Hugues de Bot, elected bishop in 1313. It is an unimportant addition in the thin Provençal Gothic. No attempt was made to amalgamate it with the older parts, but everything was started afresh, new piers being applied to the older ones, making these members unusually thick. The construction is most irregular, arches, columnettes, supporting members and vaulting ribs exhibiting a diversity that suggests poverty of ideas at the outset, and constant and unfortunate repairs afterwards. It is but four bays long, and is closed by a wall cutting off space for a passage, beyond which is the sacristy adjoining the choir.

In 1660, Anne of Austria made a pilgrimage to the shrine of S. Anne and, as a part of her offerings, contributed a large sum of money for building a chapel to the saint. It was erected by the celebrated Mansart and dedicated in 1664, supplanting a smaller chapel built in 1313. It is at the west end of the north aisle, and whatever character it may originally have possessed has been lost in the paint, chiefly solid body color, that has been applied to it. It consists of two parts, an octagonal bay next the aisle, with a circular dome, and an outer rectangle with a coffered vault. The relics of S. Anne were transferred to this chapel when it was finished, and at one time it contained many rich and splendid works of art that disappeared in the Revolution. Smaller chapels open from the other bays of the aisle, that in the second, now used for the storage of chairs, being contemporary with it, while the two succeeding chapels are uninteresting structures of the early eighteenth century.

The general effect of this interior is one of utter tawdryness. The architectural forms are of little interest, and the decorations and attempts at decorative effect are so very bad as to be almost depressing. The church is lighted by few windows, and those of small size. Yet when, on a clear summer's day, the great door at the end of the central nave is thrown open, the warm southern sun streams freely in, lighting up every part, and showing the poverty of its architecture and the bad taste of its accessories. The most interesting parts of the cathedral are not, in fact, what we see in this strong brilliant light,

but the crypts under the sanctuary, of which there are two, one above the other. The upper crypt is a miniature church of three short bays, an apse and an ambulatory. It is extremely low, with moulded capitals and round arches. It is attributed to Bishop Alphant, who built the central nave. The word "Ugo" on a stone at the entrance is supposed by some archaeologists to be the name of its builder or master mason. M. Révoil found the same word on the cathedral of Vaison, and has suggested that the same architect was employed in both churches. Both the meaning of the word and any connection with Vaison are, of course, the purest conjectures.

From the upper crypt a long narrow passage leads to the lower, which is simply a very low corridor that formed part of the Roman aqueduct that carried the water to the theatre of Apt. A small niche is famous as having been the hiding place of the relics of S. Anne.

The exterior of the cathedral is even more featureless than the interior. Its west front alone is free from other buildings, but no compensation for this is offered in the mediocre entrance of the eighteenth century, or in the false formless gables of the aisles. To the left the dome of the chapel of S. Anne forms an odd contrast to the lantern over the central dome and clock tower, built against the south wall in 1565. On the south wall are some remains of the cloister, and a small Romanesque doorway, unornamented, opens under the clock tower that spans the street; almost all the rest of the exterior is surrounded by houses and other buildings. The central lantern is square, divided into two bays on the north and south faces by a central half column, repeated on the corners, and with two windows in each bay. It is surmounted by a low four-sided pointed roof.

The cathedral of Apt is not visible to the traveller as he approaches the city from Cavaillon; but as the train moves on towards Volx—on the route to Forcalquier—the track rises to a height above the city, and the whole is clearly visible. It is then seen to dominate the city, but without the grace and beauty of the northern cathedrals or the sturdiness and strength of many of the southern churches. One takes away with one a sad remembrance of this melancholy cathedral, whose history was once so brilliant, but whose architecture, even in the best period, scarcely rose above the level of the ordinary.

Barr Ferree.



Fifth Avenue, N. Y.

THE HOLLAND HOUSE.

THE WORK OF GEORGE EDWARD HARDING & GOOCH.

THE Commercial Cable building is about the most importunate structure in New York. It is not the kind of edifice which is done all at once, "designless, self-created and forlorn," as the poet says. It implies a series of previous attempts upon the public, at least the building public, and a pretty clear conception of what it wants and of what it will stand. What it wants practically, that is, and what it will stand artistically. The genesis of such a work of art ought to be interesting, and the edifice worth tracing back to its sources.

The sources are not very remote, according to the scale of the geologist or even of the historian. But they go back to a respectable antiquity in the brief chronicles of the sky-scraper. It was "away back in the early nineties," possibly even in the late eighties, when the Holland House was built, and this, I believe, was the first of the

series. Architecturally, this edifice is rather a platitude, but it is a decorous and inoffensive platitude. According to the dictionary, platitudes are "weak, empty, trite or stupid remarks," but it is the triteness that is most obvious in this design, and that one means to emphasize in calling it a platitude. It is not an extreme elevator building, being but of ten stories, and it is not even clear at a glance that it is a steel frame building. The masses look adequate for actual masonry. One does not demand novelty in a new building and, indeed, the pursuit of novelty for its own sake is apt to result in something worse than a platitude. But one does demand an intelligent and individual analysis of the regular thing, and that is what one looks for in vain in the Holland House. It shows a confused apprehension of things that everybody is agreed about. A two-story basement with plain piers, retreated screen wall and intermediate mullion piers. Agreed. A middle section emphasized by a feature running through, sometimes an order, in this case a series of arches at the centre. *Connu!* An attic of a richer treatment, with a projecting and enriched cornice. Too true. All depends on how it is done, and upon whether the designer brought anything of his own to add to the consensus of mankind. I cannot see that he did. On the contrary, he shows, as was first said, only a confused apprehension of that consensus. The cornice seems to request us to ignore the additional story above it, and we will kindly do so. But the three-story attic is not a crowning feature, an integral part of the design but a building superposed upon another building with the effect not of completion, but of competition. Moreover, "mostover," the main central motive of the building, the range of continuous openings in the middle division is so weakened and diluted in execution that it makes scarcely any effect at all. Obviously, to have their due effect, the arches should be grouped at the centre. Perhaps it is the Hotel Imperial, from which the designer immediately took his motive. There the whole face of the design is the grouping of the continuous arches at the centre of the front on which there is more than one. It is possible to widen the piers so as to pierce them with windows, without losing the effect. It is not so managed here, however, and the weakening effect of the wide separation of the arches is completed by the fact that there is scarcely any contrast between the openness of the centre and the solidity of the wings, and that the architects have not even made the wings symmetrical. It is possible, we know, to insert shallow oriels in the large openings without destroying their effect, but it is not possible to keep any effect while spreading the openings at the ends, instead of concentrating them, and while inserting a pier two windows wide at the centre between them. By this disposition the motive is so adulterated that it becomes void and

of no effect. The basement is much the best, as it is much the least pretentious thing in the building. On the side the baldness of it is more suitable to a warehouse than to a hotel, but on the front this is relieved by the porch. This porch is much the best thing in the building, the only thing, in fact, that indicates that the designer was interested and enjoyed himself in doing it, and which was not "wrought in a sad insincerity." The interior is noteworthy for the sumptuousness of the marble with which it is lined. A trite classical quotation will fit it very well, with the change of a single letter: "Materies superat opus." Not that the "opus" is bad. On the contrary, the carving of the newels of the staircase is distinctly good, and appreciative of the material. The evident enclosure of steel posts with slabs of marble, in place of the more usual imitation in a marble veneer of a marble column or pier, is also commendable in intention, however much better it might be in execution. If it be not artistic, it is at least rational.

The Postal Telegraph Building is a good deal more pretentious than the Holland House, and consequently a good deal more exasperating. When a born platitudinarian feels the public demand for "something new" the results are apt to be awful. *Ex vi termini* he has no ideas, and he tries to make up for the want of them, though of this want he is not sensible, by vociferating his "weak, empty, trite or stupid remarks," and accompanying them with profuse gesticulation. He saws the air too much with his hand, "thus," and yells at you. The "lay-out" of the Postal Telegraph Building is conventional enough. A three-story basement, or four-story, including the frieze-story that counts in with it, a middle part of seven stories, and two attics, the lower much the taller. Excepting the two attics this is all obvious enough, and the exception is very bad. All this, fortunately, is in a monochrome of dull gray. It is something to be thankful for that it did not occur to the designer to variegate it with color also. His variegations in form are quite sufficient. The middle part, being the plainest, is much the least bad; on the front, a centre, recessed by an offset of a few inches; three very wide windows are inserted between two lateral piers, each with one narrower opening in each story, and the decorated sill course crosses the whole front. On the side, the plain pier with the single opening is repeated at each end, while the wall between is divided into three parts, marked by a broadening and projection of the pier between them and a consequent little jog in the sill course. Each of these parts is three windows wide. These windows, while they are wider than the single openings of the angle piers, are apparently narrower than the central windows of the front, and, like them, carry a projecting keystone or imitation of a keystone at the centre, which is omitted at the ends where the flat arch is left undecorated.

Considering that all this is so plain it is curious how it can be so bad. Certainly the plainness of it, in connection with the respectable breadth of the enclosing pavilions, ought to be conducive to repose. And yet so far from making the spectator drowsy, it murders sleep. Nobody can look at it without experiencing some irritation, and if he looks at it long, it "gets on his nerves," just as the street-noises get on his nerves if he lies awake and in spite of himself listens to them. The explanation is the same. The thing is a bundle of discords. Mark Twain, talking about Cooper's style, has a very happy illustration which applies to architecture as well as to literature: "When a person has a poor ear for music he will flat and sharp right along without knowing it. He keeps near the tune, but it is not the tune. When a person has a poor ear for words, the result is a literary flattening and sharpening; you perceive what he is intending to say, but you also perceive that he doesn't say it." The analogous deficiency in architecture is exactly what this middle and least bad part of the Postal Telegraph Building shows. In the description it would seem at least inoffensive, but look at the photograph, or, better yet, look at the building. Everything is just wrong. "He will flat and sharp right along." The relation of the wider openings to the narrower, the little protrusion of the piers on the sides, just sufficient to break up the effect of breadth and repetition without substituting the effect of powerful masses, organically related to the whole:—all these things show a profound and innate insensibility. You say when you see them that this designer was born form-blind as some people are born tone-deaf.

But still this middle part is much the least bad. The insensibility it shows is rasping to normal sensibility, but it is only an honest dullness. At the top and bottom the design breaks out into sensational things with an awful effect. Of course we know what dreadful things may happen when mere dullness is goaded by competition into showing off. But it scarcely seems possible that the same designer who did the honestly ugly middle did the top and bottom. These goocheries, if one may hazard the conjecture, are what add vulgarity to ugliness. That swaggering, flat-arched three-story entrance, with the hemicycle inside, out of scale and keeping with everything else in the building, is itself without form and a huge void. There is no modelling, no design, no ornament but the huge keystone that still further depresses to the eye the centre which even in a flat arch of these dimensions the eye demands should have some suggestion of a rise, and seems to load the arch at the very point where a load most enfeebles it. The springers, on the other hand, where some modelling to express the abutment was really called for, are left quite bald.

It is a singularly ugly feature, and yet not so ugly as the double



THE POSTAL TELEGRAPH COMPANY'S BUILDING.
Broadway, corner Murray Street, New York City.

attic. Why a double attic no man knows; still less why this double attic. The withdrawal of the central wall of the front and of the three divisions of the sides, where the piers that so annoyingly disturb the middle part at last have a meaning, might be well enough if it had an apparent motive, and were very differently managed. But there is no motive apparent except to make architecture. Even the emphasis of the pavilions for which the withdrawal offers opportunities which it is hard to escape, is entirely lost by the carrying of the huge cornice across them, and by the superposition of the second attic. This crowning feature, withdrawn into huge loggias of no use or meaning, becomes the crowning absurdity of the building, while the treatment of the preposterous lunetted cove, which may be in fact of terra cotta, but which, to all architectural intents and purposes, is of sheet-metal, becomes its crowning vulgarity.

It is really a terrible structure, of which the terror increases the more you contemplate it. And the terror is increased because it adjoins the building of the Home Life. That front is really one of the most intelligent compendiums that have been made of what had been arrived at in the architecture of tall buildings at the time of its erection. The relation of the base and crown to the shaft; the relation of the sides to the centre; the relation of the features to the mass; the relation of the detail to the features—all these things are just, granting the designer his postulate, which all the designers demand, that his building is of masonry. Moreover, these relations have the rhythm to which the designer of the Postal Telegraph has shown an aggressive insensibility. One is a scholarly performance. The other is zero, when it is not an emphatically minus quantity.

It remains to be added that on the fourth side, which from the North River is the most conspicuous side, the architect has frankly abandoned architecture, and left the wall and the "elevation" to the builder. He has not recognized that this side is conspicuous at all. Of course this is a common offense, and frequently committed by architects who would much resent having it said that they were not artists. But are they? A designer who exhausts his powers upon the fronts which are to be seen close at hand, and adjoins to them fronts which at a distance are just as much in view, and to the effect of which he pays no attention whatever, has the air of one trifling with his art. When we say that the bald brick back of his building has no design, he has to admit it, and defends himself by saying: "But if you want to see what I can do, just go round to the other side, where my architecture is." When we do this, we may find that we prefer the part from which architecture is omitted. But he has no business to like it better, for that is an admission that his building would be better without his art, an admission that he cannot be prepared to make; and his excuse must be that

he is not paid for more than one or two elevations. This is not exactly what you can call an artistic spirit. In the present case the back of the building which has escaped the designer's notice, might please the beholder better than what has engaged his attention, if the owner had not recognized the conspicuousness which his architect ignored. He has availed himself of it to cover the upper part with a huge sign, legible from afar, which is offered to us in lieu of an attractive piece of architecture. The addition of the advertisement to the blank wall has the advantage of making the spectator really regret the omission of architecture from this front, even the architecture of the other fronts, and the further advantage of vividly illustrating the triumph of the vulgarizing tendencies which the artistic designer of commercial buildings has to resist.

Undoubtedly, the Gerken Building is a relief after the Postal Telegraph, moderate as is that praise. It is of an extreme simplicity in the middle part. The basement and the attic are given to architecture, more or less, but the architecture of the basement is mostly shrouded from view by the structure of the elevated railroad, and, so far as it is visible, is protected from criticism by the straightforwardness of its utilitarian treatment, in which there is neither architecture nor the denial of architecture. The mere fulfilment of necessities is always respectable, and there is little more in this basement. We may grant the designer the bits of carving at the angles, which are the only pieces of design in the basement, excepting the main entrance, which in itself is neither here nor there, but derives a look of meanness from being crowded into a place too small for it. But upon the whole the three-story basement may pass very well as a mere warehouse, and so may the seven-story middle which has no ornament whatever, except the thin keystones of the upper story, which are too slight for any effect, good or bad, and the moulding of the sill courses, of which the same may be said. The only feature is the truncation of the angle to a face not wide enough for one of the openings of the sides, and in which, accordingly, a narrower opening is introduced. This change in form of opening, which in the Postal Telegraph building is a deformity, is here rather a felicity. So much depends upon circumstances in architecture. The narrowing of the opening here explains itself. Moreover, the ample pier, for which it gives room, counting from the window of one side to the window of the other, reinforces the mass at the angle, where it most needs visible strength. It is the first evidence of rational design that we have encountered in this survey.

All this is either positively or negatively good, because thus far the designer has confined himself to doing what he had to do. But above this stalk comes the blossom, and the blossom is not beautiful. We may grant the designer the triple subdivision in the uppermost of its three stories of the openings which are left undivided in the lowest,



THE GERKEN BUILDING.

West Broadway and Chambers Street, New York City.

but the story between departs from the utilitarian treatment that elsewhere prevails, and is so much richer as to denote an entirely different destination. A mere loft is converted into an ornate apartment which contradicts its surroundings. Moreover, the pilasters which were meant to adorn the piers serve only to enfeeble them. Still it is decidedly the most creditable, because or in spite of being the least pretentious, of all the works under examination.

A project which, up to date, remains on paper is that for a twenty-story building at the corner of Broadway and Reade street. This exhibits several peculiarities of design. One of them is that the basement is a complete building in itself, and taken by itself, including the



THE DUN BUILDING.
Now erecting N. E. corner Broadway and Reade St.

crowning cornice, would not suggest that anything was to be built above it. Moreover, it is of the unusual height of six stories, which is to say of the maximum altitude of the pre-elevator days. Considered by itself it has good points. We have already quarreled, in the Holland House, with the designer's adulteration of his principal motive by widening the piers between his large openings and piercing these intermediate piers with windows. Here that mistake is avoided, and the immediate precedent, if it was so, the Hotel Imperial, is much more literally followed to the considerable advantage of the building. Here, as in the original, there are three openings running through at the centre of the longer front, and one at the centre of the shorter, and although the abutments are pierced, the openings are not large enough to disturb the sense of sufficiency, and, therefore, of repose. Moreover, the truncation of the angle which we first found in the Gerken Building is repeated, and here as there the effect of it is good. The chief trouble with the basement is the construction of a feature at the centre of the Broadway front which has absolutely nothing to do with the case. This is the lintelled opening which includes the central windows of the second and third stories, and is as objectionable as the hemicycle which forms the entrance of the Postal Telegraph Building. In respect of irrelevancy it is even more objectionable. The object in each case is to signalize the entrance by a central feature. But in the other case it was really the entrance that was signalized, whereas in this not only is the entrance lower than the feature, but it is apparently not even under it, and access to the building is in fact gained through inconspicuous tunnels at the sides. It is a most unscrupulous case of making architecture. But for this, and with more and different development of its crowning member, the basement would not be a bad six-story building as commercial buildings go.

But its merits disappear when it is seen in the connection that was designed for it. The nine, or ten, story shaft also has its merits. They are the same as those of the substructure, or of the Hotel Imperial, in that a large central opening or range of openings is included between two powerful and visibly sufficient abutments, which the openings in them do not avail to weaken. It is true that the whole scheme is irrelevant to the "bottom facts" of a steel-cage construction. The arches do not exert the thrust they seem to exert, the seeming masses of masonry are not masses but only veneers, and consequently they do not need and do not employ these seemingly powerful abutments which in turn do not resist the thrust they pretend to resist. But this, as has before been intimated, is a radical criticism which no designer of tall buildings has done much to the purpose towards obviating. We must grant all designers what we have to grant the best, and allow them to beg the whole question by

pretending that a steel frame is a wall or a series of piers. All that there is of expressive treatment of the new construction is a mere beginning, and the steel-cage "lacks the sacred poet."

Granting our designers this, then, the middle front of their buildings, like the basement, is not bad when taken by itself. It is a good scheme of a shaft, and is abruptly set off from the base, though it merges into the capital in an undecided fashion, and the "necking" ought to be a good deal more emphatic. But it has to be taken by itself, and it cannot be taken by itself. The motive is a good motive, and the architect has shown appreciation in adopting it. But he has shown much want of appreciation in repeating it. The motive of the shaft is the motive of the base. It cheapens and weakens and makes intolerably monotonous a good notion to work it in once in a building of six stories, of which the notion occupies four, and then to use it again in another building of nine, or ten, stories superposed upon the first, of which the notion occupies nine. On the long front the repetition is unconcealed, and the effect simply tiresome. On the shorter front it is disguised, and to disguise it was very likely one of the motives for introducing that irrelevant piece of made architecture at the centre of the Broadway front. It does not achieve its purpose but adds an effect of heterogeneousness to the effect of simple tediousness. As for the third member, the capital, no notion of any kind is discernible in it. It is an assemblage of unrelated parts of which the effect is mere higgledy-piggledy.

Next and last comes the Commercial Cable Building. This is about the most obstreperous structure to which the new construction has given rise. It would probably be assigning altogether too much of purpose to its author to attribute to him the intention of stopping the vista of Nassau street, looking south, with the pushing shoulder and brazen terminal bulb of this edifice. Anybody can see how it looks now, but to infer its effect before it was built would require an amount and a kind of calculation which neither this building nor any of its predecessors warrants us in attributing to its author. To know beforehand just where and how this cupola would emerge, and what the effect of it would be when framed in between the lower buildings to the north of it, would have involved a deal of calculation. But the effect of what was probably a random stroke is the same as if it were a piece of studied impertinence, and the effect is very marked. In fact, the thing from this point of view is as characteristic as it is obstreperous. As the new opera is said to be the most Parisian thing in Paris, so whoever is "held up" on his way down Nassau street by the head and shoulder of the Cable Building, swaggering into the empyrean over everything in sight, with, as it were, a cigar in its mouth, has to own that it is the most New Yorkish thing in New York. Of course the comparison is not favorable to us, but the



THE COMMERCIAL CABLE BUILDING.
Broad Street, New York City.

thing has the qualities of its defects and reeks of a rowdy picturesqueness like cowboy slang.

One cannot attribute this effect to the architect's intention, because for one thing the effect of a corner of the building from Nassau street was much less obvious beforehand than the effect of the conjunction of this building with the Manhattan Life, which, indeed, was so obvious as with difficulty to be overlooked. The Cable Building is virtually a production of the Manhattan Building eastward with an interruption in the form of New street. That is a fact of which it behooved the designer of the newer building to take account, but it is impossible to detect that he has taken any. He has recognized the

probable visibility of his south wall, as the designer of the Manhattan had done before him, not only by the use of a presentable material but by the introduction of some architectural device, especially towards the top. But the virtual continuity of the two he has not recognized by any conformity, either of material or of line. Such a recognition would have enhanced the effect of both buildings, but in fact what architecture appears upon the long side of the Cable Building, in projecting belts, continuous or interrupted is introduced at levels which make the collocation of the two buildings quite needlessly distressing. Neither have these horizontal lines anything to do with the composition of the Cable Building itself, nor do they establish any harmonious relation among its parts. They merely occur in an aimless way, so as to cut up a wall which is a mere thin and equable veneer, too thin to give any assurance of carrying itself and yet giving no indication of the actual structure. The Manhattan leaves something to be desired in that way, but, compared with its new neighbor, it is a very successful essay in the treatment of what is architecturally blank wall, and has a look of massiveness, sufficiency and organization. The belts really seem to tie it together, and the continuation of them across the recess, with the interpolated feature, is very well managed, whereas the recess on the flank of the Cable Building is not architecturally treated at all and counts only as a meaningless jog in a thin wall, which apparently might as well be all in one plane, since the adjoining of another tall building would close up the windows at the ends and leave the recess too shallow to be available for light. It cannot be said that the designer has not considered the distant view. It is for the benefit of the distant viewer that he has put a huge brass knob at either end of the top, giving his skyline two competing features in place of one dominant feature. One of these alone, as we have seen, from a point of view which is apparently accidental, so far as he is concerned, makes an effect of a swaggering and tumultuous kind. The two together make no effect at all, except of aggravating the incongruity between this building and its neighbor, the effect of which it might have improved and cumulated.

Except these things, the architecture is confined to the narrow slice of Broad street front. The top is scarcely apprehensible, and is certainly ineffectual from any point from which the substructure can be seen, and taken by itself is very awkward. The effect of swagger is produced by the topmost member, the brass bulb cut away to let in a double order, but below that there is no effect at all. The uncertainty about where the middle ends and the top begins is confusing and painful. As for the shaft, the central features of a balcony and a triple arch, whereby the architect has apparently attempted to relieve the monotony of nine equal and similar stories, the result of

his labor is that he has managed seriously to impair the effect the succession of stories would have had if he had left them alone, without substituting any other. Really it is only the five-story base which is well enough seen to count, and, unfortunately, this is extremely bad. Nothing more crude, unstudied and reckless, nothing that gives a stronger impression of architectural illiteracy, has been done in the high buildings, at the base of which the designer finds that he is repaid by appreciation for the most careful and scholarly design that he can produce. The crudity of this is really atrocious, and is its most noticeable quality, although there is not a notion here which would be worth a more respectful elaboration. What notions there are are mere freaks, such as the row of grotesques over the main archway with a cable (delightful pun) passed from mouth to mouth. Or the charming idea of jacketing Doric columns with squared ashlar between which the fluting may be discerned. Or the crowning device of giving a violent entasis to the piers thus designed, as if they had buckled under the superincumbent weight.

All this is quite beneath critical notice. And upon the whole the architecture of the series of buildings we have been considering is "either zero or a minus quantity." Why, then, does the producer of it go on producing and to produce? There can be but one answer. He gives owners what they want practically, and owners neither know nor care, so long as the architect does that, what he does artistically. At least if they know they do not care, and if they care they do not know. The moral of the result seems to be that architecture, in commercial buildings, is the architect's personal amusement. He must not indulge in it to the prejudice of practicality, but if he produces what his clients want, his architecture may be as good or as bad as it likes, without affecting his professional success. That seems to be the fact, and it is not without its encouraging side. For if clients do not interfere to prevent bad architecture neither do they interfere to prevent good.

A LONG-FELT WANT.

To the Editor of the "Architectural Record:":

IN behalf of the architectural profession I address you upon a subject of the greatest interest to all the busy members of that profession. They now find that much more of their time than they can afford is spent over drawing-boards, and much more of their commissions than they can afford is laid out upon draughtsmen. This is a time of eager competition, and in order that an architect may live it is absolutely necessary that he should spend most of his time in looking out for profitable work. If you will pardon the vulgar expression, he must "hustle for a living." If he stays in his office, in the old-fashioned way, and puts in his time in supervising the work of his draughtsmen, he is sure to fall behind. More than that, if he has any important work on hand, his time is taken up in conversation and correspondence with a host of contractors and material men. If it is a commercial building he is engaged on, he is liable to an almost daily hounding by his client to quicken the rate at which the work is going forward. His professional reputation is at stake in getting the building done at the earliest possible moment, and he has a natural and laudable ambition to beat the record for speed in buildings of the same class and size. For professional purposes every hour that he spends over a drawing-board is lost to him. To a busy architect nothing can be more ridiculous than the clamor of ignorant laymen for an "original style of architecture," as if he had nothing else to think about than design. The people who expect such an architect to be pottering over the architectural detail of his buildings simply do not know what they are talking about. If he devoted his time to design he would have nothing to design; and what good would his designs do anybody?

Architects know, what the public does not seem to have found out, that the recent classic revival has not been a matter of choice, but of necessity. If the most popular and successful architects had undertaken to work in any style in which they had to design, or even to adapt their own detail, they would have delayed their work so as to lose their reputations as business men, and they would not have had any time or any money left for themselves, what with pottering over details and the increased expenses of their draughting-rooms, which with the utmost economy threaten to eat up all their profits, even as it is. I suppose it would not be fair to describe the classical revival

as a modern invention. If it were, I should have no hesitation in pronouncing it one of the greatest labor-saving inventions of the age. If we were still doing Gothic or Romanesque, an architect would have no time to himself at all. Since the classic revival has been introduced by the efforts of the architects, it is possible for an architect to snatch a brief respite from professional cares. As soon as his work is done and he has secured a profitable commission, having laid out his building and designated the style, he can take a trip to Europe and leave the detail to the boys.

But, even so, he often finds himself disappointed in the effect of his work, if I may call it so. The classic formulas are, as I have said, the greatest labor-saving devices of which the history of architecture gives any account. But they do not go far enough, and this is a subject upon which I venture to address you. Though the architect need not bother himself with the design of his detail, he has to fix the scale of it for himself according to the distance from the eye and the direction, and this gives him an immense deal of perfectly unnecessary trouble, in which, moreover, he often has his labor for his pains, and finds that the effect is not at all what he expected. Detail is too big or too small, ornaments excessive or minute, modillions look huddled or scattered. Every practitioner of classic architecture knows what a drawback this is. It is a very serious drawback, because even laymen find the work disappointing, although they do not know why. It is all very well to tell them that the thing is correct and according to rule. In extreme cases you may even venture to show them the formula according to which it is concocted, although, as a rule, this course is not to be recommended, for when you show your recipe what becomes of your genius? But it is of no use to tell them that the thing is right if it does not look right. After all, the public is our paymaster, and it is the public that has to be pleased. If it can be pleased with compilations of classic and Renaissance detail, or with reproductions of old buildings, all the better for us. We can get our livings so much easier and cheaper. We have managed to persuade a large part of the public that it takes more genius to compile or to reproduce than it does to design, and if we can keep it in that docile frame of mind the future of fashionable architects is assured. As to the future of fashionable architecture, that is not our business. As I was reading the other day in Stevenson, "words cannot describe how much more important it is that a man should support his family than that he should attain to or preserve distinction in the arts." Those are my sentiments, and I am sure they are those of the profession in general. Certainly they are those of almost every successful practitioner of my acquaintance. The classic revival, if it can be kept up, offers to architects the means of supporting their families with the least expenditure of time in design and of money in office

expenses. This consideration is having increasing weight with members of the profession who have heretofore worked in free architecture, which compelled them to design their own detail, and they are gradually coming over into the classic camp. I met one the other day who is known for his work in Romanesque and Gothic, and he announced to me his conversion, and said that he found he much preferred to work in classic. Of course, I was pleased, and asked what had changed him. "Oh," he said, "classic is such a soft snap!" The slang, I beg to assure you, is his, not mine.

But, as I say, it is evident that our paymaster, the public, must be kept good-natured if the present promising condition of architecture is to be maintained, and that it shall be pleased with the results of our labors. This can be attained only if we can get our classic detail reasonably right in scale, so that it may be effective without being unduly prominent. At present, after spending upon the adjustment of it time which we can ill afford to spare we find, especially in tall buildings, that we have made a mistake on one side or the other; that the detail either does not tell at all, or tells altogether too much. And at the best, when it is most successful, it is all a matter of guesswork.

There is no necessity that this should be so. Of course, the degree to which any given detail should be enlarged to be effective at a given distance from the eye is susceptible of mathematical demonstration, and also the modifications that should be made in it to allow for the foreshortening so that it will look right when it is to be placed high in the air, and to be seen at an acute angle. I do not profess to be able to make the computation myself. I am not a scientific man. I am an artist. But the thing can be done, and it ought to be done. I have no doubt that a series of curves could be constructed showing exactly by what percentage a given detail should be magnified, and how it should be modified, at each point on the curve. A manual giving this information in regard to all the classic detail in common use, under the title, say, of "Modern Architecture Focussed," would be the greatest possible boon to the profession. It would at once become the vade mecum of every practitioner of classic architecture, and, as a labor-saving invention for the use of architects, would rank second only to the classic revival itself, of which it is the necessary sequel and completion.

Yours, for the good cause,

A CLASSIC.

BOOK REVIEWS.

SOME ARTISTS AT THE FAIR : Frank D. Millet, Will H. Low, J. A. Mitchell, W. Hamilton Gibson, F. Hopkinson Smith. New York: Charles Scribner's Sons. 1893. Pp. XI., 123.

After the lapse of nearly three years it seems still desirable to insist upon a little book which preserves for us some memory of what was best at the Chicago World's Fair of 1893. That something was undoubtedly the decoration in sculpture and in painting, and as that has nearly all perished, such record as is given in this small book should be the more carefully preserved. There are several large subscription books devoted to the Exposition, and these, none of them, ignore the artistic decoration of the Great Show, but as they give very little of it in proportion to their size and cost, the small and entirely accessible book, is more to our present purpose.

Mr. F. D. Millet's paper is, of course, the most important one of the five in this connection. It is he who has entitled his article "The Decoration of the Exposition," and this article alone occupies nearly half of the space contained in the little book we are considering. It has, too, fifteen illustrations, of which all, or all but one or two, are of very great value and deserve permanent preservation. It is certain that such a body of decorative work as was in place at Chicago in 1893 would have received, had it been put up in France or Germany, the honors of a special publication, with large illustrations perpetuating the memory of every great combination and every important detail.

Mr. Millet's article was written with the enthusiasm natural to the occasion. What it has to say about the purely architectural designs of the buildings should be compared with the criticisms made by foreign, and especially French artists, as printed in their own journals. The unending shower of cold water which these latter contributed is really needed to quench the too glowing laudation bestowed upon the plaster facades of the Court of Honor. Every word which Mr. Millet gives to the

painting and sculpture of the Exposition is to be received, on the other hand, with that respect which is due to the opinions of an expert: to the dicta pronounced upon the arts well known to him, of one of the first of our living artists. It is not meant that Mr. Millet has tried to make a critical article of his paper. He would be the first to disclaim that and to urge that what he had written was partly in advance of the realized fact and partly mere record; the words, perhaps, being somewhat perfunctory. That does not interfere with our appreciation of the article in question. What Mr. Millet thought it best to say of the works of art he found it desirable to select for comment, and of the tendencies which he noted and thought it desirable to note—these are matters which it is important to keep in mind. If there were a larger and more adequate book preserving the record of these important pieces of painting and sculpture, it would, perhaps, not occur to us to examine this brief one and to select it for comment at this late day, but there is no such book, and the few pages given here, with their dozen and a half illustrations of those works of art, is all that most people can own and preserve as a relic of the important combination of decorative art which was lavished on those perishable structures, which, indeed have already perished.

A Text-Book of the History of Sculpture, by Allan Marquand, Ph. D., L. H. D., and Arthur L. Frothingham, Jr., Ph. D., professors of archaeology and the history of art, in Princeton University. New York: Longmans, Green & Co., 1896.

This book suffers, of course, from the conditions of its being. Of 286 available pages, 113 half-tone figures take up the space of at least fifty pages, and in what remains, an attempt is made to cover the whole vast field from Egyptian antiquity of the early Empire down to the work of George Gray Barnard, exhibited in the Legerot Garden three months ago. The book is written with that very purpose, to tell the public that there was sculp-

ture in early Egypt, in later Egypt, in Assyria 700 years B. C., in Western Asia from 700 to 400 B. C., in Greece before the historic time, and so on from epoch to epoch, from land to land; that there was a sculpture in each of these regions and each of these times, and what, in a general way, that sculpture was like. "To tell the public," has been said above, but the well-informed student of art, who is not exactly "the public," will find enough in these pages to surprise him. This, indeed, is inevitable. Who is so well-informed that he may not be surprised by the reading of some of the statements made in this book, which statements, however, are capable of demonstration? While every student of the subject has his favorite epoch, in which he thinks himself a discoverer and a principal authority, other epochs and styles will be less known to him, as is inevitable; and what there is admirable about this book is that such an enthusiastic student as we have imagined, is pretty sure to be surprised at once by the appearance of something about his own particular department, and also by the appearance of facts new to him and conclusions which he had not ventured to reach. In other words, the little book is remarkably complete. It really covers the ground, and this is a statement which it is a pleasure to have to make.

That which satisfies the reader the least is the chapter on American sculpture, but this was to be expected. Twelve pages was proportionately a good deal to allow for the forty years of American sculpture plus the occasional moments before that epoch when a single work of art was produced, and yet, in these twelve pages a great many names had to be mentioned, and the work of the sculptors in some sense appraised. This is where the insuperable difficulty has appeared. That one sculptor of great ability and celebrity should be merely mentioned while one of less renown, much younger, and in the opinion of many, less meritorious, should receive a half page of comment is merely the carrying out of peculiarities of opinion; it is not that, but the hopelessness of qualifying each artist in his turn in the few words allowed him which makes this chapter so unsatisfactory. In the work of other times, removed from us by even a few years, and in the work of other lands than our own, some general qualification may be and is attempted; moreover, the perspective which time and distance afford us gives to the student a natural and easy grouping which allows him comment where it is most called for. Our American work is too near to us to allow of this. Who shall dis-

tribute our sculptors in groups and speak of them otherwise than as separate and detached individualities?

The tone of criticism is excellent. But a few words could be given to those general remarks in which criticism of a school or an epoch can best be conveyed, but those few words are almost always the best words possible. Since the criticism is good, it stands to reason, considering the sense in which the word criticism has come to be employed, that the knowledge of technical methods, the discrimination between different styles of modeling and the insight into artistic significance are all of marked excellence. Indeed, the text of this book shows to one who will read it with the close care which so compressed a piece of writing requires, this equipment for the task completely embodied in the resulting work. The paragraph beginning with the words "Technical Methods," on page 76, should be read with minute care down to the end of the Chapter, as an instance of what is here meant. It has proved impracticable to make a selection for quotation here, and three pages and a half, even of this small book, are too much to reprint in our columns; but if one wants to know in brief what the Greeks meant by their sculpture and how they expressed their meaning, and if he is prepared to read these two or three pages over and over again several times until their exact sense has forced itself upon him, he will know more about Greek sculpture than was the lot of any one until these recent years had brought with them the possibility of a real insight into the significance of Grecian art. Much of the same excellence of appreciation is to be found in the analysis of mediæval sculpture. The paragraph at the beginning of Chapter XIV. may here be reprinted in part as an introduction to the subject, "General Characteristics." "The most characteristic fact about the development of art from the rise of Christianity to the Renaissance in the fifteenth century was the supremacy of architecture. The aesthetic qualities involved in love of beauty, orderly symmetry, and artistic form, in poetic conceptions and exuberance of imagination, all have their outlet in architecture. In painting, not external beauty but internal significance, was required. Sculpture, on the other hand, was not used either as a medium for teaching, as painting was, or, like architecture, as an aesthetic vehicle. It therefore played a very secondary part, and not until the close of the twelfth century did it begin to resume its old part as an important factor in the development of art. The Gothic Cathed-

dral paved the way for the Renaissance." This excellent statement of the case is followed by an examination of early Christian sculpture, including Byzantine work, and that is followed in its turn by Chapters XV., XVI., etc., in which the mediæval sculpture of Italy, France and other nations of Europe is treated. In these few pages there is to be found the best and most satisfactory analysis of mediæval sculpture which the present writer has ever had the pleasure of reading.

A HANDBOOK OF GREEK SCULPTURE. By Ernest Arthur Gardner, M. A., late Fellow of Gonville and Caius College, Cambridge, and formerly Director of the British School of Archaeology at Athens; Yates Professor of Archaeology in University College, London. Part II.; pp. xvii., 267-552. London: Macmillan & Co. New York: The Macmillan Co. 1897. \$1.25.

In No. 21 of this Journal (Vol. VI., page 89) the first part of this valuable Handbook was reviewed. The present volume, which completes the work, begins in the middle of Chapter III., and in the middle of the fifth century B. C. The first few pages are thus naturally devoted to the necessarily full description and analysis of the sculptures of the Parthenon. The treatment of these is extremely just and sober. The probabilities of attribution are insisted on with sufficient force to show the writer's convictions, while they are not treated as if capable of positive verification. The only exception worthy of note is the positive statement that the frieze on the cella wall represents the Panathenaic procession; but this is so much the most usual explanation given of this frieze that such a statement may be passed as reasonable enough. It has been said that this is the only exception; it includes, however, several minor ones. Thus, the list of the gods in the frieze is given with a little more approach to positive assertion than is quite safe, and the objects carried on their heads by the two attendants of the priestess in the centre of the eastern frieze are called stools, without allusion to the other explanations that have been given. A complete account of the frieze would require, also, mention of those details which are not possible to understand and which evidently were made out in painting in completion of the sculptured forms. It may be said in this connection that Mr. Gardner is less interested in the matter of the painting of Greek sculpture than one would expect of so enthusiastic a student. What is said on page 430 does, indeed, make partial amends. Here, in connection with the recently discovered sarcophagi of Sidon, he uses the words: "no one who has not seen this

sarcophagus can realize the effect produced by a correct and artistic application of color to sculpture." In that case, as in the statues found on the Acropolis in 1885-1886, color was present and plainly visible. The investigation of students, to whom this painting of antique sculpture has been a matter of great interest, show that in many a work not now painted, color was used to complete the design and even to explain the dress, the ornaments, the utensils, even the drapery itself. To us who never see painted sculpture; that is to say, sculpture intended from the beginning to be polychromatic and designed accordingly, it is hard to realize how completely it is within the power and within the range of an able artist to combine color effect with solid form, especially with sculpture in relief. It is not for a moment to be supposed that Mr. Gardner is indifferent to the most fascinating subject, but it may be reasonable to regret that he has not treated it somewhat more at length.

The treatment of the Athenian burial slabs, to which Mr. Percy Gardner has devoted the important monograph reviewed in our last number, in here brief, but, perhaps, as full as the relative importance of the subject admits in so small a book as this. It seems impossible to shake the feeling of the modern student that statues are in some way more important than sculpture in relief, and accordingly the Dexileos tombstone and the Hegeso tombstone, the only sepulchre reliefs of which illustrations are given, would not be alone if equally valuable sculpture in the round were in question. The few words which are given to the tombstones, two pages and a-half in all, are excellent; but inasmuch as all these tombstones, with the exception of two or three, are in the comparatively remote Museum of Athens, it seems a pity that they are not insisted on a little more strongly in order that the world of students may become more interested in them.

This leads to observation of the chief defect from which the book seems to suffer, a certain willingness to accept the popular, or presumably popular, judgment as to the relative importance of works of art, and to yield rather willingly to the pressure which popular demand for information may be supposed to exert upon the scholar who is supposed to supply the demand. The fact that people want to know about statues in our museums may almost be said to constitute, in the eyes of the maker of this book, a reason for the fuller explanation of these works, while the far less known but important works of art remain with

but little explanation. In connection with this, there may be mentioned a certain lack of boldness in departing from the received description of the gallery pieces. Thus, the Farnese Bull, as it is called, that is to say, the group of the Torture of Dirce, in the Naples Museum, is, in reality, more nearly a sixteenth century than an antique sculpture on account of the very elaborate restoration which it has undergone. No one of the four human bodies can be said to be certainly in its right position, and of them, at least one is in a seemingly impossible position. The bull's attitude is questionable, the dog is entirely new, and the whole group is known to have been so far modified as to allow of its being used in connection with a fountain. Now, to treat such a group as this through a page of critical examination and to infer anything positive from it with relation to the school to which it belongs, seems an error of the gravest kind. To weigh the value of this book as a piece of evidence against the value of a wholly un-restored and comparatively perfect piece, is an error somewhat akin to the acceptance of the Laocoon in its modern and restored form, that is to say, with the right arm of the father extended, carrying the folds of the serpent with it. The only safe rule in connection with antique sculpture is to strip the restored piece, in imagination, of all its restorations, and to see what the fragment which has not been touched has to say to us. Mr. Gardner is quite aware of this. In his introduction, pages 9 and 10, he speaks of the restoration of antique sculpture exactly as it should be spoken of; and, yet, the pieces discovered during the last fifty years and absolutely unaltered in surface as well as in general attitude and action, do not receive in these pages, which treat of the later schools, that comparatively respectful treatment which they deserve. What is meant is this: that such a statue as the Hermes of Olympia, which has not been touched by the restorer; or the Apoxyomenos, in the Braccio Nuovo of the Vatican, in which only some of the fingers have been denaturalized; or the Venus of the Capitol, in which the tip of the nose and also some fingers are new; or the headless, draped Niobe in the Chiaramonti Gallery of the Vatican; or the Venus of Milo, in which only the exact slope of the torso is doubtful; or all that is set up and admitted as belonging to the work of the Victory of Samothrace, as untouched as the Hermes—that these works, and such as these, are alone worthy of careful and minute study and of serving as examples from which to draw positive lessons of history or of art. In the matter of relief sculpture, too, not a word is said about

the extraordinarily elaborate restorations which have been given to these Hellenistic pictorial reliefs, to which the author has rightly given considerable attention. Professor Schreiber, whose important work on this subject is constantly cited by our author, says nothing of these restorations because he gives them in the fullest way in his plates, each of his photographic reproductions being accompanied by an outline on semi-transparent paper which laid upon the photograph shows accurately what parts are new. In fact, the whole study of the Hellenistic and Græco-Roman sculpture is modified by the question, which should precede all other questions, as to the authenticity of the pieces themselves. One reason why the Pergamene frieze has been such a prodigious help to all students is that here we have Hellenistic sculpture in relief on a very grand scale, and not restored at all. No doubt it might be argued in behalf of the treatment given to the subject in this book that there has not been room to discuss these opinions. The objection to treating the subject without discussing these opinions is that the student has a right to know what the works of art amounted to, which works of art are given him as examples of schools named and criticized and embodiments of principles discussed. If he finds, as he is sure to find, that some of the most important and apparently accepted of these authorities are really non-existent, having as much modern as ancient spirit in their composition as they now exist, he will dispute the whole doctrine of the book and be too apt to reject the teaching which may well be got in spite of its faulty basis.

Roman sculpture receives less attention than could be wished; but that the title of the book expressly excludes it. We do not find any mention of those remarkable reliefs which, in Trajan's time and in the time of Marcus Aurelius give us an almost Grecian dignity together with their Roman narrative or pictorial power. The sculptures on the Column of Trajan and its copy, the Column of Aurelius, are not the only historical reliefs of the time. Those which are now in the Lateran are even more important as aids in the study of Roman art. It is true that but little attention has been given to Roman sculpture of the Empire and that little of it remains which compares in interest with that of earlier epochs. The neglect of it in the present work is, therefore, not remarkable. It is only to be commented on as one more evidence of that reluctance to treat the subject in a somewhat original and personal way, which is hardly to be blamed, but should be mentioned as a characteristic of the book before us.