A-B-C OF ARCHITECTURE

FRANK E. WALLIS

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ARCHITECTURE

BY

FRANK E. WALLIS

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INTRODUCTION

THIS little book is written for those inquisitive folk who wish to know the periods or styles in architecture and the relation which they bear to one another; why one of these periods is called Greek and another Roman or Gothic; or why, perchance, it carries the name of a reigning monarch.

Its intention is simple, and its author desires to so explain the ancient art with a small portion of its grammar, together with its general history, that the layman may be tempted to extend his explorations in the delightful fields of architectural art, and may find a keener enjoyment in contemplating its concrete examples.

The endeavor will be made to simplify the rules and laws of architecture so that its basic principles can be understood, and the

reader may be counseled to confine himself to the study of these general rules, and not look for a complete and cyclopedic exposition of the subtleties and the delicate variations of the art as the practitioner must know it; though it is an art which must be of direct interest to all men, since all men are affected by it in one degree or another.

While a few principles remain constant throughout successive styles or periods, there are variations in the details and in the method of their application. There are also intermediate or transitional periods which belong to an earlier or to a successive type, or both; or perchance this transitional period may be considered by experts as a distinct style.

When we consider the question of naming these distinct and individual styles we must remember that when the type was in process of creation it had no name, being the common property of the time and built up in harmony with the thoughts and the traditions of its creators. In addition to this we must also realize that each gradation or change in style depended more or less on that method which preceded it or on that which neighbored it.

The form of the construction, of the modeling, and of the details was largely influenced by the material employed; a coarse-grained

granite could not be used as marble was used, nor could the countries where only clay was found create an architectural type which would correspond with that characteristic of a timbered country. Then again, geographical conditions affected the manners of the styles in very much the same way as they affected the tones of the spoken language or colored the religion with gentle or with harsh ideals.

The ancient art, as we accept it, had its beginnings on the shores of the Mediterranean Sea, and its modeled forms were affected by the light of the Mediterranean sun and by the atmosphere of the eternally blue sky; while in more northern countries, the contours of the various parts were changed from the earlier forms to conform to the harsher natural conditions of wind and weather.

There is another influence that is too frequently overlooked by the historian of the art of architecture, an influence of the most supreme importance and one that has had a tremendous effect on the forms and proportions of the mass of the building and on the outline and curve of the moldings and smaller parts, as well as on the method and manner of decorations. That influence is the growth

of trade or commerce, together with its natural interchange of ideas and ideals, its transmission of methods, its bartering of decorated and ornamented goods, and its exploitation of minerals and other crude materials.

The reader can easily comprehend how the culture of the far East must have first annoyed and then interested those earlier Egyptians who exchanged raw material and ideals with the merchants from the mysterious Orient. It is instructive to note how Nineveh and Babylon, for a long time satisfied with the position of the middle ground, finally took unto themselves the terminal profits, transshipping from Tyre and the seacoast cities, but collecting taxes on the transportation, until Greece, wise in her day, disturbed the trade of the Persians by cutting the route, so that the wealth of the East and the raw materials of the West paid toll to Greece. Through the period of the Roman dominations trade moved about as it saw fit, only accepting the easier water routes where they were practicable.

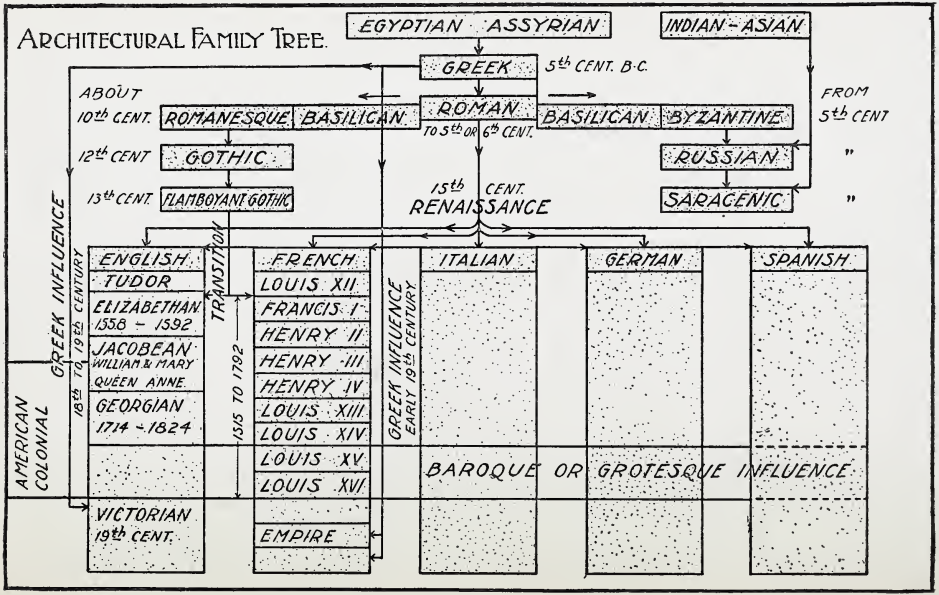
Marseilles, Genoa, and Venice became the natural ports of entry into the wild and undeveloped north, with the mines of the Black Mountains and of the British Isles as the

western end of this great chain of trade. From the port of Marseilles the Phœnicians sent their buyers over the country of France to seek out the origin of the tin-mines and the source of trade in the north. While rivers were of assistance in these adventures, the Alps were always a handicap to trade by the way of the Adriatic and Venice and Genoa; so that, when the fall of the Roman Empire occurred, its first province in France (called Provence to-day) became the natural highway for traders; and here we find the first examples of architectural design in France since the classic period, an expression which was made possible through success in trade along these natural routes.

This will explain in some measure why the nation which we to-day call France was able to develop the necessary ideas and to gain the lead on all the other nations of Europe in architectural expression. Trade passed by the way of the western France, and art prospered in consequence, until that great movement of the Turk from the steppes of Siberia culminated in the capture of Constantinople and the cutting off of all traffic from the East by way of the Mediterranean; when, in a most natural and easily understood division, the greater part of this great trade

exchange switched its course to the north on the eastern side of the barrier erected by the Turks; and so Moscow was founded as a station in much the same fashion as Ninevah and Babylon. This trade route, leaving Moscow and seeking the sea-coast and the mines of Germany and England, passed through the great country which we now know as Germany, creating on its way the commercial cities which since this earlier time have struggled to maintain themselves as terminals where goods must be transshipped and additional taxes collected.

The reader must remember that France had developed steadily through her Norman and Gothic period and that she had a share in the profits of the transshipments and customs because of the closing up of the Dardanelles by the Turks. Meanwhile Moscow, Berlin, and Hamburg were passing through their formative period and had not reached the same high state of artistic cultivation. This explains why other nations borrowed the arts from France, and it also explains why many of the primitive forms of decoration and ornament were used in the crude north in an unsophisticated manner long before the French had brought them to a final refinement.


ARCHITECTURAL FAMILY TREE.
EGYPTIAN
ASSYRIAN
INDIAN - ASIAN
GREEK
5th CENT. B.C.
ABOUT
10th CENT.
ROMANESQUE
BASILICAN
ROMAN
BASILICAN
BYZANTINE
TO 5th OR 6th CENT.
FROM
5th CENT
12th CENT
GOTHIC
RUSSIAN
"
13th CENT.
FLAMBOYANT GOTHIC
15th CENT.
RENAISSANCE
SARACENIC
"
GREEK INFLUENCE
18th TO 19th CENTURY
TRANSITION
1515 TO 1792
GREEK INFLUENCE
EARLY 19th CENTURY
AMERICAN COLONIAL
ENGLISH
TUDOR
ELIZABETHAN
1558 - 1592
JACOBEAN
WILLIAM & MARY
QUEEN ANNE
GEORGIAN
1714 - 1824
VICTORIAN
19th CENT.
FRENCH
LOUIS XII
FRANCIS I
HENRY II
HENRY III
HENRY IV
LOUIS XIII
LOUIS XIV
LOUIS XV
LOUIS XVI
EMPIRE
ITALIAN
GERMAN
SPANISH
BAROQUE OR GROTESQUE INFLUENCE

There are but two distinct master types or styles, and all others which we consider to-day as distinct styles are only variations of these two fundamental types. The first or southern method of expression in architecture is that of the Classic era, and it is so called. It is a horizontal type with a post-and-beam or lintel method of construction.

The second master type is of northern origin and was called Gothic, or barbaric, by the earlier Italian people; and so we accept it as the generic name of this pointed-arch-and-buttress type, the perpendicular composition dominating the earlier horizontal line of the Classic period.

The family tree is inserted for the purpose of explaining the relation which one expression or style bears to another. It cannot be exact, since there are many offshoots and local differences in the style which have their own labels and many transitions which overlap the preceding style partially, though not completely. In some parts of the country the change antedates that which occurs in others.

The ancient civilization of India, of Egypt, and of Assyria, together with the lands behind and beyond the frontispiece of Asia, developed methods of expression in architec-

ture which were peculiar to their ideals, and which are natural and native in their own environment. But they are foreign to and not easily absorbed by the art of the later civilization which we have accepted as our own, and they are distinct and different in every sense from that of the old time beyond the Greek era. Water and oil will not mix, nor will the motifs or parts of the architectural expression of the very ancient world of the East blend themselves with those which the Greeks have imposed upon us.

There can be no story of Asian architecture which would appeal to us of modern times or that would be comprehended by the layman in the short journey in architectural expression which a volume of this size imposes upon us.

That many of the decorative forms which we use in architecture had their origin in the days antedating the Greek Classic is true; moreover, the general laws of nature apply in all times and under all conditions. The ancient, as well as the modern, had to consider the problem of support, and each is bound by the inherent feeling of harmony and proportion which builders in all time have felt.

In these earlier days structural expression

depended upon the material at hand, whether stones or clay or timber, and the forms and masses were designed with direct reference to the light of the sun; they were coarse or gentle according to the amount of sunlight and the texture of the material. Since the first laws of design require that the style of the composition must depend upon the material which is used and on the atmosphere which either bathes it in perpetual light or subdues it with dimness or clouds, so the world in Asia created its architecture by exactly the same method as we ourselves have done. But the people of the far East are entirely foreign to us, and their methods of application and their symbolism, their personal and race idealism, are not for our present consideration.

We can recognize, however, some of the structural forms and methods which were used in Egypt and along the valley of the Euphrates as the natural ancestor of the Greek, although the aristocratic descendant so far surpassed the Egyptian as to create an entirely new architectural line, and itself became the progenitor of a distinct and distinguished family in style.

The reader will add materially to his appreciation of the ancient architecture by re-

ferring to the historical maps of the Century Dictionary, which show the extent and habitat of these earlier civilizations. The Egyptians with the earlier trade control, and their consequent wealth, built their palaces, tombs, and temples, according to their ideals, using the materials of the country, coarse-grained sandstone, and heavy and somber granite. They used the natural plant life, such as the lotus and the papyrus, for decorative purposes. They carved few moldings and they used only simple curves because of the coarseness of the texture in the stone; they depended on the mass and the gigantic scale for their effects. Very naturally they were compelled to employ the post or column and the cross-beam or lintel for their construction in all cases where the plain wall was not in use; and these columns and walls were decorated with outline drawings in low relief, frequently with an all-over pattern of interlaced or basket design, with pigments of various colors for decorative purposes. While it is believed that this column-and-lintel type fathered that which was used by the Greeks in their later architecture, the reader can appreciate the fact that a post of either wood or stone is structurally normal and natural, and the only possible way to sup-

port a roof or any sort of superstructure when the wall is not used; therefore these Egyptians were not in any degree the progenitors of the style developed by the latter-day people on the northern shores of the Mediterranean Sea; nor did they seriously affect the architecture of the Assyrians or Persians in Asia Minor, for in the days of trade control and prosperity which succeeded the Egyptian era, the Assyrians, builders of great temples, were limited to the use of clay for their architectural expression, and clay always means brick or terra-cotta with the ornaments modeled in low relief. Where clay is used, there must be a wider range in ornamental forms and decorations, since it is a freer medium than stone, and the personal ideals of these people were also affected by the material. Scrolls, interlaced patterns, and low-toned lines with modeled animals and kings were used as decorations, with natural plant life for ornaments, resulting in a type which is so far removed from the Egyptian style of expression in granite that it seems unnecessary to dwell further upon the subject.

Here in Assyria we find a style or type with glazed and colored terra-cotta which the modern has failed to surpass. That

this period of latter-day greatness in Assyria overlapped the earlier days of the Greek clans, history proves to us in the stories of the wars between the two races.

The folk-lore story of Jason and his search for the Golden Fleece is an allegorical tale of the early commercial wars and the struggle for trade supremacy. Jason and his followers searched the trade routes of the ancient seas and traversed the rivers in their quest for the Fleece which is a symbol of the profits of trade.

The shores of the Black and the Ægean seas and their many islands were covered with Greek villages and towns, and the seas were dotted with the ships of Greek traders for hundreds of years before the finished architecture of their temples became possible. They expressed themselves in their glorification of the gods according to their peculiar racial instincts. Meanwhile, they were growing into a power that eventually controlled the world; they throttled the Persian trader and commandeered his profits until Darius and his mighty army, in an effort to save themselves from obliteration, began the great war.

The Persian War failed to block this progression, and Greece, influenced in its earlier

days by the terra-cotta architecture and the coloring of the Assyrians, began its climb to that great artistic apex which it reached under Pericles in the Golden Age. In the earlier days of this upward curve of the Greeks they built with clay and colored terra-cotta, and this period continued until the discovery of the great marble-quarries; then slowly but surely the use of this finely grained stone compelled a change in the structural methods and in the ornamental forms.

Before we continue the story of the Greeks we should like to have the reader remember that there is an active culture and a living method of expression still existent in Asia Minor. In the days which followed the downfall and disintegration of the Greek power under the Byzantine emperors, we find that the survival of these ancient Assyrian forms had more or less influence on the growth of that later period. The archæologists who are excavating the ancient cities of Asia Minor have found architectural expressions and details which we might call Byzantine, although this period antedated the Byzantine by many hundred years. While the march of civilization continued toward the west, these moribund Eastern countries did not die, nor was their art ob-

literated. They still had their gods to whom temples must be erected, and tombs must continue to be built to honor their dead; the vitality which belongs to leadership had disappeared, but humanity and its desire for emotional expression survived.

While the leadership in architectural science remained with the successful traders, who were at this time the Greek race, the crown fell in turn to the Roman and to the Frank. There has been no permanent style in architecture created by these Eastern countries, except that which we call Byzantine, and this came into existence only after the downfall of the Greek power; this Byzantine style affected successively the architecture of the Saracens and of the Russians.

CHAPTER I

THE GREEK CLASSIC

TYPE: *Post and Lintel.*
MATERIAL: *Early, Terra-cotta; later, Marble.*
FOREBEARS: *Assyrian and Egyptian.*
HABITAT: *Present Greece, Black Sea, Grecian Sea, and some portions of Asia Minor.*
DESCENDANTS: *Later Greek, Byzantine in the East, Roman in the West.*

IN considering the Greek Classic we cannot enter into a long discussion of the earlier discoveries and the various changes or transitions which took place, and which are historical links between the period of the Persian power in the world and the domination of the Greeks.

That the shores of the Ægean Sea were covered with Grecian settlements, and that the islands were peopled with Greeks who followed the ideals of their own peculiar fancy and inheritance, is a well-known historical fact. We cannot, however, consider in detail any of these progressive expressions; we

wish only to have the reader comprehend that there has been little survival of written or spoken idealism; on the other hand, a great deal of the architectural and decorative expression of this fascinating period in civilization still remains for our consideration. We must remember that, preceding the period when Homer was supposed to have written the folk-lore stories of Ancient Greece, one could go back into history for a thousand years or more, during which time the civilization and culture of this race created monuments and works of art which still amaze the modern world. We have, therefore, a period of Greek art which covered a period greater than our own Christian era, and which overlapped that of Assyria and indeed some of the later Egyptian.

There was the domination of the mainland over the islands, and the control of one island over the minor island; there were changes in methods and overlapping transitions from one form to another. And there was also a climax, a decadence, and a renaissance such as we ourselves have had in our own Christian epoch. The native religion of the Greeks was entirely unlike the bloody and morbid fantasies of the earlier races in Asia Minor and Egypt, and the architecture

and decorative details of the temples reflected this new freedom in idealism. The gods and goddesses reigned over the land and the sea, over plant life, over love and motherhood, and over the business of the trader and of the warrior; as a consequence, temples were erected which voiced the pleasant human relation existing between these kindly deities and their beauty-loving worshipers.

The discovery of marble gave the Greeks a medium which far surpassed any material hitherto used in building. The stone could be found in large blocks for the column, and it was so delicate in its texture that the gentleness of the earlier Assyrian modeling in clay could be surpassed; moreover, it was so dense in its mass that the greatest load necessary could be imposed upon it. The earlier method of terra-cotta, with its highly colored surface, carried through the Greek transition and into the marble period; for it is well known that the Greeks colored their marble architecture with pigments of reds and yellows and blues. They had a supreme knowledge of the sweetness and purity of line, and they corrected linear defects by the transmission of light, or through the optical delusion created by parallel lines in the steps and other horizontal details of the temples,

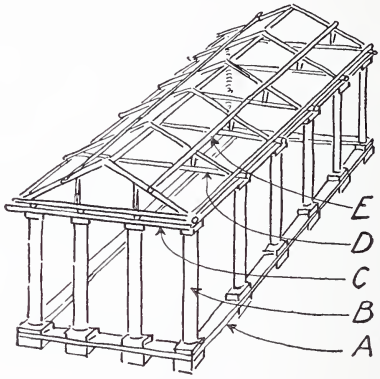
also in the upright lines of the columns, and in the relation which one column held to another. These subtleties of the Greek architects are still being discovered and analyzed by archæologists and architects, and they reflect the cleverness and keenness of this highly gifted people who seemed to have been blessed by the Almighty with wonderful temperament, self-control, and freedom from mental bondage, together with an ideal building material and a climate and sky which could not be surpassed for purity.

The post, or column, and the lintel, or entablature, are the fundamentals of the Greek Classic style, for while in the earlier days domes and arches were used, the Greeks rejected these in their fully developed architecture.

There is a very interesting likeness between the developed and glorified Greek Parthenon and the ordinary, primal method of construction. In order to explain this theory we will accept a commission to design and erect a barn or shed, with the understanding that the reader will assist us in the laying out of the scheme.

We wish to build a rough building about thirty feet wide by fifty feet long, and with a height of about fifteen feet. As we have

standing timber of sufficient size and growth to supply our needs, we will use the trunks of the trees for our framework, and we will begin by staking out the corners. Then we will cut timber for a sill or base course, A. After hewing this timber so that it has two flat sides, we bed it and level it with stones,

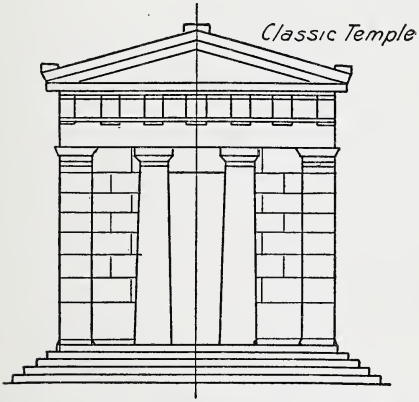


or with posts or piers, until we have the outline of the building laid out. The timbers must be halved and pinned together at the corners, so that the entire frame or outline is secure and rigid. Our next step will be to cut timber for the posts, B; this should be approximately sixteen inches in diameter at the base. The diameter at the top will be smaller; let us put it at fourteen inches. We

then cut the cross-tie, C, or the timber which afterward becomes the architrave under the Classic rule; this is needed for the support of the roof frame, and corresponds to the first sill timber, but is to be secured to the top of the posts. We then divide the longer side of the rectangle into six parts, as we wish a spacing or inter-columnation of ten feet between the posts; for this we require six columns on each side and two additional columns for each end between the corner posts. Now that we are ready to proceed with the setting of the post or column on the sill or base timber, we place a block of wood under the top timber or tie, C, the future architrave, and another block under the column resting on the sill or base piece, A. This we do to prevent the load of the roof from splitting the post. When this frame is finished we have all of the fundamentals of the walls of the Greek temple, with the column or post and its crude base, the bottom block, and the capital, or the top block. The architrave, or tie, C, binds them together at the top, and the undeveloped pedestal or small piece of wall under the base or sill piece fills in the irregularities of the ground so that the base may be level, with the sill, A, binding the plan together. As the width

or span of the building is rather great (thirty feet) for a cross-timber, we devise a method of equalizing the load of the roof by using the direct support of the outer posts and adding two additional posts in the interior of the building; we then place a thirty-three-foot timber, D, crosswise, supported on each extremity by the outer post and by the two posts in the interior of the building, with the ends projecting over the face of the architrave, or tie, C. Imposed upon the ends of this cross-timber we parallel the tie or architrave, C, with a smaller timber continuing through all four sides of our building; and at one-third of the length of the timber, D, crossing from side to side, we place an upright, the length of which is determined by the slope of the roof; on the top of this upright we secure a small timber, or purlin, E, running parallel to the tie, C, at the side and at right angles to the cross-timbers of the roof truss. We have the truss, or main support of the roof in this cross-timber, the upright, the purlin, and the timber following the slope of the roof. This is strong enough to support itself and any additional load, transmitting this load to the post and the earth. On this truss we build with smaller timber or rafters, resting first on the timber

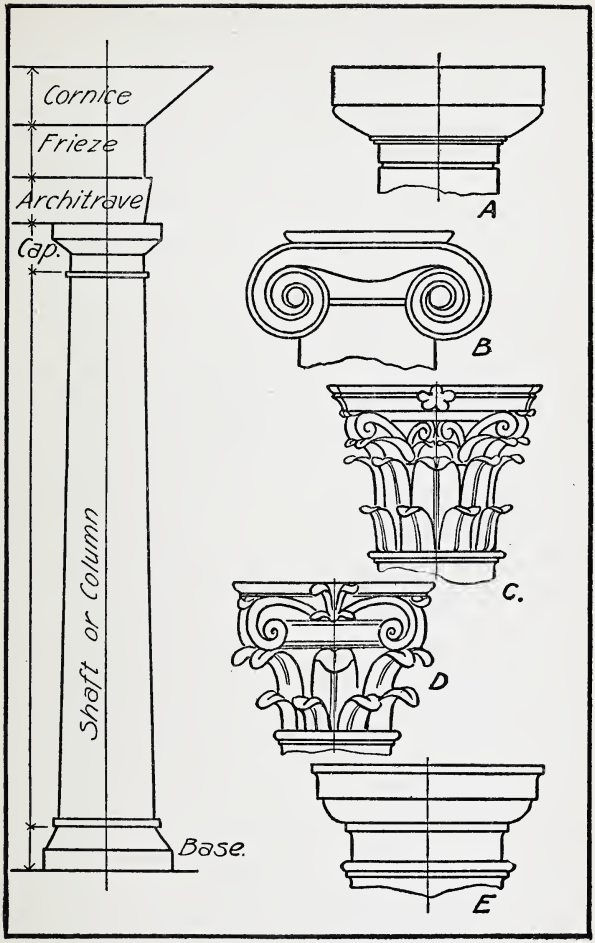
above the tie, or architrave, C, and projecting beyond the outer face of the posts to protect the side walls from the rain, thus forming a cornice over the face of the row of posts and the future wall, and afterward resting on the purlin, E, or the timber parallel to



the plate, and meeting at the center of the building, or at the ridge-pole.

Here you have the Greek temple in its beginning and in its crudest form. Consider how you will peel the bark from the posts, and hew the sides of the posts into some semblance of form; or, perchance, decorate them with perpendicular lines in paint, or cuts with a knife, in order to accent the idea of perpendicular support. How you will enjoy

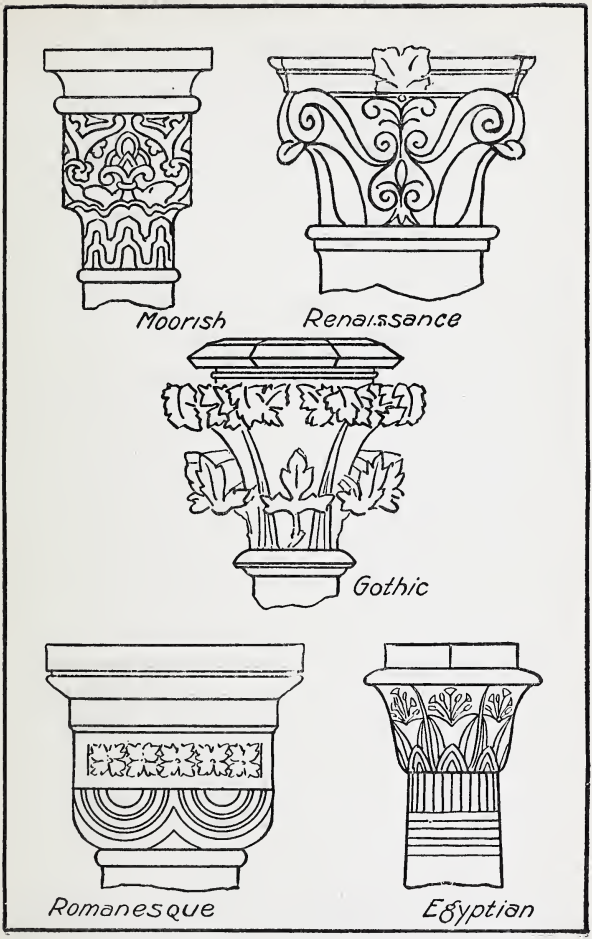
yourself in trimming the block at the top of the post and adding to its interest and its appearance of crowning the post by carving cross-lines or horns; again you must take the clumsiness out of the block at the bottom of the post by cutting its edge, or by making moldings of it. Undoubtedly you will be tempted to ornament the ends of the cross-timbers that project over each post, and the ends of the minor timbers or rafters above this timber which project and form the cornice, and to play with the board which you must use to cover the smaller holes between these rafters. Again, you will use the larger holes just over the tie between the ends of the truss to dry your hunting trophies, since you will naturally allow these holes to remain open for the passage of smoke. You will line the walls with boards or slabs, and you will most naturally do this on the inside of the posts, so that the roughness of the posts will not irritate your fair skin. When you have finished your building, you may enter into the presence of the gods, for now you have a Greek temple in its structural and natural beginnings. Such refinements as you or your children may give to this structure in later life will only add to the similitude, but you will still continue to use the


Cornice
Frieze
Architrave
Cap.
Shaft or Column
Base.
A
B
C.
D
E

sill, the post, and the plate, or tie, because they have conformed to the laws of nature, and because they will carry the weight of your roof to the ground.

These posts or columns, as they were used by the Greeks, have their own family name and their own personal characteristics; indeed, the details of the entire structure conform to some particular style or type or order. Of these orders the Greeks composed three distinct and different types. The Doric, called by the name of the Dorian Clan, A; the Ionic, B, from the Ionian Clan; and the Corinthian, C, which is supposed to have originated in the city of Corinth.

The Doric has no base. It is more sturdy than the other two in its form, and the capital has no decoration. The Ionic has both base (the block at the bottom of the post) and ornamented capital (the block at the top); moreover, there is a scroll at the corner or side of the square top, above the decorated portion, before it plays into the round of the column; the Corinthian has both base and capital rather more ornamented than the Ionic, and the capital is of greater height. Here you have natural plants or acanthus-leaves, in two rows, and at the upper corners of the capstone or abacus (the square por-



VARIATION IN CAPITALS

tion of the block over the ornament), there are small scrolls which grow from behind these leaves. The entablature,[1] with the architrave, the frieze, and the cornice, each possess their own peculiar and "order" characteristics. The ends of your rough truss become "triglyphs," being cut with three grooves, and the spaces are ornamented with carvings of shields and skulls, just as you originally placed your armor and your trophies in the open holes in order that the smoke and the heat of the interior should dry them.

Greece reached its architectural zenith under Pericles about 460 to 425 B.C., when the Parthenon was built on that marvelous acropolis in Athens; and this marked the high note of architectural expression in the ancient world.

When Greece succumbed to the insatiable Roman she bestowed upon her conquerors a culture and supreme expression which in turn captured and enslaved the Roman Empire, and her artists and artisans were employed by the Latins to the improvement

[1] The entablature is the entire portion of the building wall above the column cap; from the cap or block, there is first the architrave, then the plain portion with the holes, the frieze, and finally the overhanging portion, the cornice.

and the betterment of the Roman mode. We have no more Greek Classic, but its influence recurs again and again in the history of style, and we shall find in later days that the spirit of the Greek Classic is vital in its influences over the methods of expression in architecture.

CHAPTER II

THE ROMAN CLASSIC

TYPE: *Post and Lintel.*
MATERIAL: *Travertine, lava-stone, brick, and marble.*
FOREBEARS: *Etrurian.*
HABITAT: *Wherever the Roman Empire and Republic extended itself.*
DESCENDANTS: *Basilican, Romanesque, some Byzantine influences.*

THE Roman Classic originally flourished throughout the continent of Europe, in the British Isles, in the north of Africa, in the Spanish peninsula, and in Asia; in short, wherever the Roman Empire held its sway. In the south of France there are existing to-day many examples of this style in the form of aqueducts, viaducts, temples, and coliseums. Many of the earlier works were torn down for their building material, and many were destroyed through the sheer vandalism of fighting tribes.

The Roman Classic belongs to the post-

and-lintel type—that is, columns supporting stone beams or lintels of heavy masonry. The dome was employed for circular buildings, and barrel roofs with intersecting vaults were used in the Basilicas, or ancient law-courts, and in the baths; arches were used in the triumphal monuments.

Rome, being a world power in politics and trade, was universal and democratic in its use of material and forms. Nevertheless, we may consider the early Roman as a post-and-lintel type, since the architecture was more strongly influenced by the Greek Classic than by those other architectural forms which were adapted and developed for special purposes.

The two orders of architecture which are distinctly Roman and which form part of the five orders of Classic architecture are the Tuscan, so called from Tuscany, a district in Italy, E, page 25, and the Composite, a composition of Ionian and Corinthian, D, page 25. The Tuscan is a heavier and less cleverly designed type than the Doric of the Greek Classic, but it is an outgrowth of the earlier Etrurian examples; it is nearly similar to the Doric in its parts; the Composite is a combination of the Ionic scrolls, or volutes, and the Corinthian acanthus-leaves. The three Greek types or orders of

architecture were copied and modified by the Romans, until the Greek cleverness was lost and the Roman types became independent, though retaining a general family resemblance.

Grandeur and bigness, and a lavish use of marbles, metals, and color, together with ideas and ornaments looted from the more civilized conquered countries, are characteristics of the Roman architecture. The walls, built by slaves, were of rubble or of long Roman bricks. The wall surfaces were covered with the volcanic Travertine stone, or with marbles from Greece and Africa.

The Romans put their greatest efforts into their temples and triumphal arches, and these stand for all that is best in Roman architecture. The forms and parts of the Roman temple were similar to those used by the Greeks. Therefore we find the parts of the order duplicated in the Roman temple. There is the base, or pedestal, the shaft, or column, with its distinctive base and capital, the horizontal entablature and its component parts, the architrave, the frieze, and the cornice, each part or molding of each subdivision being decorated, molded, or carved with its own special curves and distinctive ornaments, in much the same fashion as the early Greek type.

Each of these parts had its individual name as well as its family name, and it was so designed that its proper value was obtained not only as an isolated member, but with a consideration for a proper balance of all the parts. Natural plant life was used as the model in the ornaments and decoration, and while the ornament was somewhat conventionalized, it retained the flow and much of the modeling of the real plant. Shields and trophies of war were incorporated in the panels and used in conventional forms for decoration and ornaments. The glory of Rome and the fabled divinity of its emperors was blazoned in the grandeur and importance of the masses. The roofs were not steep, and the ends of the roofs, over the short side of the building, were called pediments, and decorated with statuary, or with inscriptions glorifying the gods, as in the Greek temples.

The Romans were a dominant race, successful in their wars, and conquerors of most of the civilized world. The spirit of sureness which grew with success in war shows itself in the pride and dignity of the monuments they erected; and even in their utilitarian structures, such as the high, round-arched, arcaded aqueducts which dominated the

landscape with their mass, and with the bigness of their huge arcades of stones.

The coliseums were high and oval in plan, arcaded and terraced, with receding banks of seats and with arched windows and openings. The outer walls, under the entablature, were built of columns with arches between the columns or with pilasters, a flat counterpart of the column, applied to the face of the masonry walls. The horizontal lines dominated the design as the use of the columns and cornices demanded they should. When more than one order was used, as in buildings of more than one story in height, the Doric or Tuscan, which gave the effect of greatest strength, was invariably employed to support the Ionic, which in its turn supported the delicate and highly ornamented Corinthian. The surface of the stones and the wall joints were treated to conform to the scale of the order used in each successive story. Thus the heavier treatment of wall decoration, corresponding to the Tuscan order, was used in the lower stories, and became more delicate, until in the upper stories it harmonized with the lightness and grace of the Corinthian. The intention was that the lower orders should give always the impression of strength and support.

In the round buildings, where the Romans used the vault or dome, they designed the inner line or surface in the form of a complete hemisphere, the face of which was decorated with caissons or panels; while the exterior of the dome showed the form of a saucer supported with successive steps made up of heavy masonry at the base. This weight of masonry was necessary in order to prevent the arch or dome from spreading at the base from its own weight. The Romans did not inherit the circular line, the characteristic form of an arch or dome, from the Greeks. This form came to them from the East, where domes and arches had been used from the earliest historical periods. The Pantheon at Rome, built at the beginning of the Christian era, is a supreme example of a circular domed building. Its perfection proves to us that the Romans had been long familiar with this method.

As the Roman Empire extended itself, so also did its architecture, and so long as Rome was the dominant world power Roman Classic flourished everywhere.

The Roman Classic is descended from the Etruscan (Etruria, a pre-Roman country on the west coast of Italy) and the Greek architecture. The Etruscan influence was sup-

planted by the Greek when the artists of the world came to the Imperial City filled with the conventions and architectural formulas of Greece at the height of her artistic glory; and they quickly imposed the new cult upon the mistress of the material world.

The character of Grecian architecture, which reached its highest point at the time of Pericles in the building of the Parthenon, 435 B.C., had a great influence on the growth of the Roman Classic in Italy; but it was colored and modified by artists from other countries, whose aim it was to put their individual stamp on the monuments they created. The entire world was ransacked for means of expression. The domes and arches of the East were used as well as the columns and moldings of the Greeks; indeed, anything in the way of new and striking structural ideas that came to hand.

We cannot assert that the Roman type is a successor to the Greek art; it is rather a continuation of the native art of Italy, and for a time it was contemporaneous with the Greek, though influenced, of course, in its method of expression by external and foreign influences.

The successive styles which followed the Roman Classic had their foundation in the

Basilicas, or the ancient law-courts, which were used as places of worship by the Christians.

In the eastern empire, the Byzantine, the successor to the Classic and a later Greek type, had its roots in the older civilization of Asia Minor; it was fostered by the Greek Catholic Church, since it was designed to meet the requirements of the Church ritual. The style took its name from the ancient city of Byzantium, the Constantinople of today. In the west, the Romanish, Romance, or Romanesque style, another successor to the Classic and a Latin type, followed architecturally the rituals of the Roman Catholic Church; and since the country was largely volcanic in character, travertine and lava were extensively used as building material.

Roman Classic has no real parallel, though, as stated before, its beginnings were contemporaneous with Greek Classic. As Rome dominated the greater part of the known world with its policies, so it subdued the incipient and poorly defined architectural expression of its conquered races.

CHAPTER III

THE ROMANESQUE

TYPE:	*Cylinder-shaped, barrel-vaulted roofs, round arches, horizontal lines, roof-loads on thick walls, towers at intersections of nave and transepts, round apses.*
MATERIAL:	*Volcanic stone, various colors being used for ornaments, pagan columns and caps.*
FOREBEARS:	*Roman Basilica type, and Roman and Greek Classic.*
HABITAT:	*Southern France, Northern Italy, Northern Spain; some examples in England, partly Norman.*
DESCENDANT:	*Round and pointed arch Gothic.*

THIS type of architecture is found principally in that part of Europe now known as southern France; but its habitat extended toward the east over the northern portion of Italy, and in some degree down the west coast, and into the northern portion of Spain. There are examples in England which were influenced somewhat by the early round-arch Saxon; in the later days it was merged into the type which be-

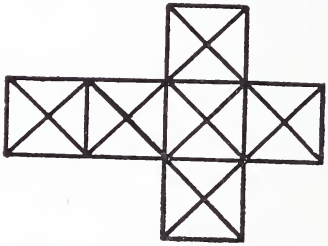
gan to develop in Normandy at about the tenth century, and which may be called Norman or Norman Romanesque.

There are examples also in the northern states on the banks of the Rhine, which may be accounted for by the trade connections by way of the Adriatic shores. The Byzantine type influenced the northern examples in their plan, and in the form of decorative features, without affecting them in the richness of color. This northern type, and that of the south of France, made slow headway at first, since the countries themselves were new and more or less uncivilized.

As the temples of the pagan times have been used to explain the architectural types, so in the Christian period we will follow the same practice. The temples and churches were not often destroyed through the exigencies of warfare, and to a great degree they were the best examples of the new styles.

The Latin cross was used in the Romanesque plan, and the roofs were built of stone constructed in the form of a barrel vault, or cylinder, without cross-vaulting. This vault continued through the entire length of the nave, and was finished at the apse, or the easterly end, with a half-dome, interrupted only by the arch and the supporting wall of

the tower or lantern at the crossing of the arms of the cross, or transept. This tower was sometimes square, occasionally octagonal, and frequently merging from one form into the other. The apse of the church is surrounded with smaller temples of semicircular plan, but lower in height than the main apse. There are small square bell-towers at the west front, with the various



stories marked by horizontal lines and with rows of round-arched windows, growing more numerous and lighter in design as the tower grows in height.

The center aisle, or nave, two or three stories or divisions in height, is not wide, as the load from the massive stone roof would not allow great spans. The walls are thick, and the side aisles are separated from the nave or center aisle by rows of heavy columns, which were mostly loot from the pagan

temples of the neighborhood. The roof of the side aisle is low, and its height allows for small windows in the wall above, which open directly into the nave. This division in the height of the wall is called the triforium in the later styles, and is the beginning of the "clere"story of the Gothic types. Properly speaking, the clerestory is the division on the high wall which comes over the roof of the side aisles.

The capitals are crude examples of the earlier pagan types, with a heavy block or abacus over the ornamented portion of the capital; this was made necessary by the heaviness of the round arches which sprang from these capitals, and the construction as a whole replaces the Classic form of entablature. These columns with the arches over supported the heavy stone wall of the nave below the clerestory, and also carried the load of the round-arched stone roof.

As a round arch, with a load, however slight, added to its own weight, has a natural tendency to spread at the bottom, it was necessary to build these side or supporting walls of great thickness to prevent their collapse. It was this unstable tendency of the arch to which the Greeks objected. Out of the building necessity which this tendency

of the round arch created you will find growing the natural and structural change toward the concentrated piers of the Gothic and its pointed stone vault and ribs.

The ornaments used in the Romanesque church are crude, but they show a family resemblance to the earlier pagan type, and, in form at least, are similar to those used in the east in the Greek Byzantine styles. The leaf ornaments lack the sharp-pointed termination of the Byzantine. The chief forms of ornamentation are the interlaced designs, basket patterns interwoven with religious symbols, and crude attempts at decorative effect by means of bands of moldings, carved with dog-tooth ornaments, and geometrical patterns of coarse mosaics. The character of these mosaics was affected by the materials at hand, the volcanic stones of the country. Unlike the Byzantine people, the builders of the Romanesque churches had no marble at their disposal, but the native stones had their own interesting blues, yellows, and reds which gave an effect that was good if not so brilliant as the Byzantine marbles. With the exception of the molding and tooled columns or piers the surface of the exterior wall is rough.

The roofs are not steep, and slope ap-

proximately as tradition demanded and the absence of snow allowed. The floors are laid out in slabs of stone with interlaced mosaics, an inheritance from the Roman Basilica and the parallel Byzantine style, but lacking the civilized richness of those types.

The arches are square on the edges, or sometimes beveled with a chamfer, the square edge being cut at an angle; they are also molded on the edge with a coarse, round molding which was sometimes decorated. A heavy projecting molding at the outer line of the arch stones is another characteristic of the style. The arches are divided into groups of which the largest is flush with and built into the wall of which it is a part; the second or inner arch has its face receding slightly from the surface of the first, and is ornamented with the huge bead at the edge or with tooth ornaments. This arch is succeeded by others, and the innermost arch of all, or the one over the door or window opening, is filled in with a stone panel or tympanum, supported on blocks or corbels at the spring of the arch and carried by the side stones or jambs. These panels, and frequently the under or return surface of the arches, are carved with crude illustrations

of Christ, of the Virgin, and of saints, prophets, and angels.

The shape and form of the moldings conform somewhat to those of the Classic period, but they are coarse, owing to the coarseness of the material used, and crude because of the natural lack of culture in a new country.

In France the Romanesque period dated from the ninth to the twelfth centuries. In England we have the Norman Romanesque from the building of Westminster Abbey, A.D. 1050 to about A.D. 1200. In Italy the style was a little later in developing and a little earlier in completion, though its use continued up to the fourteenth century. In the northern countries of the Rhine district the style was in use for some time beyond the birth of the Gothic in France.

Constantine's acceptance of the Christian religion had a great influence over the future forms of architectural conventions. He allowed the Christians the use of the law-courts, or Basilicas, for places of worship, and had additional Basilicas built especially for them. This type of building seemed to be peculiarly fitted for religious purposes, and the original plan was not changed in Italy for nearly a thousand years.

As the Christian religion grew and spread

we find certain modifications in ecclesiastical architecture due to changed conditions; but the churches still retained the essential features of the original Basilican plan, and the Byzantine of the east and the Romanesque of the west may be said to be a culmination of the Basilica type rather than successors or direct descendants of the Roman Classic.

The greatest difference between the original Roman Basilica and these later ones lies in the treatment of the roof. The Roman Basilica had a wooden frame, or truss, supporting a wooden roof. In the west, a new country subject to the raids of the northern barbarians who burned and otherwise easily destroyed wooden structures, the people were compelled to substitute a stone vault in place of a wooden roof. The plan of the Romanesque church is a Latin cross, permitting logically the use of a stone vault. In the eastern, or Byzantine churches the plan was a Greek cross, and here instead of the vault we find the dome.

Another marked difference between the Roman Basilica and the Byzantine and the Romanesque churches is the manner of arching. In the Basilica the rows of columns which separate the aisles supported a Classic horizontal entablature, while in

both the Byzantine and the Romanesque churches a series of small round arches were substituted for the entablature.

To build places of worship for their new religion, the Christians robbed the pagan temples and carried off everything that could be removed. In using material obtained in this way, we find that they lacked the exquisite taste and sense of fitness that was so universal among the pagan builders; and this accounts for the frequent misfitting of granite columns with Corinthian or Ionic or Composite caps and similar architectural indiscretions.

Romanesque was succeeded by the twelfth-century or round-arched Gothic, and still later by the pointed-arch Gothic.

Of parallel growth with the Romanesque architecture is the eastern, or Byzantine (Chapter III, page 42), and the Moorish (Chapter IV, page 52), or Saracenic, style in and about Asia Minor. The Moorish was influenced to a certain extent by the Byzantine. In the north we find the crude and unimportant round-arch Saxon, which seems to have developed from the eastern type; probably the traders of the east brought the forms by the secondary trade routes east of the Alps, before civilization in France had reached its full measure of growth.

CHAPTER IV

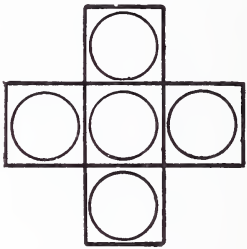
THE BYZANTINE

TYPE:	*Bulbous domed roof, round arch, highly colored interlaced decorations, loads on piers.*
MATERIAL:	*Marbles, stone of locality, old columns and capitals.*
FOREBEARS:	*Greek and Roman Classic, Basilica type.*
HABITAT:	*Centered in Constantinople, Greece, both shores of the Adriatic, Sicily, Southern Italy, and Asia Minor.*
DESCENDANT:	*Russian, with discernible influence on the Moorish style.*

BYZANTINE is to be found in the east of Europe, with ancient Byzantium or Constantinople as its main source of control, on the eastern and the western shores of the Adriatic Sea, in the islands of Sicily, in southern Italy, and along the shores and the islands of the Ægean Sea, throughout Asia Minor, and on the borders of the Black Sea. Charlemagne sent his architects from the Adriatic to build in the northern country near the Rhine, where

a few modified examples are still to be found.

The Greeks of the Classic period insisted that the arch "never slept," and therefore refused to use this form in their buildings; but the later Greeks, under the dominance of the Empire of the East, not only employed



the arch in their structural forms, but they made the dome a characteristic feature of their style. They used the Grecian cross for the plan, and covered not only the intersections of the arms of the cross with domes, but each leg of the cross as well; and then, influenced by the nearness of that ancient civilization of Assyria, of India, and of the far East, they changed the curve of the semi-spherical dome into bulbous or onion-shaped forms, which are more distinctly Indian than European, and which are to-day considered as the distinctive Russian type.

The walls of the Byzantine church were built of ordinary stone, and they were covered with slabs of precious marbles. The columns were highly colored marble and porphyry and the capitals were blocky and heavy, occasionally possessing the form of the earlier Classic type; they were decorated with interlaced designs, with religious symbols, and with sharp-pointed leaves. Where walls occurred over the rows of columns they were carried on arches springing from column to column, this row of supporting arches taking the place of the earlier Classic entablature, though the horizontal entablature was sometimes used. The inside of the dome and some of the walls were covered with glass and marble mosaics in many colors, with symbolic and geometrical designs laid out over a beautiful gold background. The windows were few and small in size, and generally designed with round-arched heads. Holy symbols in highly colored interlaced designs and geometric patterns, similar to those used in the designs of ancient rugs, formed the motifs for the decoration. Bible stories were depicted in the mosaics of both wall and floor for the edification of the common people who could not read.

The period in which Byzantine flourished

may be said to have begun about the fifth century. The style continued to develop until it was abruptly checked by the Turks, in the period preceding the fall of Constantinople in the fifteenth century. The style which belonged to the Greek Catholic Church, over which the Russian Czar was pope, continued in a modified degree under the domination of the Russians. The architecture of Russia, except that of the past two centuries, is more or less Byzantine.

The Byzantine may be called a lineal descendant of the Greek Classic, though, as has been explained in the chapter on the Romanesque, it was really an outgrowth of the Basilican. In its development it was colored not only by the tradition of the ancient Greeks, but also by those of its neighbors in Asia Minor, and by the forms which were brought from the more ancient south and east. The Byzantine had the advantage of an early civilization, and it had many sources of culture to draw upon; the Romanesque had to work out its own destiny without much help from any direction.

The Byzantine style should be called East Roman, as Romanesque should be called West Roman, for both of the round-arch types had their immediate beginning under

the Roman domination. The split in the Church which formed the Greek Catholic in the east, and the Roman Catholic in the west, separated the style as it passed through the Basilica period which preceded both modes.

The absence of statuary in Byzantine architecture, contrary to the custom of the western type, where crude figures of saints and prophets are in constant use, is another point of difference between the two. The refusal of the Greek branch to use statuary was due to the influence of their Mohammedan neighbors, whose Koran forbade the use of graven images.

The wonderful sculpture of modern Europe is an outgrowth of the use of statues in the embellishment of the western Romanesque; and the absence of the cult in the east and northeast is due to the refusal of the Byzantine builders to incorporate sculpture in their architectural treatment.

Because of the movement of civilization toward the west, this type of the east could have no great influence on the development of style in general, nor could it have successors of importance. It is, however, the father of the Russian architecture, and it also exerted a strong influence over the Sara-

cenic, or Moorish, type which spread through northern Africa and through southern Spain after the sixth century. Its influence is also seen in the Scandinavian types of the north.

Byzantine was coincident with the Romanesque in the west, with the Saracenic, or Moorish, in the east, south, and southwest, and with the Norman and early Gothic in the north.

The supreme examples of Byzantine are the Cathedral of St. Mark's in Venice and the Santa Sophia in Constantinople, with several beautiful examples at Ravenna.

CHAPTER V

THE GOTHIC

TYPE:	*Early round arch; developed type, pointed arch, perpendicular lines, cross-vaulting, loads centered on piers, buttresses.*
MATERIAL:	*Stone, rarely brick, and some wood.*
FOREBEARS:	*Norman, Romanesque.*
HABITAT:	*Everywhere, but primarily in northern and middle France and England. Copied by the Northern states and Spain; some forms used in Northern Italy.*
DESCENDANT:	*Has none.*

WHEN we consider the growth of the master style, Gothic, from the round-arch Norman of the twelfth to the Flamboyant of the fifteenth century, we must accept it as a Frankish or French production. Gothic does not belong to the southern countries, and Italy never mastered its structural necessities. You will find examples, however, in the north of Italy, which historians have labeled Italian Gothic. These examples, with a few exceptions, are Gothic only in the use of forms and ornaments,

while the walls and openings conform only measurably to the custom of the Gothic in France, the country of its birth. The type in Italy might more properly be called the pointed Romanesque, though the ornaments of the eastern Byzantine and the Saracenic had an equal influence in its production.

The Gothic method of design and construction, as developed in the northern countries, was considered barbaric and uncouth by the Italians; in consequence of this very superior point of view they labeled it as a style belonging to the barbarian or the Goth, and would have none of it.

In order to comprehend the basic story of the rise of this master architectural expression the reader should consider the great upheavals which were taking place in Europe —social, political, and religious changes, and which bore no small part in the growth of the style from the round-arch Norman type of the twelfth to the highly decorated Flamboyant of the fifteenth century.

While the kingdoms and principalities of northern Europe were all of them more or less affected by these changes, it appears that the growth in France dominated that which occurred in other countries. It is not the intention of the writer to ignore the

fact that there were expressions of the Gothic spirit in the Rhine countries, but it would not be possible in a volume of this size to consider any but the principal stems of the growth. During the time in which occurred the construction of the greatest master examples of Gothic, the nation which we now know as France had increased its crown lands until each of the cathedral cities, such as Paris, Rheims, Amiens, Rouen, and Chartres, was included in the national holdings, and they must be accepted as reflecting the growing power of the king and the nation.

With a new and independent school of architects, the Free Masons of the Middle Ages, the national pride keeping pace with the increasing power of the king and his growing dominions, one is not surprised to find an architectural expression which reflected this new spirit. It would have been most surprising had the Norman examples of William and Matilda remained as the only examples. Architecture is the one art which has been used throughout the history of man to express his ideals and explain his aspirations; and, in these days of the Middle Ages, we find a people and an expression in architecture exactly coincident.

The French architects were employed in

other countries, while the French rarely, if ever, imported architects. Consequently architecture, in the other countries of Europe, reflected to a great degree the French fashion, colored, of course, by racial differences.

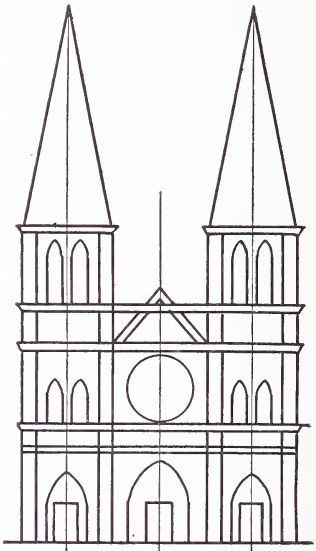
The introduction of Norman or Romanesque architecture into England followed the development of this method in southern France. The logical and structural changes which were necessary when the form of the arch and the vault changed from the round form to that of the pointed were brought about by the temperament of the English people, colored by its more northern ancestry. The English Gothic did not accept the round apse of the early Christian Church, whether from the lack of structural ability or for other reasons. The English architects developed the square end, and they elongated the nave from its intersection with the transepts. They also developed the tower at this intersection, whereas in the French form this is rarely seen. The use of the spire is essentially English, and this pointed tower is built, as in Salisbury, over the crossing of the nave and the transepts, while in other examples we find the spire on the main axis of the nave on the western front, with occasionally two spires flanking the western façade.

This spire has a characteristic which marks it as a descendant of the Teutonic translation of the earlier Romanesque; there, the steep-pointed roof of the lower portion of the square tower is straddled by the octagonal form of the upper portion. The projecting corners of the square are treated with smaller towers, or that corner portion of the pointed roof loses itself against the sides of the octagon above. The English Gothic has its Early English of the thirteenth century, its Decorated of the fourteenth, and the Perpendicular of the fifteenth century; and while this development parallels somewhat that of the Early French, the thirteenth-century French and the Flamboyant, or fifteenth-century period, it never possessed the superior height and singular acuteness of the great French examples.

We have mentioned the Gothic as a master style, of equal importance to that other master style, the early Classic, and the attention of the reader has been called to the difference in the method of construction; the Classic being the post-and-lintel without the arch, whereas this second master style is essentially dependent upon the arch and the vault.

The use of the arch demanded engineering astuteness and clever manipulation because

of its structural peculiarity. It can never remain stable when supporting a superimposed load, without having its natural and necessary side support or buttress, since



Gothic Elevation

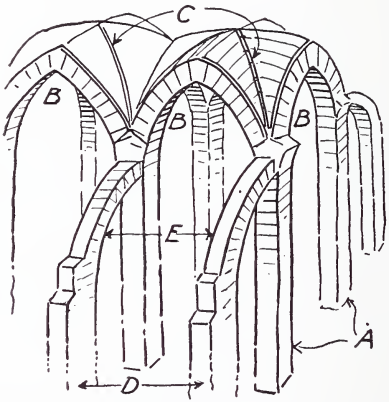
there always occurs a side push or thrust when loads or weights are imposed upon it. Therefore we must regard arches, vaults, piers, and buttresses as typical of the Gothic, and essential in its design composition.

During the earlier period of the Romanesque round vaults were used to cover the naves, or the long arms of the Latin cross which was used in the plan. In the various phases of the late Romanesque or of the Norman, where the round form of the arch or the vault is superseded by the pointed form, both in the openings of the doors and the windows, and in the roof vaulting, there occurs a radical change in the method of building the side walls, and in the concentration of the roof-loads on square piers or on piers surrounded by columns.

In explaining this method we must first accept the division of this rectangular-shaped plan of the nave, or the long arm of the cross, into squares. For example, if we design a nave of forty feet in width, the length of this nave must be divided into sections or squares in the plan, each side of which will be equal in length. Let us analyze this method of construction, and we will have essentially the structural characteristics of the Gothic formula.

We build a pier or post or column, A, at each of the four corners of this square until we have reached a height sufficient for our purpose; then from each of these piers, at the top or capital, we build a high-pointed

arch, B, one arch for each of the four sides, with diagonal ribs or arches, C, crossing at forty-five degrees from one pier to that on the opposite corner. The slightly curved open spaces between these four outside arches and the diagonal ribs we fill in with stone, each slab being jointed so that it helps the adjoining stone to remain in posi-



Gothic Vaulting

tion. Now the weight of this cross-vaulting is pushing the binders, or the rib stones, in every direction, and the top of the pier will have a tendency to fall outward. This stress must be eliminated, and first we will build

the adjoining squares of the nave so that the load of each square is taken care of by the next. On the side which has no neighbor, since it is on the outside of the nave, we build a piece of wall at right angles to the nave; or we place a pier, D, at a sufficient distance from our original pier, A. From this wall or pier we spring a stone curve, an arch, E, or, more properly speaking, a half-arch, the upper part of which rests against the pier or cap of the original pier. This construction, on each of the sides of one square, will prevent the load of the roof from pushing over the pier; for the pier is quite willing and able to carry the burden, provided only that the flying buttress or outside arch will keep it quietly in place and prevent it from slipping off horizontally. This buttress arch must again be taken care of at its own base, since its characteristics are common with the arches of the roof. We therefore load the lower and outer beginning of the spring with heavy masonry, or pinnacles, and these latter we decorate and ornament. We see, therefore, that in the Gothic, with this basic form of visible construction, the ornament or design is essentially structural; each post or each portion of the post is working, and every member has an actual and

material reason for existence. The Gothic style is a skeleton visible to the eye and beautiful; because each part of the skeleton is serving itself and assisting its neighbor in its own peculiar function. With this method of structural ornament, and with sufficient assurance and material, the architect of the Middle Ages found it possible to express his joy in life, his exultation in the new freedom, and his pride in his idealism.

The Gothic method of expression reached its apex in the fifteenth century, and was superseded by the new mode from Italy; but it colored somewhat this new expression, which was Classic and horizontal in its form. Since this period we have become servants of the Classic, and we have purified it from its Gothic touch; so that nowadays there can be no more of the Gothic method, except, perhaps, in its ecclesiastical forms, or in the façades of our sky-scrapers and industrial plants, where light and still more light is demanded.

There is a most interesting phase of Gothic in its modern form which might be used to explain the difference between creating in architecture and adapting this or that style to the need of the moment. We have no great Gothic architect in our time, except

possibly one man, and he is an American. The French have discontinued the use of the type as a nation; and the English, overcome with the horrors of the Victorian revival of the style, have hesitated in the production of modern examples. Pugin, Shaw, Street, Paley and Austin were Gothic architects in England during the latter half of the last century, and they did notable work, together with the greater men of the same period in this country. In northern Germany there are examples of a marriage of Gothic principles to those of the Classic era, with a consequent result that is original, unique, and essentially Teutonic in character; but which must be accepted as a movement toward a distinctly new expression. Remember that egotism is an essential in the creation of new expressions. This we find illustrated in the race pride of the Greek and in his wonderful exposition; and again in the new independence and supreme self-centered purpose of the artistic French Gothic of the Middle Ages.

The apathetic acceptance of conditions during the Romanesque period is paralleled by the lack of a supreme impetus in this country; for though we have many examples and much history in our libraries, we do not

possess centralized springs of dynamic idealism any more than did that earlier people of the south of France. We must, therefore, accept the undisputed fact that architecture and its method of expression is passing through one of those phases which we call transitional. Success in styles or modes depends to a greater extent than is usually understood upon the good taste, the pride, and the sincerity of the client from whom the architect must draw his inspiration; and since we practitioners of to-day are subject to the control and to the criticisms of the untutored layman, the story which we tell is a true story of the times; the future historian must classify it as he thinks best.

In our modern expression we do not use, nor may we carry on, the Gothic method. Our schools have considered the study of Classic as of more importance, and our students, who formerly inhabited the Latin Quarter of Paris, are being turned toward the Seven Hills of Rome for their finishing and post-graduate course in Renaissance architecture. The Gothic, as a means to an end, must be affectionately and reverently installed in its sarcophagus to await its inevitable resurrection and its new lease of life, for it has not by any means finished its story.

There is a great cry for a return to the handiwork of the artisans of the Middle Ages, as a protest against the use of steel frames and machine-made details. There can be no answer to this demand for a condition which in itself is false and unnatural.

When the art produces a creator of sufficient sincerity and ability who will continue the development of the Gothic style, using the modern methods of construction and working according to the honest needs of his problem, then the story of Gothic expression will be continued, but it will still be controlled by the laws which govern all expression in architecture.

CHAPTER VI

THE RENAISSANCE (ITALIAN)

TYPE:	*Return to Classic and horizontal lines, Classic order applied to wall surfaces; early, a slight mixture of Gothic details slowly eliminated.*
MATERIAL:	*Stone, brick, terra-cotta, wood.*
FOREBEARS:	*Roman Classic, influenced by Greek culture.*
HABITAT:	*First Italy, then France, England, Northern states, Spain.*
DESCENDANT:	*Still with us.*

FOR a thousand years the Roman Empire awaited the culture and the civilization of the Eastern Empire which a Constantine had founded, which a Constantine was to deliver over to the Turks, and which, according to Greek folk-lore, the Third Constantine is to bring back to Greece. During this thousand years in Europe, while the Romanesque grew into the early Gothic and flowered into the fifteenth-century Flamboyant Gothic, nations were being born and the spirit of freedom was growing toward

that great period of reformation which influenced the thoughts of the leaders among men in France, in Italy, and in the Teutonic principalities.

Rome and all Italy were content with the Basilica for their churches, while for other works of architecture they used the old forms with local changes of little importance.

The Byzantine method influenced the architecture in the cathedrals of Sienna and of Florence; for example, where the exterior walls were covered with slabs in alternate layers of white and green marbles.

The details and parts of the northern Gothic were adopted in many places without taking over the fundamentals of the Gothic science of building; and while this never occurred in Rome, it did occasionally happen in Florence and in Venice and in the north. This was particularly noticeable in the building of private palaces.

The numerous Byzantine expressions on the shores of the Adriatic Sea, and those of the Romanesque along the west coast and in the north of Italy, are extremely interesting; moreover, they are of the greatest importance in the consideration of the evolution of styles in architecture toward the master style or Gothic.

But here in Italy, where they had remained content with the Basilica and its individual type, and where the Roman Classic had lain dormant and neglected for a thousand years, we are to find a most astonishing awakening. The buildings, monuments, and temples destroyed by vandals, spurned and ignored by those in authority, and torn down for building material—Imperial Rome, destroyed and robbed by priest and overlord alike, still retains its ancient vitality, and when the spirit of old Rome awakens its monuments are uncovered, and its methods and traditions are analyzed, studied, and renewed with painstaking care and faithfulness. Remember that this so-called Renaissance is no new style, nor is it a servile copying of the old; it is a logical continuation of the Roman Classic after its long slumber of a thousand years.

Subject to the new conditions and to modern private and civic requirements, the democratic Classic of old Rome renews itself, and becomes again the standard of architectural style throughout the civilized world.

We must not forget the influence of the Greeks from Constantinople. Artists and artisans alike harassed and harried by the

Turks, they came to Rome to offer their culture and their architectural traditions to their brothers of the western Empire.

The Romans of the Classic period used not only the column with its entablature and the details which were common to the Classic period, but also other methods of structural expression which they had adapted from their conquered provinces. The arch form was used as an arch in a wall, or in an arcade, or between the columns, with pilasters or sections of wall for its support. The Romans had also employed the dome in the building of round and domed temples to the goddesses.

As the Romans had been democratic in their use of architectural forms, and as their monuments covered the continent of Europe and were scattered throughout Asia Minor and the north of Africa, the reader must realize that these latter-day creators had an immense architectural library at their disposal.

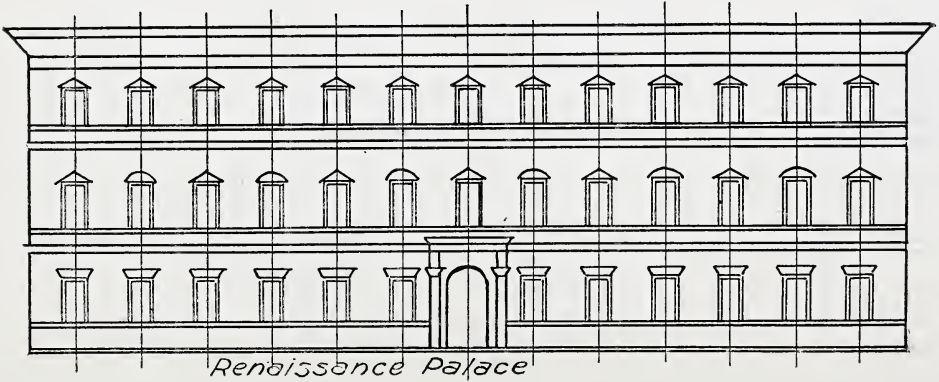
That the architects of the Renaissance period were not narrow in their use of this immense treasure, the results of the Renaissance period are ample proof; for they used the column and the arcade, designing new capitals and new ornaments and embellish-

ments on the face of the column. They applied the orders, in the form of flat pilasters, to the wall surfaces of their buildings. They treated the window openings with molded frames, or architraves, and crowned them with pointed and curved pediments. They continued the use of the horizontal line in the composition, accenting or enriching the cornice according to the old method; and they designed new cornices, omitting the architrave or frieze, and decorating them as their fancy and ability dictated.

Through the refinements which these giants of the fifteenth century applied to the old forms, the Italian Renaissance bloomed and blossomed until its beauties reached a plane where they can be compared only with the wonderful beauties of the Gothic of the thirteenth and fourteenth centuries.

The limitations of this book compel us to consider the Renaissance only in its relations to the architecture of Rome, Florence, and Venice.

Florence is accepted as the first city to take part in the revival, and Brunelleschi (1377–1446) was the first architect of prominence who adopted the new mode. He had studied with much care and diligence the ancient examples of the art in Rome, the


Renaissance Palace

round temples and the domes, the various orders and their details until he had thoroughly mastered the ancient laws. He was the architect who designed and built the dome on the Cathedral St. Maria del Fiore in Florence, which is considered one of the beauties of the architectural world. Tuscany, the county of Florence, is neighbor to the ancient Etruria; consequently the architectural atmosphere of Florence is affected by the touch of that dead hand.

The walls of the palaces are of large stones with the first story coarsely rusticated, and built without adornment except at the entrance. The horizontal lines, or moldings which separate the stories, are frequently ornamented with dentils; and the cornice, which crowns the building, is of a heavy, overhanging, molded form decorated with eggs and darts, dentils, and modillions. In some instances the roof projects several feet, and is supported on wooden brackets, with cross-timbers resting on these brackets and holding up the rafters and roof tiles.

The palaces have the appearance of fortified castles, and the massive effect of the plain wall is accented by the molded and carved details. The arches are frequently round on the inner line of the curve and

pointed on the outer line of the arch stones, with two smaller arches in the arch opening, separated or supported on columns ornamented with capitals of a suspicious Gothic tendency. There are traces of the earlier Etrurian taste, together with the use of modified and developed Classic details and moldings and some suggestion of the twelfth-century fortified architecture.

When Rome used the new mode of expression the results were more in harmony with the Roman Classic and there is less of the Etrurian influence. The Classic models and forms are used in the palaces, but they possess more of studied refinement than we find in Florence; the mass is the same with the entrance accented by columns and piers. The height of the buildings is divided by the stories, with the horizontal belt moldings, and the window openings are framed with small columns with curved and pointed pediments, a complete Classic order slightly changed from the old formula, but with all of the character and strength that a Classic order of a larger scale would assume.

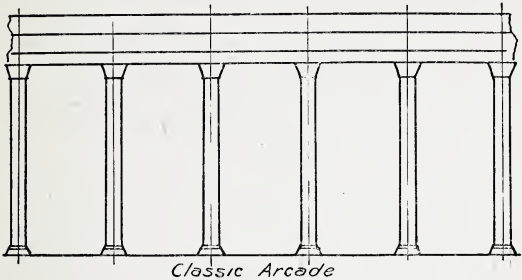
The Chancelleria Palace by Bramante, 1495–1505, shows the most refined and beautiful architecture in the inner court, with two stories of arcades and the plain wall of

the upper stories ornamented with applied pilasters. The detail of the columns and arches are Roman Classic, yet so far advanced in culture that the earlier monuments seem crude in comparison. The exterior has a carefully tooled first story, in contradiction to the Florentine custom of rough stone, and each of the stories is ornamented with a complete order in pilasters, delicately and beautifully proportioned, and displaying carved ornaments of natural plant life in the panels.

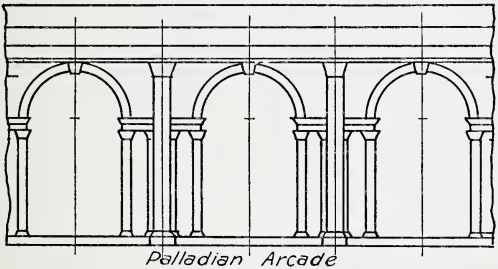
Remember that Rome still remained the Imperial City, and that the wealth and the refinement of Europe gravitated in that direction. The resultant architecture reflected the taste of the constrained society of the times.

The end of this tremendous upheaval appears when Charles VIII. of France began his crusade for his alleged inheritance of the Holy Roman Empire, and from the close of the fifteenth century Italy was overrun with the armies of all the nations of Europe.

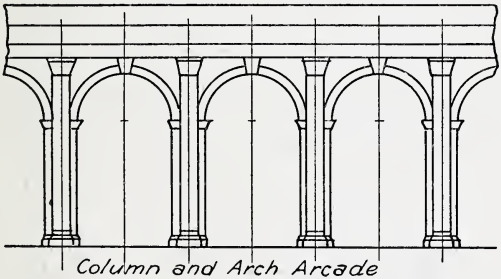
The north of Italy felt secure in its architectural progress only after the defeat of the French under Francis I. in 1525–1529, when Venice and the other cities of the north developed their period of the revival in its



Classic Arcade



Palladian Arcade



Column and Arch Arcade

greatest glory. The Venetians were inoculated with the gorgeousness of the rich Byzantine East, and this richness was reflected in the architecture of the period; so that while the Roman motifs and details were used by the Venetian, it was in such a fashion that no student can mistake them for anything but Venetian. The earlier palaces of the Grand Canal had been built in the style of the Gothic, colored with Saracenic or Arabic forms and color; and this later Renaissance seems to have been affected by the same desire for richness, though remaining Classic.

There is little rugged simplicity, such as we find in the Florentine, and not overmuch of the gentle refinement of the Roman, in the Venetian architecture of this period. They succeeded in obtaining strength through the use of full columns standing free from the arcaded walls, with the consequent projection of the entablature; and in these arcades of Venice an elaborate arched composition is common. This composition is called the Palladian motif from the name of the great Renaissance architect, Palladio (1518–1580).

The Palladian motif is, in simple language, that space between two columns, and under the entablature, which is divided into

three parts, the center division being the greatest and arched, while the two side divisions, smaller than the central opening, are not arched, but are square-headed and extend only to the spring or beginning of the central arch; small columns support the arch and mark the division between the three openings, and this motif is repeated again and again in arcades. (The triple window, with the center opening arched, which we find so frequently over the front entrance of our Colonial houses, is the same motif.) In the angles at the upper corners, over the curve of the arch and contained within the side of the column and the lower line of the entablature, are elaborate carvings of symbolic figures which add greatly to the richness of the composition in connection with the deep shadows and the consequent play of light and shade. The balustrade, or the pedestal of the second-story order, is opened up by the use of balusters with open spaces between. In fact, in most of the Venetian examples there is a richness of effect without an overload of ornament, the result being obtained by the use of strong light and shade.

The revival and development of the ancient art of Rome had apparently run its

course in Italy toward the beginning of the seventeenth century, when the straight lines of the old architecture became curved in the most amazing fashion.

This decadence in architecture is called the Grottesque or Baroque, which are most suggestive titles. Baroque means the bizarre or fantastic, and Grottesque or Grotesque means capricious or irregular. Some authorities insist that the latter word was coined to picture the irregular effects of falling water, and that it was suggested by the rough-stone treatment of fountains in grottos and in gardens; they also say that Baroque, which is commonly supposed to mean an irregular pearl, is in reality the expression which was used to denote the rough and irregular curved edge of the pearl shellfish. The reader can readily see how the introduction of this taste for irregularities could very easily affect the constructional and supporting lines of the column and its overhead entablature, and that this license indicates a revolt against the academic expression. This revolt occurs so frequently in the history of architecture that it seems worth while to consider it in the rise and fall of all the styles in history. First there is experiment followed by assurance which

quickly becomes subject to codes and rules; then comes the inevitable reaction against control, with the consequent violation of the unimportant rules, leading finally to license in the use of the fundamental rules which are based on the natural laws. It is true that, following these artistic orgies, a reaction invariably follows against the looseness of lines, the violation of composition, and the immorality of design. Then you will find a new beginning, with the same story of attempt, success, and over-indulgence.

This Baroque style affected the architecture of France in the Louis XV. period, and that of Germany in the late seventeenth and early eighteenth centuries. Spain seems to have been enamoured of it for a longer period than the other continental states, and England enjoyed comparative freedom from its influence, though one would expect to find characteristics of this sort creeping into the English expression under the reign of the Georges.

CHAPTER VII

THE RENAISSANCE (FRENCH AND ENGLISH)

DURING the time which elapsed between the fifteenth-century Gothic in France and the introduction of the new style from Italy, we find the usual transition, or the marrying of the forms and details of the old style to the theories of the new type. Remember that the artisans had been educated in the use of the Gothic forms, and a complete and sudden *volte-face* from the old to the new was impossible. Try as they would to rid themselves of the old, and absorb the new and strange style from the south, they failed; and, in failing, a new type or transitive style grew out of their efforts. We call these transitional periods the Louis XII. and the Francis I., from the names of the kings who ruled over France at this time. We must notice that the styles or periods of architecture have lost their general titles, such as Gothic, Classic, or Romanesque, and from

this period dates the new manner of designation. The churches are no longer to be considered seriously since the cathedral-building period had ceased and the era of palaces had begun. The transition style of Louis XII. and Francis I. retained the steep roofs of the old and adopted the horizontal lines of the new mode. Some of the earlier Romanesque details were incorporated in the new type, and brick and stone were used in the construction. The palaces of the Loire Valley, Blois, Chambord, Azay le Rideau, Chenonceaux, and others are the most frequently accepted examples of the new mode, this being the expression which was used at the time to designate the Italian revival.

Chambord has the horizontal lines of the new mode, the steep roofs of the Gothic, and the heavy, round towers of the earlier or military period. The flat pilasters applied to the wall are merely a decorative feature, with a new form of ornamental treatment in the dormer windows of the roof that suggests the Gothic in composition, but which is Classic in detail.

The salamander with a crest, the symbol of Francis I., and the very much over-ornamented initial F are used as decorative panels, while the capitals of the pilasters are

according to the new mode in Italy. The balustrades in many cases are designed in pure fifteenth-century Gothic, and under the reign of Louis XII. the dormers also are of pure Gothic design.

The châteaux of France, which antedate this revival, were of semi-military character, with huge protective towers at the exterior angles of the buildings. The entrance to the inner court was protected by the feudal portcullis, and all of the window openings on the exterior walls were small and of little use except in time of war.

The later-day lords of the châteaux, under the gallantly inclined Francis I., either opened up their gloomy towers with ornamented windows, or they built new palaces in which the old form of exterior wall and flanking tower was used, it having become a standard, but decorated and embellished with pilasters and coats of arms. Cornices were retained, and also the continuous horizontal lines dividing the stories; the steep roofs also remained to recall the fearful and gloomy palaces of the past era.

The dormer windows are treated with pilasters paneled on the face, and ornamented with circular or diamond patterns at the ends and in the center. The decora-

tions of the entablature are flutes or channels paralleling one another; also eggs and darts, dentil ornaments, and scrolls cut in low relief.

In the period which we know as Louis XII. and Francis I. we should consider the architecture designed under both kings as a transition and not try to separate it into distinctive styles. This period of transition was followed by a more carefully considered and studied attempt on the part of the northern nations, but before we continue in the line of the French kings and their particular periods we must consider the effect of this revival in Italy on the other nations. This is difficult, as the reader who knows something of the overlapping influences which affected the continent of Europe at this time will agree. England and its relations with the new mode may be dismissed and reserved for independent consideration. But the effect on the Teutonic states and the countries of the Iberian peninsula which we to-day call Spain and Portugal should be considered in connection with the French Renaissance.

The Italian revival affected Germany somewhat later than France, and on account of racial and political reasons its develop-

ment was slow and limited. The war with the Turks at the end of the sixteenth century, and the Thirty Years' War, which occupied the greater part of the first half of the seventeenth century, left the Teutonic kingdoms rather impoverished and somewhat disinclined to undertake the building of castles and churches. The Germans had been compelled to struggle against the hordes of the east, who insisted, with much assurance, on entering Europe and brutalizing it, while the western Frank quietly busied himself with his growing dominions and his civilization, protected by these buffer states which we to-day call Germany and Austria. These states were retarded in their own development because of their proximity to the wildness of the east. It is owing to this geographical fact that the Germanic people were late in acquiring the finesse which the west, or the French, had developed; they adopted the modes in architecture which were common to the ancient civilization of Italy and France only after these countries had passed through the period of the finest examples.

The German tendency toward excess in ornament is shown in the buildings at Heidelberg (1559), where carefully considered

proportion and restful surface values are ignored. We can expect little development in any country subject to the distraction of destructive wars. The Germans, however, in the later days of the Renaissance, studied and reproduced the styles of France and of Italy. Unfortunately their opportunities for study and adaptation occurred during the decadent Grottesque and Baroque period of these two countries.

The artists of Spain were too much influenced by the Spanish-Saracenic and Composite Gothic to bring about any complete and satisfactory Renaissance in that country. The revival, though it is Spanish in character, lacks concentrated or basic composition; its salient characteristic is applied ornament of the new mode, of the Middle Ages, and of the Saracenic type jumbled together in a most ornate composition. The Escurial near Madrid (1563) is perhaps the simplest and best of the later Renaissance types in Spain, the architects of this building having been students of Michael Angelo.

France made herself the master of the new mode with such rapidity that all of the outlying nations finally became dependent upon her for their architectural expression.

In considering the various changes and

improvements in the style which prevailed in France from the transitional Louis XII. and Francis I. period throughout the entire history of French Renaissance, we will confine ourselves to the epoch or climax periods, and we will enumerate the names of the kings which are the corresponding titles of the various periods.

It is impossible in a book of this size to consider in detail the variations in methods which prevailed from the death of Francis I., in 1547, to that of Louis XVI., in 1793, or to consider the subdivision in the styles which continued during that period, except where marked differences in the treatment of buildings occurred.

During the growth of the style in Italy the work of the artists and architects was colored by the atmosphere of the three great cities—Rome with the ancient ruins at her feet, Florence with her traditions of conquest and wealth, and Venice with her sea power and its consequences. It is a fact, however, that when these same artists and architects of Italy journeyed to Paris and sold their special knowledge to the French kings, they were affected by their new environment, and the work which they did shows this difference. This also occurred in England at the

beginning of the Renaissance in that country. The Italian designers created there another atmosphere which was neither French nor pure Italian.

The entire period of the Renaissance in France, though encouraged by those Italian artists, became French in character, and distinctively so. The French nation, with the tremendous vitality which had created a new and individual style, such as Gothic, without help from without, was sure to modify and shortly control any new mode which might be introduced by foreigners. And so it happened that while the French continued their study of the ancient art in Rome, and its more modern expression, they soon made of it a distinctly different and special type which is French, and which can never be misunderstood as the art of any other people or country. The Renaissance of France was studied and copied by the other nations of Europe, and their architectural production was thereby affected, just as previously it had been influenced by the French Gothic.

Following the period of transition, which we must consider as having terminated on the death of Francis I., though any abrupt termination of style is an impossibility, forms and methods shading the one into the other

in a most bewildering fashion, we have the period of the Henrys—Henry II., III., IV.—followed by the longer list of Louis XIII., XIV., XV., and XVI. The country was disturbed politically, and the architectural progress was somewhat interrupted during the Huguenot uprising of the time of the Henrys, though the style remains well defined and distinct. The old Classic pediment was used over doorways and windows, and the architects of this time also designed broken pediments and doubled and curved pediments. They accented the corners of the brick buildings with stones or "quoins" (corner-stones — one long and one short), while the use of the belt moldings, or bands, was continued. Perpendicular bands, which carried the outlines of windows from one story to the stories below and above, were added, and stone panels were built into the brick walls in order to bind together the compositions of the parts, so that the apertures could ally themselves with others on the same level or with those above or below. This method became necessary when both brick and stone were used in the walls, both on account of the difference in color and owing to the quality of texture in the material. In the early Greek style, where marble was

used throughout, and where the composition or design was limited to columns, entablature, and pediment only, the shadows of the spacing between the columns and the lights and shades of the molded parts served as ties in holding the mass together. In the Roman period, where the round arch was used between the columns and under the entablature, we have practically the same conditions, as the same building material was used. Again, in the design of the façades of the Gothic periods the parts were tied together between the perpendicular by horizontal rows of belt moldings and arcades, and the dark of the window openings, while accented in the perpendicular direction, could not float about on the wall surfaces, since they were controlled between the supporting piers or bones of the composition; here again stone was used throughout the entire design.

In the many examples of the Renaissance, where stone was used exclusively for the façades, the same necessity existed which compelled the designers to tie the smaller motifs of the front to the mass. In the cases where brick, or brick and stone, or stone alone, was used, the buildings as they are now designed are not post-and-lintel, nor are they necessarily of a post or pier

type. In the building of palaces—and this is the palace era in architecture—the floors and roofs were supported on the continuous walls of masonry, as in the Romanesque period. The door and window openings did not in any sense interfere with the supporting power of the walls. They were designed as part of the architectural composition, and in strict harmony with the floor plans.

It might be well to digress for a moment in order to consider an important factor in the art of design, one that applies not only to the architecture of this period, but to all of the earlier examples. The law of proper balance in the plan and in the exterior of buildings demands that a main axis or center line should be first considered. The mass, the parts, and the details of the parts must not be greater or less on one side of this main axis than on the other side. Secondary axes are used in their proper relations to the main axis wherever necessary, and the center lines of all window openings, or panel decorations in any form, must bear their proper relation to the secondary axis and to the main axis.

In the Greek and Roman temple this main axis occurs at the center of the front and is indicated by the apex or point of the pedi-

ment, by the entrance door to the body of the temple, and by the center space in the row of columns in front. The parts and designs of each side of this main axis are alike in every detail.

In the Gothic cathedrals the main axis is marked by the large central doorway, by the rose window, and by the point of the roof above; while the right and left sides of the composition have the secondary axes through the center of the flanking towers and minor doorways. The center axis controlled the entire design, and the secondary axis governed their own portions of the composition.

In the Renaissance this same law holds good, and the façades of the Italian and French palaces, with the strong horizontal belt moldings, are designed with a repetition of windows on each side of the main axis; each window on the right has its mate on the left, and the center line of each window opening or decorated ornament is equidistant from the other. The center line, or main axis, is accented by the large entrance, with its richly decorated piers and columns, its entablature, and its arched opening. In the order of their importance the entrance has the center, and is strongly indicated; the

cornice, which crowns the entire composition, is next in importance and is so designed; while the secondary parts, such as windows and pilaster ornaments, are subordinated to these others. While these laws are inevitable, modifications of them do occur, but these departures from regularity require the brain and hand of a genius to design; otherwise we would find an unhappy and disorganized composition.

In the expansion and growth of the French Renaissance the artists borrowed their inspiration from their brother Italians, and the French kings encouraged the Italians to accept places of importance in their court; indeed, the entire Continent, including England, imported artists and artisans from Italy. In addition, they studied the art with their own associates, and analyzed and investigated the design and composition of their own immediate predecessors.

During the reign of Louis XIV., in the latter half of the seventeenth century and the beginning of the eighteenth, French architecture reached its highest plane, even though, or perhaps because, it became subject to the codes and laws of the Academy of Arts during this time. The expression is strong and assured, and the ornaments have

the appearance of self-control and dignified reserve; while the period which followed, which we call the style of Louis XV., shows the influence of the Baroque or Grottesque, which had marked the decadence of the art in Italy. Compound curved lines take the place of the more dignified and conservative horizontal construction which preceded it, and this lavish and flowery period of gilded ornament and decoration endured until, under Louis XVI., a most natural reaction followed, and the architects reverted to the simple lines of the earlier Classic.

This period at the latter part of the eighteenth century marks the universal revolt against the over-ornate method of the Baroque and denotes a new interest in the art of the ancient. Under Napoleon I. the artists not only referred to ancient Rome for their new inspiration, but they invaded Greece and Athens for information and examples. From this spirit and under the influence of this new cult the style which we call the Empire came into being under Napoleon. We find some Greek color in the examples of architecture and furniture, as well as in the decoration and ornaments; the enthusiasm carried the Greek spirit even so far as the gowns of the court ladies.

After Napoleon came chaos and a lapse into the commonplace of more than half a century in every country, followed by the new revival in the latter part of the nineteenth century. In Spain and Italy nothing is being accomplished. In France there is a more academic acceptance of the older laws, with a constrained control of the parts, but the class or type still remains. In Germany the architects are seriously and sanely creating a new style, neither pure Classic, nor Renaissance, nor Gothic, but fashioned in accordance with the fundamentals of the Germanic mind.

The architects of England seemed to be as ready as were those of France to join in the Classic revival, and the English transitional period occurs in much the same fashion as in France, with the structural motifs and the ornamental forms of the late Gothic acting and reacting upon the new methods of pilasters, capitals, and entablature which the Renaissance demanded. The English were not entirely sympathetic with the French or the Latin. Their enthusiasm and artistic appreciation was tempered by their racial characteristics, and in consequence the Gothic atmosphere is found later in the English transition than in the French.

The Elizabethan style of the latter half of the sixteenth century is somewhat paralleled by the French transition of the first half of this same century, and the characteristics of this English period of change were colored by the taste of imported Flemish and German artisans. The purification of the Renaissance, and the subsequent development of this style in England, occurred only after the architects had studied under the Italian masters. Inigo Jones, in the early half of the seventeenth century, became a pupil of Palladio, and the careful training in design and composition which he and the other architectural worthies of this period received in Italy and in France is reflected in the work of the great English architects of the seventeenth and eighteenth centuries. Such men as Jones and Sir Christopher Wren, who had his opportunity after the great fire in London in 1666, together with Gibbs, William Chambers, and their pupils, and the amateurs among the noblemen, are responsible for the English expression, which is as distinctly English as the French expression is French, although both nations found their common inspiration and their knowledge in Italy. It is most natural and interesting to note that, though Italy revived the ancient

art, the French in adopting it made it French; and the English, with the same masters and with similar conditions, created a new atmosphere which is distinct from the French expression and marvelously human and comfortable. This later English period is called the Georgian, as the German Georges ruled over England, and they and their courts dominated the artistic situation.

This Georgian period is the immediate ancestor of our so-called Colonial, this country being a colony and dependent on the mother country for architectural expression.

CHAPTER VIII

THE RENAISSANCE (AMERICAN)

THE Renaissance expression in this country was naturally derived from Great Britain, so long as trade and social relations continued to be friendly. Our people imported the drawings of the English architects of the time, and read their essays on architecture. They had also the opportunity to study the works of Palladio, Vignola, and Scamozzi, those Italian architects of the sixteenth and seventeenth centuries whose work had so greatly influenced the method of expression of their own pupils in England.

Here in America the Italian revival of Roman Classic was dependent upon our analysis and study of the work done in England. Though our Colonial architecture is practically the Georgian of England, there are variations and changes which mark it as American. These variations were due to

a number of reasons. The colonies were separated from the mother country by an ocean which took weeks to cross, and this meant that voyages for the purpose of studying models were not to be lightly undertaken. Photographs, which might have been used as guides, were unknown, and there were few books. The Colonial architects knew the traditions of style expression, and they had the Englishman's respect for law and convention; but they also possessed a freedom of spirit which was akin to the loftiness of mind that finally led up to the American Revolution.

The English traders imported doorways, mantels, ornaments, and furniture, and in some cases they brought the entire house, with the bricks and molded cornices, columns, and entablature. These examples from home were admired, studied, and reproduced to such a degree that to-day we find it necessary to refer to the ship's invoice papers for confirmation of their English origin.

The independence of the American joiner or architect led him in many cases to ignore conventions which were imposed upon him by his English cousins; and the variations in details, which were the result of this vio-

lation of the older laws, are distinctly American or Colonial. In many instances the main portions of the designs were constructed by these men from their books on Italian or English art, but modified by their own limitations and peculiar conditions; their work was decorated and ornamented with details which they imported from England, and it is true that these ornaments were not always used as their English creators had intended. For example, where the older English forms failed to conform to the changes occurring in the basic design, new ornaments were devised by these clever and independent Americans; so that while we find scattered throughout the eastern colonies many examples of Georgian expressions which are exactly similar to those found in London, in Bath, in Salisbury, and throughout England, there are yet more numerous examples to be found which illustrate the intended or accidental violation of the English academics. There are also those examples which are radically different from the English mode, and which were created by our people out of the whole cloth.

In his younger days the writer made a special study of the Georgian expression both in this country and in England, and the

local variations from type are most interesting and instructive. They indicate the same progressiveness and growth which has occurred in the style development of Europe; and this calls attention to the flexibility of the Classic forms.

It is frequently asserted that the older American examples must be literally copied and reproduced in order to accomplish Colonial results under our modern conditions; that this is untrue is proven by the entire history of architectural growth. The members of our profession who have studied the English examples, in fact, and from photographs and measured drawings, have found it quite possible to design and create examples which possess the family traits, and yet are true growths or new movements in form and composition. It is by this method that styles change and expand into new expressions and that entirely new types are created.

That localism in Renaissance which we call Colonial seems to have become our own expression; if not misused, it can be made the common language into which we may incorporate architectural phrases from the French, the Italian, or, indeed, from the ancients. The style seems to have been

accepted popularly as one which can only be used in domestic work, but some of our earlier examples in federal, state, and civic architecture can be strictly interpreted as belonging to this Georgian or Colonial mode.

Our Colonial is an outgrowth of the Classic revival in Italy in the fifteenth century; it is kin to the Italian, the French, and to the English; but it is a distinctly American product, and consequently as independent as are the expressions of the European nations.

We must accept the Colonial as belonging strictly to the seventeenth and eighteenth centuries, and not in any sense related to its counterpart of the nineteenth century; this latter we must consider as a Greek revival, for some time prior to the Revolution, and carrying through to a period which included the second phase of the war for independence in 1812, the English influence was smothered by our enthusiasm for the French, and the later decadence of the Georgian shows this change of feeling in the architectural expression. The Roman Classic, which was the basis of the Georgian, lost its snap and developed such crudities in line and detail that we must accept the period as decadent; then occurred a most interesting, fascinating, and subtle movement co-

incident with that which was going on in Europe and in Asia.

Remember that in France the professions were preparing themselves for the Empire style as sharpened with Greek keenness. In England the introduction of the Greek influence began as a revolt against the downward curve of the line of progression in the latter part of the eighteenth century and carrying over into the nineteenth. The Turk was compelled to permit the investigation of the architecture of ancient Greece; the old examples were studied by the Italians, the French, and by the English; and the world, as expressed in architectural form, again became Grecian.

England had her Greek struggle against the influence of the Roman, as France had had; and here in America appeared a body of austere men, Presbyterian in character, who were a product of the earlier Puritan. This type of man seemed to harmonize with the severe and keen cleverness of the Greek. The architectural expression of ancient Greece is an expression for the gods, an expression created by a free race and a dominant people, proud in their control of this world and assured of their domination in the next. It is not, therefore, surprising that the people of

our country should find this earlier expression peculiarly fitting to their own racial temperament. Because of this condition, and since we were no longer colonies and dependent upon the mother country for our architectural education, we accepted this new mode, changed our tailor, as it were, and insisted that our architectural garments should be cut and fashioned after the method of the Greeks.

In the cities of the sea-coast, from the South to the North, and as far inland as cultivation and success in trade created an influence, we find the churches, the banks, the houses of the merchant and the squire, the office-buildings, the hotels, the custom-houses, and, indeed, all of the architectural expressions of this first half of the nineteenth century created in Greek, and pure Greek at that.

This adoption of the Greek form of expression extended through the earlier quarter of the century, and continued until the political agitation which preceded the discussion of state rights and the Civil War put an end to both desire and opportunity. The progress of art was interrupted and smothered under the overwhelming popularity of wax-fruit-and-funereal-hair designs;

and we, in common with France, under the influence of the court of Louis Phillipe, and with England, throughout the early Victorian period, were lost in the maze of crudities and bad taste.

But movement in the expression of the fine arts can never be interfered with for any length of time, and success in trade and industrialism are factors which must be considered always in the study of the fine arts; these are truths which may be easily proven by the development of civilization in our own era, since the stoppage which was caused by the great Civil War.

While the architects of our time are subject to the ancient laws, they are compelled by modern conditions and by the necessities of latter-day civilization to create new modes and to devise new methods of design composition. In many cases this has been too great a task and some horrible examples of adaptation without invention or development may be quoted. But there has been, and there continues to-day, a steady improvement in our architectural expression, and it possesses the all-essential virtue of sincerity.

While we use the post-and-lintel type in some forms, this has been superseded to a great extent (as also occurred in the Italian

and French Renaissance) by the wall employed to support the floors and the roofs. The pier-and-arch is rarely used except in the Gothic of the more ambitious churches, and this is frequently ornamental and not structural, as in the Middle Ages.

We have invented a new form of support which necessarily influences our architectural expression—that of the steel column and the steel beam, or girder; and this method has its own peculiar effect on the use of material for the façades. There we are still subject to the Renaissance progression which has been the mode since the fifteenth century; like our predecessors, we emulate our immediate associates; there is a constant ebb and flow of ideas, but the art continues to live and move.

Since the Civil War we have had our own men, great in the history of architecture, and great in the schools which they have founded. The men of the present generation are the pupils of these few men of the antebellum period; we have our Greek translators, our Roman students, and our Renaissance-lovers. Hunt, McKim, and Richardson are gone, but there still remains a vitality and a sincere respect and appreciation for the traditions which those men

have passed on to their pupils and successors. Our men are making a new chapter in the history of fine arts, and this will be classified by the historian of the future exactly as we to-day classify the work of the ancients.

While at the present day we are not doing overmuch creative work in the master art of architecture, the sculptor and the painter are creating standards in their special forms of art which do not conform to the dicta of academy rules and laws. These artists are free men, and the quality of their work depends solely upon the personality of the creator.

In the composition of a marble group, of a canvas, or of a copperplate, the artist follows the natural or basic law; and yet this may be violated under master control, as in the case of Mielatz's "Cherry Street." There the etcher has reversed his loads; the heavy black trusses of the bridge at the top are supported by the brilliant sunlight of the open street. This is directly contrary to the law, but it has been handled in such a masterly manner that the artist becomes greater than the law. It is interesting to note that Goodhue, in designing his St. Thomas's Church, smiled while he translated his poetry into stone, his work being

strictly subject to the laws of Gothic construction and composition; while Mielatz, in his etching of the same edifice, knowing nothing of the architectural molds and forms of the Gothic, has made a print which is quite as great and quite as Gothic as the masterpiece of Goodhue. The elder Innes, our greatest landscape painter, in common with all painters, would move a tree or a fence from the spot where nature or the farmer wished it, in order to make it conform to the higher law of composition; and yet his canvas was nature. The architect cannot work with the freedom of these master men; he may play on variations, but his masses and his details must absolutely coincide with those of the style or period in which he is working.

In the Washington Building, which is owned by the Pan-American Association, the architects were compelled by academy law to follow in exactness the Classic column and its parts; but with the cleverness which is always creative they omitted the Roman and Greek acanthus and other decorative details, substituting in a most logical and natural method those forms of plant life and the symbols which are distinctly North and South American. This is precisely what

the Greeks did in their own country and in their own time, and what the architects of the Middle Ages did in the development of that other master style, the Gothic.

In closing, the author wishes to impress upon the reader the importance of some knowledge of architecture and of the allied fine arts. Its expressions are as common in life as the most ordinary necessity, and the examples of Greek and Roman Classic, of Gothic and the variations of the fifteenth-century Renaissance, line our streets, fill our cities and towns, and affect and color our manners, our furniture, our rugs, and our china. The textiles which we use in our garments and the method of application in jewelry and precious ornaments are dependent on the rules and laws which the art of architecture depends upon, and which the ancient worthies have considered necessary in the physical expression of religious idealism and of the more ordinary and every-day necessities of life.

THE END