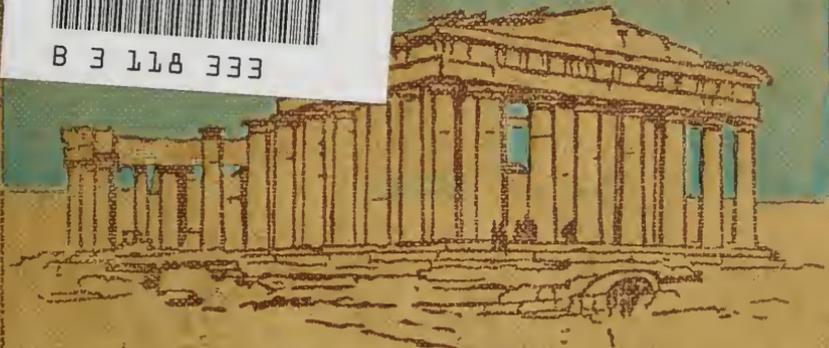


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OUTLINES OF ART
HISTORY

VOL. I.

ARCHITECTURE



JAMES FREDERICK HOPKINS

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CATHEDRAL OF AMIENS, FRANCE.

OUTLINES OF ART HISTORY

VOLUME I.

ARCHITECTURE

BY

JAMES FREDERICK HOPKINS

Director of Drawing, Boston Public Schools



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OUTLINES OF ART HISTORY
VOLUME I.
ARCHITECTURE

To my Wife, — with whom so many of these Masterpieces have been enjoyed, and whose inspiration has done much to make these pages possible.

• • • PREFACE. • • •

WE present in this little book a non-technical outline of architectural development prepared for the use of the teacher with her boys and girls. If we have chosen a fresh standpoint for our study it is because we believe that clear pictures of historic nations may be best constructed from what they tell us in their monuments. Succession of developing styles alone cannot interest as do the people who gave them being as the best expression of their daily lives.

Assuming that theory and knowledge of constructive details rightfully belong to older students, we have tried to read the monuments with the eyes of the pupils who are with us today, and who will express their maturity in the architecture of the future.

J. F. H.

BOSTON, *Dec. 28, 1899.*

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OUTLINES OF ART HISTORY

VOLUME I.
ARCHITECTURE

VOLUME II.
SCULPTURE AND ORNAMENT
(In Preparation.)

VOLUME III.
PAINTING
(In Preparation.)



CHAPTER I.

INTRODUCTORY NOTES.

*To build, to build!
That is the noblest art of all the arts.
Painting and Sculpture are but images,
Are merely shadows cast by outward things
On stone or canvas, having in themselves
No separate existence. Architecture,
Existing in itself, and not in seeming
A something it is not, surpasses them
As substance shadow.*

— LONGFELLOW in "*Michael Angelo.*"

*Greece was, Greece is no more.
 Temple and town
 Have tumbled down ;
 Time is the fire that hath consumed them all,
 Statue and wall
 In ruin strew the universal floor.*

.



A DREAM CITY
 An Example of Architecture.

*Say not "Greece is no more."
 Through the clear morn
 On light winds borne
 Her white-winged soul sinks on the New World's breast.
 Ah! happy West
 Greece flowers anew, and all her temples soar!*

*One bright hour, then no more
 Shall to the skies
 Their columns rise,
 But though Art's flower shall fade, again the seed
 Onward shall speed
 Quickening the land from lake to ocean's roar.*

— RICHARD WATSON GILDER, "The White City."



ADAMS SQUARE, BOSTON.
Illustrating Examples of Building.



ARCHITECTURE, the best expression of the artistic minds of a race, towers as far above mere building as the sister art of literature surpasses uncultured writing, or classic music soars beyond the simple song of a people. National architecture is a mirror in which may be more or less clearly read the mental, moral, and social development of a people; the influences which have guided their progress; and the great causes and reasons of being which have dominated the race since history first chose the architectural monument as the most enduring medium for her records.

Architecture
the expression
of the race and
mirror of national
development.

Necessity of a
right point of
view.

The specialist, the connoisseur, or advanced student may be interested in architecture in the abstract. The pupil in the public schools, however, and therefore incidentally his teacher, is not attracted by chronological tables of dates, or historical 'outlines which largely consist of dry details illustrating a supposed growth of style, one from another. Properly presented, an elementary study of architecture teems with interest for the boys and girls of the upper grammar and higher grades, but this interest must be maintained by a correlative, and not an abstract view of the subject. We must outline our study from a fresh standpoint, not a point of view which will say, for instance, a great people did thus and thus, and therefore left architecture of such and such a style. Our outlook must be one which will allow our mental vision to sweep over a vast field of results, influences, and environments in the hope that we may piece together a clearly defined picture of the peoples in question.

Architecture a
record of
dominating
causes.

In this way the architectural monuments we may visit, whether they be across the seas or a part of our own national life, may picture for our enjoyment some conception, elementary though it be, of racial characteristics, the mental and physical calibre of a people, and their history, religious or social. In like manner shall we hope to gain some conception of the influence of environment, climate, tradition, or neighbors; the modifications imposed

INTRODUCTORY NOTES.

or suggested by geology, flora, conquest, captivity, and commerce. For all these things, strange as it may seem, have influenced architectural expression in constructive methods, scale, arrangement, and enrichment;—all indeed in their totality being but the tangible record of great dominating causes.

Purpose of a structure and how accomplished.

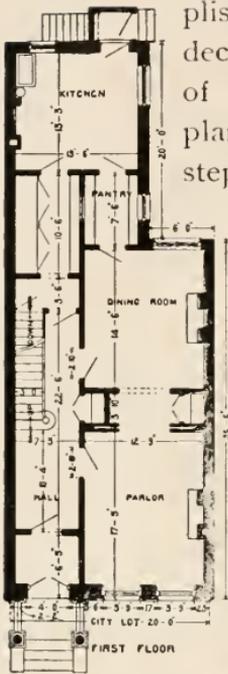
The general purpose of a structure, whether classed as architecture or as mere building, is to enclose space; affording protection against heat or cold, excessive sunlight, dampness, rain, or snow. This is accomplished by constructing some covering; as a roof, a ceiling, or lintels, supported by exterior walls, partitions, piers, pillars, or jambs, which sustain the weight of the covering portion and perform their function as inclosers of space.

Nothing thus far, it will be noted, marks the line between mere building and architecture. Now in practice, as we all know, this inclosed protected space is divided into, or made up of, many tastefully planned component parts, as for example, the rooms, halls, stairways, etc., of the ordinary house. When these parts are best arranged to meet the needs of the building,—do best express its use, to say it in another way,—the first step toward an architectural effort has been taken in the making of a satisfactory *plan*. From the composition of tastefully arranged openings, and harmoniously blended masses comes the restful *exterior*, and the second step toward an architectural result is accom-

What constitutes architecture.

Plan.

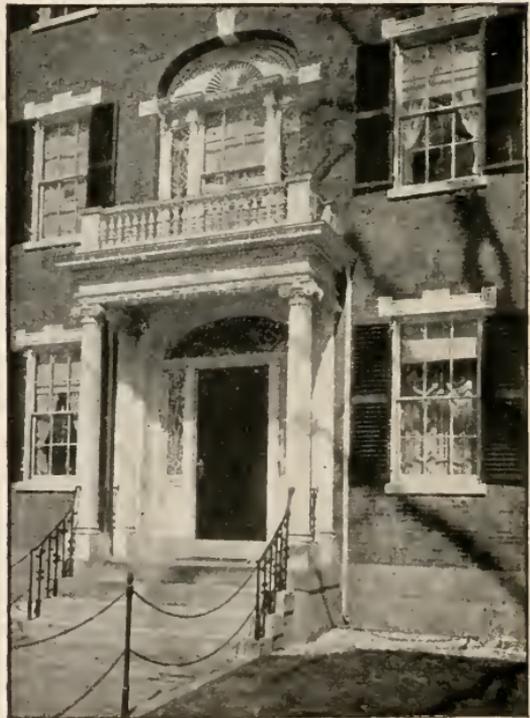
Exterior.



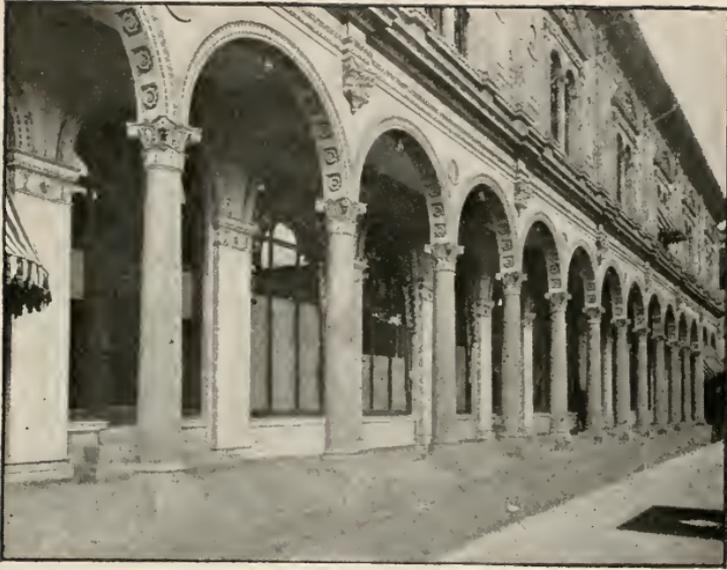
“A Satisfactory Plan”
 ical precision. Over and above all these attributes—the skilful plan; the truthfully composed, well-blended exterior; and tastefully decorating and refining enrichment—floats

plished. With the designing of fitting decoration for selected parts, the refining of lines and members, and the tasteful planning of ornament, we have our third step, the one which makes most seriously for an architectural accomplishment, refining *enrichment*. These are features of fine architecture, but when all has been said, we cannot adequately define artistic expression in terms of mathemat-

Enrichment.



A COLONIAL DOORWAY.
 “Fitting decoration for selected parts.”



HERALD BUILDING, NEW YORK CITY.

"The composition of . . . harmoniously blended masses."

that indescribable something, artistic individuality. This, like the fragrance of a flower, cannot be described, but adds the soul-satisfying perfume to the bloom of architecture.

Artistic individuality.

These characteristics are true of the finest architecture, whether it be the Parthenon rising in queenly grandeur upon the Acropolis at Athens, or the modest, yet artistically designed home on some tree-shaded street of our American commonwealth. Without these features, the most pretentious attempt falls short of its greatest accomplishment; with them the most utilitarian structure is ennobled into a thing of beauty. Equally important, more true of our modern architecture than in the historic styles, is the

Breadth of the field of architectural application.

OUTLINES OF ARCHITECTURE.

necessity of truthfully expressing the lives, temperaments, and thoughts of the people who build.

Molding influences.

Now that we have a slight idea of what enters into architectural composition to give it its greatest dignity, let us see what have been some of the molding influences which have played around architecture all these centuries of its development. We may then be in a position to reason more clearly concerning the modifying power of national environment, and thus be the better able to proceed to an enjoyment of the historic styles which are in very truth but the crystalized expression of these influences.

Power of racial characteristics.

The race itself is our first picture of interest. If a nation be slow to make up its artistic mind; is conservative in clinging to national traditions; hands its architectural inheritance as a legacy from father to son; yet brings a powerful enduring physique to the resourceful meeting of apparent difficulties;— then it will show this mental and physical calibre in the characteristics of its buildings. It will be a style of unchanging dignity, massive as becomes a conservative mind, and one in which it would not surprise us to find great engineering difficulties successfully overcome. Such was the Egyptian mind, and how transparently they expressed themselves in their massive buildings. A nation which possesses more mental vivacity; less conservatism regarding traditions; a national preference for emulation and

Egypt.

INTRODUCTORY NOTES.

the attainment of ideals; and a daring to do, invent, attempt;—such a nation will sing a more inspiring note in architecture. Are not the temples which crown the violet heights of Attica, the enduring ruins on Mediterranean shores, the wealth of refined ornament, and an ideal of sculpture which has breathed its influence for all these twenty centuries, but evidences of this mental calibre of Greece? An intensely practical, organizing, executive nation, with more pushing power than refined artistic sense, will show just as truly these national traits in its arts. Ask the books on ancient Rome their story on this point. Once again let us picture a nation, and then our suggestions regarding mental and physical character, sentiment, and spirit will close. We see in imagination a great warm-hearted, vivacious people of sturdy physique, an artistic temperament bound to rise high above all traditions which they knew,—a nation with a popular appreciation of artistic ideals second only to the Greeks. The soaring cathedrals, which are the delight of the European tourist, illustrate in their wonderfully diversified detail every characteristic of such energetic northern builders.

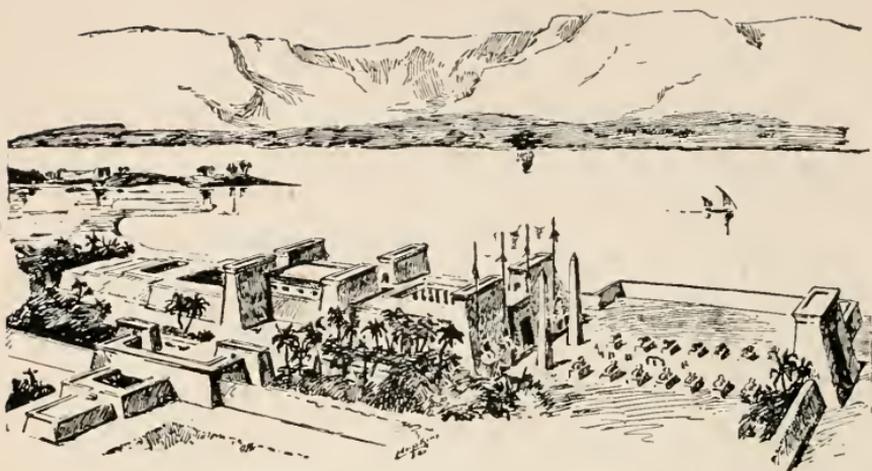
If the national mind and physique reflect themselves in architecture, certainly history, religion, and social life take just as prominent a place. In the story of a race may be traced the reason for many of its characteristics, and perhaps this chapter

Greece.

Rome.

Cathedral
builders.

Influence of
history, reli-
gion, and
social life.



A TEMPLE OF EGYPT. — AN IMAGINARY RESTORATION WITH DATA FROM LUXOR AND KARNAK.
"Religion gave the temple birth and form, social life its isolation."

is not the place to follow this feature to its solution. Religion, and social life dominated by it, have been and are still powerful inspirers of architectural expression.

Religion.

Religious views, the worship of the long lists of gods and goddesses, was the reason of being of the Egyptian temple; the conditions of social life gave it its form. The need of preserving the body beyond all danger of disturbance was the cause of the Egyptian tomb. When we have listed the temples and tombs of that interesting land we reach our limit in its architectural history. Building there was, and a vast amount of it, but the architecture of Egypt, from one end of the long valley to the other, could be practically included under these two heads.

Social life.

Religion gave the temple birth and form, social life its isolation. The Egyptian temple rested in the midst of a vast inclosure surrounded by a high

INTRODUCTORY NOTES.

wall, entered only at well-guarded, massive gates. Only the priests and the royal family entered that sacred inclosure, the people were completely excluded. Doubtless the interior of an Egyptian temple and absolute knowledge of what it con-

Egyptian temple an example.



INTERIOR OF ST. PETER'S, ROME.

“Contrast this (Egyptian) arrangement with the interior of a great Christian church.”

tained is more accessible to the American school-boy, who gains his knowledge from photographs which have travelled over fifty-seven hundred miles of blue water, than to many an Egyptian of forty-five centuries ago. Contrast this temple arrangement with the interior of a great Christian church, with St. Peter's, for instance. The temple standing hedged about with its excluding wall, its interior divided into comparatively

St. Peter's an example.

small rooms for the few worshippers who penetrated into these mysterious depths, marks a nation of caste, of barriers among the people which could not be broken down, of a priestly and a royal folk who were the few indeed, and an immense number of common people with lives little removed from slavery. Turn from that picture and look on the other, the well-lighted interior of the greatest church in Christendom. This was a building erected by contributions, and not the slavery of a people, for their common worship. It is open from end to end, and its interior is so vast that an ocean steamship might lie in the main body of the church, and to carry out the comparison, the masts would scarcely touch the soaring vault of the roof. This great building stands for a nation of free people, a place where the majority of worshippers of the imperial city could congregate, a temple wherein there is no caste, where rich and poor kneel together, and where religion covers like a cloak the social life, instead of disintegrating it by class distinctions. What is true of St. Peter's is true of every great cathedral, and indeed of every church throughout our broad land. Thus architecture expresses the religious and social life of a people, as we shall see again and again in passing from one style to another of those which religion has influenced.

Influence of environment.

The influences traced thus far are those existing within the race; now let us follow for a little while



THE MOUNTAINS BESIDE THE NILE.

“Shut off by the desert on the west, by the mountain wall at the east.”

the power of environment and the forces from without the race. A great national art cannot be of mushroom growth, nor does it come into being where the struggle for daily existence, for food, clothing, and shelter, is keen and severe. Art needs above all other things as a constituent of the soil in which it most readily grows, a sufficient assurance of provision for the material needs of a nation. It was therefore but the working out of a great fundamental condition which placed Egypt first upon the historic pathway in the dim misty purple light of a national dawning. The Nile made Egypt then as she continues her existence to-day. Without the beneficent influence of that

Assurance of material needs necessary for art development.

Egypt.

great river, the Sahara would extend unbroken from its western continental border to the rocky mountainous range overlooking the Red Sea. More of this side of the subject will come in a later chapter; suffice it to say at this point that it was the inexhaustible bounty of that favored river valley which made architecture possible. Shut off by the desert on the west, by the mountain wall at the east, by the sea at the north, it was a new and uninfluenced style which developed, a condition characteristic of prosperous primitive peoples aloof from the influences of neighbors. Thus Egypt developed; so the civilizations in the Euphrates valley grew; in like manner perhaps Greece progressed during her Mycænean period; and thus extended the Aztec civilization, to cite an example on this side the water. Architecture and geography may thus be studied together, even if we cannot always say that architecture expresses geographical conditions.

Euphrates.

Greek Mycænean period.

Aztec life.

Influence of neighbors.

Such isolated conditions as we have just traced could not last forever, and the influence of neighbors (see also commerce), who were either conquerors or the conquered, must be borne in mind. Conquest and captivity are therefore traceable in architectural expression.

Influence of climate.

In an early paragraph we said that the general purpose of a structure was to afford protection against heat or cold, excessive sunlight, dampness, rain or snow. This matter of climatic influence



TEMPLE OF EDFOU FROM THE PYLONS.
“Those structures erected where little or no rain falls.”

has indeed been so great that a large collection of photographs could be easily sorted with practically few errors into three great groups. The first would contain those structures erected where little or no rain falls,—indicated by flat roofs or no roofs at all. The second group would embrace those buildings of countries where considerable rain, but practically no snow falls,—shown by roofs slightly pitched. Last in order, yet much nearer our own clime, is the group of

Rainless.

Rainy.

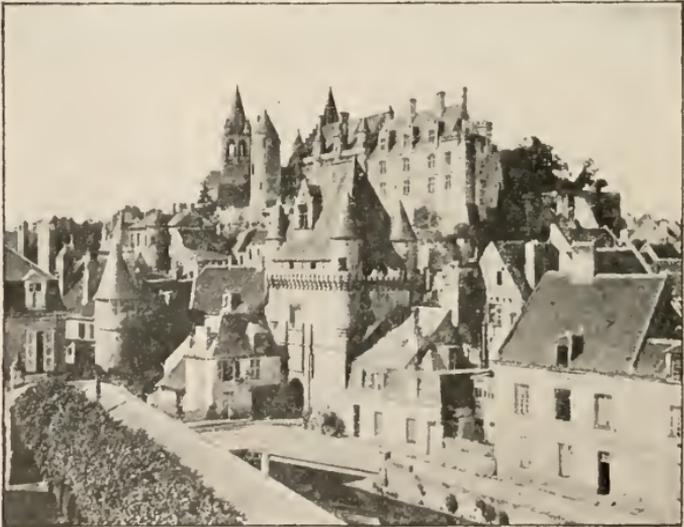


TEMPLE OF THESEUS, ATHENS.

“Those buildings of countries where considerable rain, but practically no snow falls.”

Rain and
Snow.

the sharply pointed roof, on which snow as well as rain falls and whose picturesque outlines, born



A VIEW OF LOCHES, FRANCE.

“The group of the sharply pointed roof.”

INTRODUCTORY NOTES.

thus of necessity, are so characteristic of the northland. There is a whole chapter on the influence of climate on architecture in our illustrations of the Egyptian Temple of Edfou, the Greek Theseum, and the picturesque chateau city of Loches in central France.

Geology, too, has had its influence. Egypt wanted to build for all time. Her selection of sandstone and granite but expressed her determination to outdo the elements. The refinement of Greek detail would never have been possible without her fine marble quarries. The vast amount of chiselled stonework of the cathedral builders was due somewhat at least to a stone 'at hand which, when first quarried, could be fashioned with a pen-knife, but which hardened into a weather resisting product of rare durability. How all these available building stones influenced constructive methods, is another story and must be handled in space by itself.

Influence of geology.

The flora and fauna of a district have not been without their influence. The lotus, mother of ornament we may almost say, how wide has been its power, and through how many styles do we trace its character. The acanthus of classic Greece and Rome we must constantly note as we continue our study. The use of floral ornament, the flowers which grew in their fields and along their high-roads, was more than half the charm of the cathedral builders' art. The grotesques and gargoyles

Influence of flora and fauna.

OUTLINES OF ARCHITECTURE.

which decorate their great churches are but modifications of the animals the sculptor knew or his imagination created. As an illustration of the introduction of the familiar animal we remember finding in the towers of a cathedral* which stood at the top of an exceedingly steep hill, the sculptured images of the oxen who had patiently toiled up that mighty incline hauling the stone to the work-yard. They did their work well, and there they stand to this day within the arches of the towers looking down patiently upon the scene of their toil and trouble.

Influence of preceding styles.

Traditions which descend from ancestral styles, if we may venture the term, have had wide influence, as, for instance, the building methods which came as a legacy from old Rome to the Romanesque constructors; or again, the extension of those same methods through Byzantine buildings into the Saracenic creations of the Mohammedan.

Influence of commerce.

Commerce, even more than tradition, has influenced the growth of architecture. It was commerce that brought Greece knowledge of what her neighbors across the seas were doing, and gave her the wealth to continue her columned glories. Commerce brought the color and decoration of the East to Byzantium and made the new buildings of the Christian faith rich with gold and mosaic. Commerce made Venice and gave art to the princely city. What a contrast between this

* Laon, France.

INTRODUCTORY NOTES.

city of the lagoons "always putting out to sea," and the isolation of Egypt's primitive people, with the desert on the one hand and frowning mountains on the other. Here, indeed, is a com-



VENICE FROM THE BELL TOWER OF ST. MARK'S.
"Commerce made Venice and gave art to the princely city."

parison of the influence of commerce and communication with the outside world, and again, the utter absence of it.

It seems a little out of place to discuss at this point the influence of the purpose to which a particular building is put, and yet the use of a structure is an influence apart; is not always controlled by religion, and cannot be said to be molded by constructive methods. Architecture

Modifying influence of destined use of a structure.

OUTLINES OF ARCHITECTURE.

certainly does reflect most clearly the destined use of a building as we have already seen in the plan of the Egyptian temple as contrasted with the Christian church. We shall see as we go on in our study how this same element of use was



TEMPLE OF ATHENA, AEGINA.
“The method of bridging space by the lintel.”

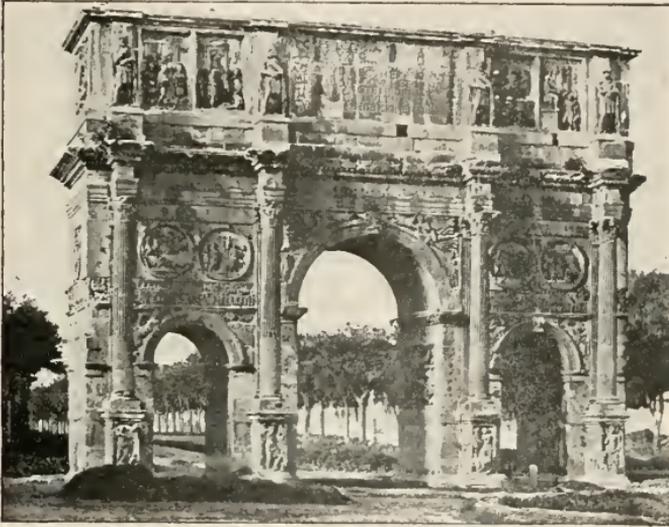
responsible for the Greek temple type, the civic structures of practical Rome, and all the many divergent yet related forms which the succeeding styles developed.

Constructive
types, the lin-
tel, arch, and
truss.

Architecture expresses itself in its own particular fields of development in many different constructive methods, but they might all group themselves under two very easily distinguished classes, based upon the manner of enclosing space. The first division embraces all methods

INTRODUCTORY NOTES.

of bridging space by the *lintel*, the second by the use of the *arch* as a space coverer. The modern engineering profession might name a third, classed by the use of the truss, but that with the



ARCH OF CONSTANTINE, ROME.
"Use of the arch as a space coverer.

limitations of our inquiry, must be passed over for the present.

The placing of a straight beam or lintel, whether of wood or stone, upon supporting columns, or between walls, is the simplest and the earliest method of building. The materials at command, the size of timber beams, or the ability to quarry long slabs of stone, govern the distance between the walls or the columns of such a structure and

Lintel type in use in Egypt, Greece, Rome, and the Renaissance.

so in a way limit its scale. The lintel style is a stable design, capable of many modifications and is most clearly marked in the historic development of the Egyptian and Greek temples, by the Roman temples based upon Greek ideas and by many features drawn from classic sources and appearing in the Renaissance.

Arch prominent in Roman, Byzantine, Saracenic, Romanesque, Gothic, and Renaissance architecture.

The use of the arch first comes into prominence in Roman days. It is a style of great practicality, requiring neither great skill in handling large masses, nor the finest workmanship in order to get results. Small stone, brick, and even concrete are capable of endless modifications under such a method, and although, as the Arab says, the arch "never sleeps," and is therefore always capable of upsetting itself, yet we look to-day on many an arch turned by pagan Rome and still doing good service after all these centuries.

The arch, dome, and vault.

From the fashioning of the arch springing from one parallel wall to another, to the arch principle resting upon a circular wall and forming a dome, was but a natural step and one of which the practical Roman early took advantage. Last to be given birth in this family is the vault, the roofing of space with either a continuous arch, or barrel vault, as in the picture of St. Peter's interior, or else the covering in of space between arch-like ribs, as in the vaulting of the Gothic cathedral. This question of vaulting will be taken up more carefully in special chapters. Looking back for a moment

INTRODUCTORY NOTES.

upon these two elementary systems, the lintel and arch, we see the first blossoming out into all the beauty of the Greek temple type. The second finds its culmination in the vault and the dome.



EXTERIOR OF ST. PETER'S, ROME

“ Research and a reviving interest in learning lie behind the architecture of the Renaissance.”

Architecture always has a great dominant cause for its reason of being and some great source of revenue to give it support. Religion and the Nile were responsible for the Egyptian temple, religion and commerce for the columned glories of classic Greece. Conquest and the necessities of civic life lie beneath the structures of the Roman world. Religion again comes into the question in the Byzantine, Romanesque and Gothic styles; Chris-

Cause of architectural flowering

Source of revenue.

tianity now for the first time adequately appearing and yet as an expression of what different conditions. For St. Sophia grew up under an imperial Christianity, the Romanesque church under monastic Christianity, and the Gothic cathedral as the great outburst of communistic Christianity. Research and a reviving interest in learning lie behind the architecture of the Renaissance, and how clearly it mirrors the period of its development in classic lines and details.



CHAPTER II.

ARCHITECTURE IN THE NILE VALLEY.

*Still through Egypt's desert places
Flows the lordly Nile,
From its banks the great stone faces
Gaze with patient smile.
Still the pyramids imperious
Pierce the cloudless skies.
And the Sphinx stares with mysterious,
Solemn, stony eyes.*

—LONGFELLOW in "*Hermes Trismegistus.*"



TEMPLE GATEWAY, KARNAK.

“Much of the richness of effect was due to . . . the play of light and shade on over-hanging cornice, sloping walls, and decoratively planned inscriptions.”



ISLAND AND TEMPLES OF PHILÆ.



EGYPT is a long, narrow, rainless, river-valley extending northward from beneath tropical skies to the blue waters of the Mediterranean. Eastward are the rocky ridges separating the valley from the Red Sea, westward lies the desert with

Egypt, the country.

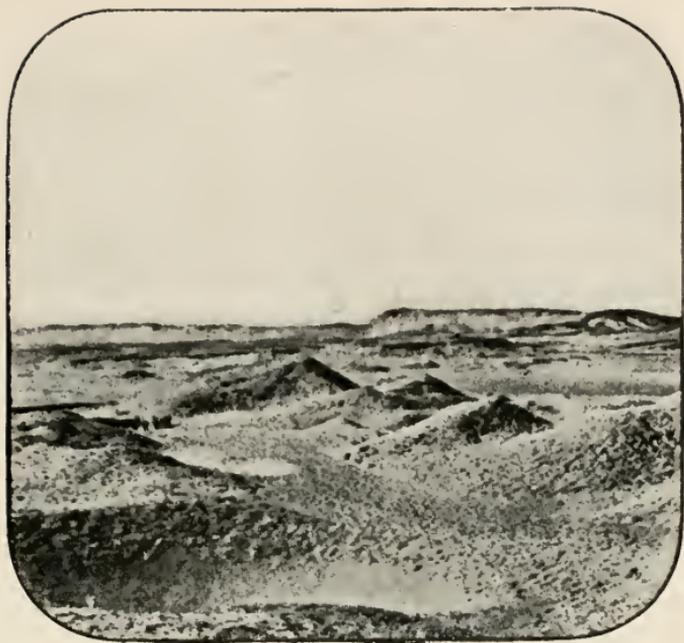
its hillocks of sand, to the south is the tropical table-land with its reservoir lakes and heavy annual rainfall, while at the north and against the sea the Delta spreads its fan-like outline. The alluvial soil forming the bed of the valley is nowhere more than nine miles across and in many places is contracted to much less width by the rocky ridges which shut in the stream. This narrow strip of green with the fan-like delta, so like the lotus in form, as pictured on the map, has been the granary

The Nile.

of the world, an agricultural storehouse to which history makes constant reference. Steadily and regularly each year the Nile rises and falls, reaching its lowest stage in late May and attaining its greatest height in September and October. Egypt does not to-day become the vast lake that the average school-boy pictures, for a net-work of canals and embankments now break up the land, serving to direct the water with its fertilizing mud to all parts of the valley. It is not our purpose to inquire into this phase of the mighty river in the development of civilization, except as it afforded a constantly recurring fertilizing power, thus guaranteeing the material prosperity without which no art development is possible.

Egyptian resources.

Beneath the sand and in the rocky mountainous ridges of the north, is an inexhaustible supply of sandstone which the Egyptian builder utilized to the utmost in the masses of his buildings. Far to the south, in the region of the cataracts, were the quarries of granite for the facings of pyramids and tombs, for obelisks, statues, and sarcophagi. Between these two sources of supply ran the mighty river with its easy communication from place to place. A high degree of civilization, material prosperity, equable climate, ambitious monarchs, adequate material, easy transportation, and abundant labor,—these were Egypt's possessions. Is it any wonder she was first on the artistic highroad of progress?



VIEW OF THE DESERT WEST OF THE NILE.

Where this interesting people came from and when they entered this favored valley we do not know. Somewhere under those shifting sands, still awaiting the spade of the excavator, may be hidden the evidence which will allow us to piece together the story of the babyhood and youth of the nation, but from our standpoint of to-day little can be said. When we first take up the story, about 4000 B. C., to speak definitely, it is that of a people well advanced in civilization, dwellers in large cities, and skilful in the arts. It is the lack of monuments which prevents our going farther back into the uncertain past; only when we come to the dynasties of the pyramid builders do we

The race.—Its known history.

begin to grasp some idea of the dignity of their attainments.

Judged from the artistic life of the Egyptians their history presents to us three most interesting periods. The first which opens with the dawn of history and extends onward to about 2000 B. C. (approximate date) is the period which includes the great tomb builders and in which the capital, much of the time, was in Lower Egypt at Memphis. Passing over the interval when the Shepherd Kings conquered the land and little of architectural interest was accomplished, we come to the second period, that of the temple builders. Upper Egypt was then the theatre of greatest activity for it was during this period that all provinces were united under the capital of "hundred-

Egyptian history and approximate dates.

gated Thebes."

Speaking only approximately, this period is one of one thousand years, from 1500 to 500 B. C. (approximate dates).

Following this second period,

this Egyptian Renaissance, comes the third, the minor and last, that of Greek rule, but a time of much building and marked by most interesting



PHAROAH'S BED, PHILÆ.

temples. This extends from 332 to 30 B. C. The political conditions of this favored valley were no less interesting than its physical and historical aspect. The Egyptian nation, said by Heroditus to number over five millions of people, were governed by an absolute monarch, the Pharaoh of the early empires, the Ptolomy of Greek rule. He was looked up to as the king, the father, the god of his people; ruler of empire, chief of state, and religious head of the nation. Next in the social scale were the priests, governors of provinces, and generals of the army, and from this class came the owners of the soil, to whom the common people were more directly responsible. Associated with this landed aristocracy and sharing equal rights with it, were the architects, musicians, and commercial traders, those captains of industry who were later to aid in sending the fame of Egypt over the world of their day.

Political relations.

Their religious life was also a powerful influence in their national character. Their list of gods was a long one, reminiscent, no doubt, of the time when every settlement, town, or province was under the protecting influence of some sacred deity. As the nation grew in age and stature, one deity seems to have become more powerful, taking his place at the head of the deified family as the Pharaoh presided over the nation. The elements also were worshipped, the sun, the moon, and stars, each and every one taking proper place in this

Religious beliefs.

Veneration of
mythological
characters.

somewhat complicated mythology. Various animals there were that were held sacred, notably the bull,—the god Apis,—the cat, and the crocodile. This, too, hints of ancient days, tribal relations, and totem signs. Closer to the heart of the average Egyptian was his mighty river, the bringer of all good gifts; to which he looked for support from well-watered and fertilized corn-fields, for shelter under sun-baked bricks of Nile clay, or rush-houses from the marshes; and on which so many of his festivals and pleasures were enjoyed.

Death and the
after-life.

The Egyptian idea of death and the after-life is exceedingly interesting. They were a nation of believers in immortality, a race which looked forward to an existence after death which should be but a continuation of the life they knew. The individual Egyptian applied to his own existence the social conditions of his country. As the nation was ruled by the Pharaoh, so an individual spirit presided like a king over his personal body, its duplicate in spiritual form, yet its master in very truth. Death released the higher elements of being, the soul, intelligence, heart, shadow, and name; but this guardian spirit went down into the tomb to be with and watch over the mummy. Lest the spirit should feel the need of sustenance in tangible form, frescoes and carvings of daily events decorated the walls, and a statue of the deceased, sometimes duplicated several times, was sealed with the mummy in the tomb. Great care

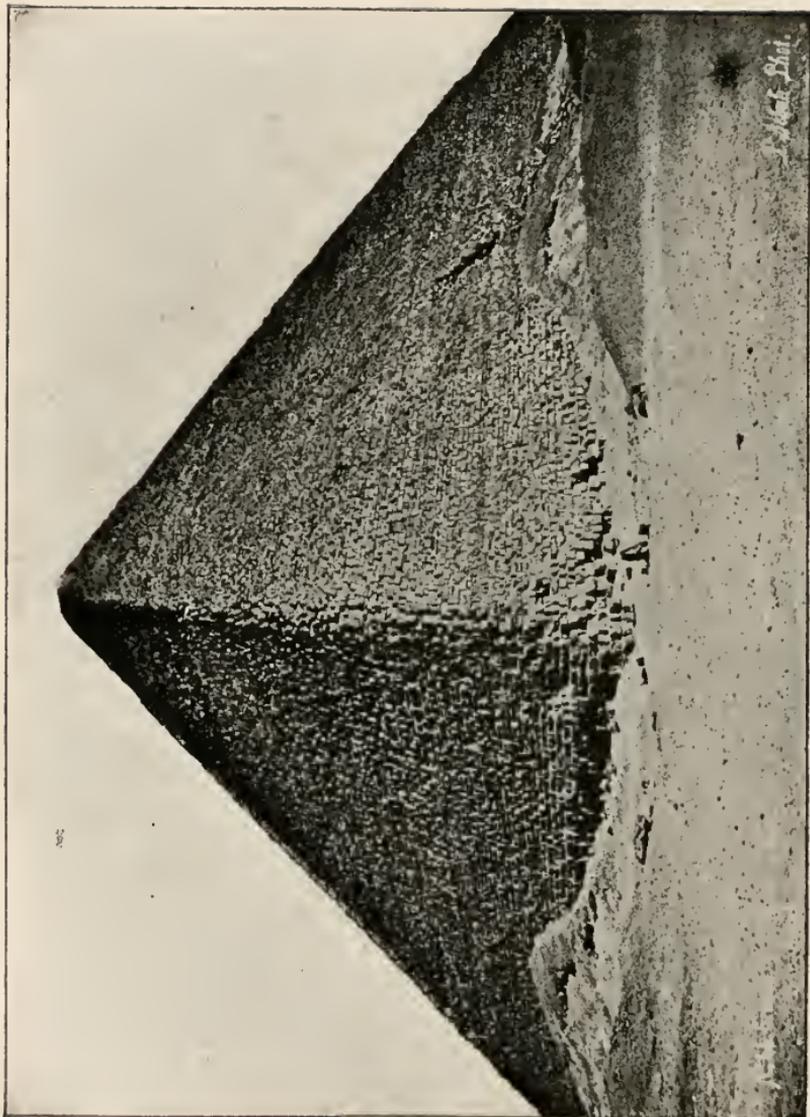
ARCHITECTURE IN THE NILE VALLEY.

was taken to preserve the body intact, and to secure it from molestation, for in the great day of reunion, when the soul returned from its wandering in the Valley of the Shades, the intelligence came back from following the gods, and the heart, shadow, and name sought their original owner,—then, if the body was intact, or the guardian spirit secure in its statue, might come the reunion and with it immortality, the personality of a god, and eternal happiness forever after.

This religious belief was the reason for the massive masonry of the many hundreds of tombs along the Nile valley, the excavation of which has yielded such a harvest of antiquities for the museums of the world. Desire for permanent preservation of the body rendered the tomb massive, the common household architecture was responsible for its form. The tomb was conceived as the "house of the dead," and as the spirit must abide there as the citizen had lived in his home, so the tomb was fashioned, although sometimes most elementarily, in the plan of a dwelling-house. There was of necessity, therefore, first, a fore-court, usually an inclosure in the open air in front of the tomb, sometimes represented by a recess in the wall of the tomb itself. The broad hall of the dwelling-house was copied in the chamber of the tomb in which offerings might be left by friends and on the walls of which interesting reliefs and paintings were fashioned. Beyond

Influence of religious belief on architecture.

The tomb, its plan and arrangements.



GREAT PYRAMID OF CHEOPS, GIZEN.

“The pyramids are but royal mastabas or tombs on a grander scale.”

and separated from the chambers by narrow passages was the inner room or chamber in which the statues of the deceased were sealed. This third division was that which corresponded to the living room or dining hall of the home. The mummy, secure in its heavy stone sarcophagus, was not in any of these rooms, but in a chamber below the structure described, cut in the rock beneath and reached by a well, passing through the mass of masonry back of the chambers. The exterior walls of the tomb, or mastaba, as it is called, sloped inward toward the top and were laid in heavy masonry. This description of the tomb, particularly the arrangement of court, chamber and cell, should be compared with the plan and description of the Egyptian temple, elsewhere in this chapter.

Rulers of other nations have lavished time and treasure upon the adornment of the royal palace; the Egyptian monarch glorified his reign with the great temple or the tomb. Under his absolute rule he could command the lives and labor of thousands of subjects, drawing from each province its quota of industrial conscripts, who worked their period and returned to the fields to be succeeded in turn by many thousands more. Under this system, known as the *corvée*, and still maintained in Egypt, the ruler might see even during his lifetime his ambitious projects materialize and the conceptions of his architects become real. When

Labor market
and how controlled



CLIMBING THE GREAT PYRAMID.

"The rugged pile of steps up which the tourist mounts slowly to the top."

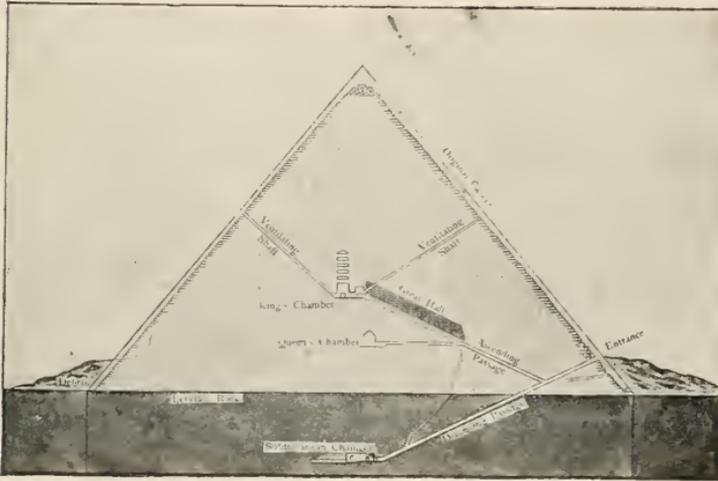
this home talent, to use a term, failed, there were the strength and sinew of the surrounding nations to be had for the conquest, and some, at least, of the Pharaohs were not slow to avail themselves of their opportunities.

The pyramids are but royal mastabas or tombs on a grander scale, larger because the ruler had

ARCHITECTURE IN THE NILE VALLEY.

greater resources at his command. These monuments, the grandest which we know in all the range of antiquity, occupy positions on the desert plateau overlooking the sight of old Memphis, and extend in more or less broken line from the

Pyramids,
royal tombs
Group at
Gizeh.



SECTION OF THE PYRAMID OF CHEOPS.

group at Gizeh nearly twenty miles south. We have become so accustomed to speaking of *the* Pyramids, having in mind the group of three at Gizeh, that we are very apt to forget the others which rise from that long city of the dead. The pyramids of Cheops, Chefren, and Mycerinus, the Great Pyramids, form with the Sphinx, a group which almost every American scholar can picture with eyes closed, yet a series which is always full of interest. The age of those mighty monsters and their dignity are something most awe inspir-

Great Pyra-
mids.

Sphinx.

ing. The Great Pyramid was truly one of the seven wonders of the world. The limestone or granite covering with which the monument was once sheathed has now completely disappeared, leaving the rugged pile of steps up which the tourist mounts slowly to the top. This mass of stone was originally 482 feet high and was about 768 feet on the side. Compare this height with the highest church spire or tower that you know and estimate the length of side by some well-remembered distance in order to understand the massive proportions. The interior of this interesting monument was reached by sloping passages, narrow, galleries, and halls. Everything was most skilfully planned to give to its royal occupant the security which his massive effort, this mountain

made by hands, could afford.

About a quarter of a mile from the Great Pyramid, and lying on the edge of the plateau, is the sculptured figure of the Sphinx.



DISTANT VIEW OF THE PYRAMIDS.

Its face is battered, the coloring has worn away, but yet it looks out over the valley and the "face still wears a smile."

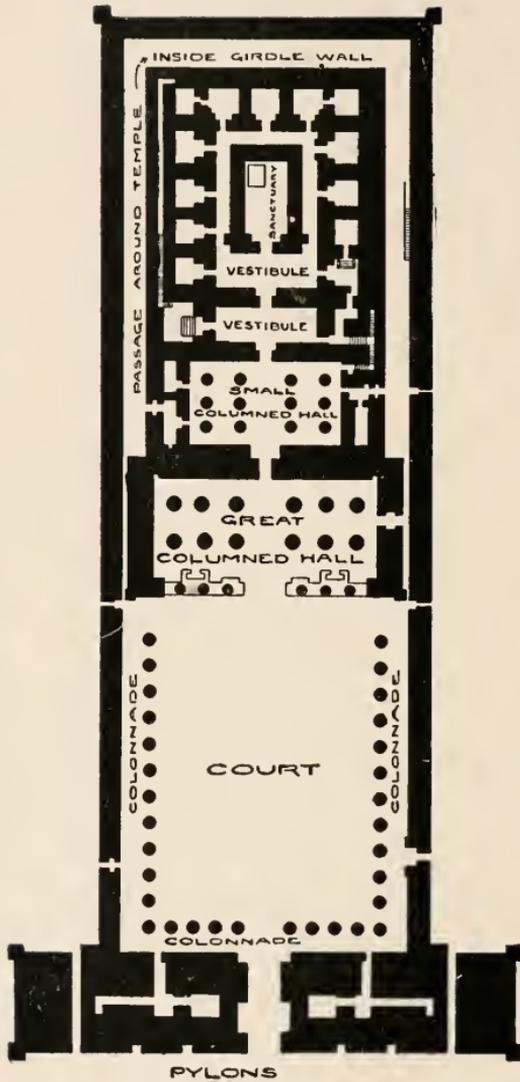
ARCHITECTURE IN THE NILE VALLEY.

Much of our knowledge of Egyptian history has been gained from the inscriptions, the hieroglyphics, with which almost every monument is decorated. Yet these interesting records which may today be read with comparative ease, have not always been so clearly decipherable. Indeed, for a long time they were a closed book alike to the scientist and the artist until a clew to their meaning was found with the discovery of the Rosetta Stone in 1789, during Napoleon's occupation of Egypt. A body of engineers at work upon Fort St. Julian near the Rosetta Mouth of the Nile, turned up this slab of black basalt which is now in the British Museum. We now know it to be a decree of the priests of Memphis conferring divine honors upon a king who ruled in Egypt nearly two hundred years before Christ. What interests us more, however, is the manner in which the stone is engraved, for the same decree is written in three different languages, the hieroglyphic, the classic language of the priests, the demonic or writing of the people, and Greek, the language of the king who was to be thus honored. The Greek could be read, the demonic partially deciphered, and by comparison, careful study, and much ingenuity on the part of the scholars, Young and Champollion, the hieroglyphic alphabet was unravelled and the written story of Egypt made legible.

Hieroglyphic
writing,

Rosetta Stone

The Egyptian temple was not made for the worship of the common people. It was a structure



PLAN OF THE TEMPLE OF EDFOU.



ENTRANCE TO A TEMPLE AT KARNAK.

"We walk in imagination along a paved avenue lined with . . . sphinxes."

massive, heavy, dignified and mysterious as became the abode of the spirit of a god whom the king and his associated priests delighted to honor. The people were excluded from the massive halls and only the favored few were eligible for entrance within the sacred precincts. As the tomb, the "abode of the dead," had been based upon the house of the living, so the temple, the abode of a god, was fashioned upon the same simple plan, only magnified many times in area, extent, and grandeur. The sacred inclosure, often containing lakes and gardens, from among which rose the massive masonry of the temple walls and towers, was shut away from profane eyes by a girdle wall of great extent pierced by gateways of dignity and grandeur. The general plan of temple and inclosure is very easy to understand. Once within the outer gateway we walk in imagination along a paved avenue lined with carved stone sphinxes, and leading directly to the twin towers of the temple which rise, gaily decorated with flag-staffs

Egyptian temple.

Inclosing girdle wall.

Plan of temple.

Avenue of sphinxes.

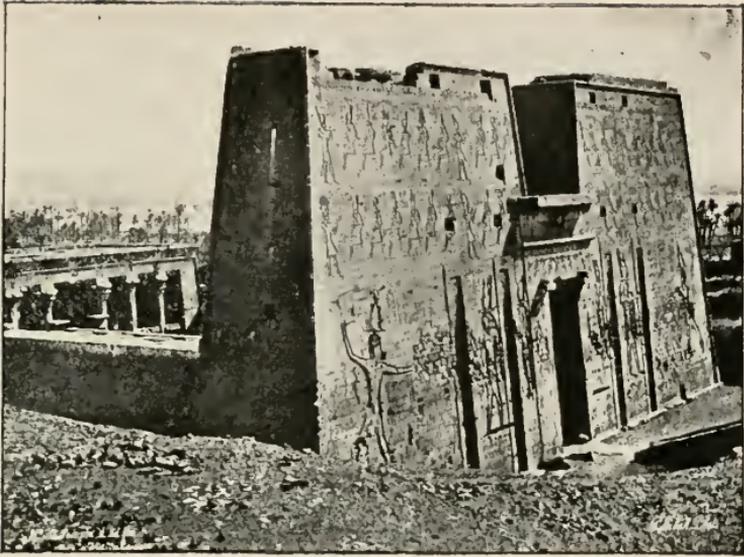
Towers, obelisks, and flag-staffs.



CLEOPATRA'S NEEDLE.
Central Park, New York.
"Those tapering shafts of polished
granite."

Court and colonnades.

and pennons, against the clear blue sky. Across the pavement we are treading extends the shadow of one of the twin obelisks, those tapering shafts of polished granite which were set up in front of every temple. Beyond and against the sloping walls of the towers are four seated colossal statues of the king. We can picture these things in imagination as we sit in some American class-room and think of those great ruins far across the seas. Let us continue our inspection, passing the tower gateway to the sunny open court within, where colonnades line the sides, the mass of the columned hall rises before us and everything is open to the blue sky and sunshine from above. This is indeed a conception on a grander scale of the national idea of house architecture. Ahead of us rises, as our imagination and photographs picture it, the columns and horizontal roof lines of the first columned hall, and beyond, extending in dim, mysterious twilight, is the succession of columned



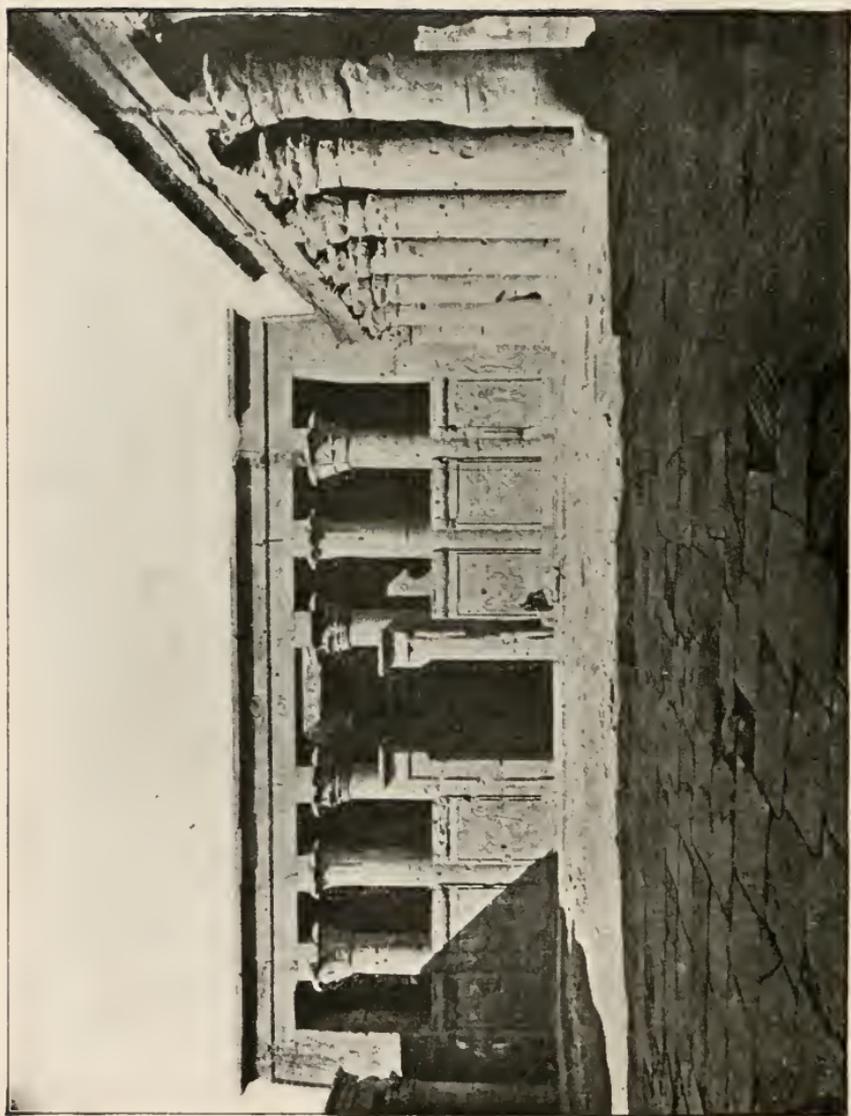
TOWERS OF THE TEMPLE OF EDFOU.

"The twin towers of the temple which rise against the clear blue sky."

halls and inner rooms for priests and attendants, all surrounding the sanctuary, the "holy of holies," and the spirit abode of the god. On the vast outer walls of the temples, carved deep in the face of the building stone, was the hieroglyphic story of the Pharaoh's exploits, wherein the king of most colossal size moved like a god among his people. Within the temple, on wall and column, was the story of the worship and relationship of the Pharaoh with the gods, and thus piety and ambition found in the temple their most fitting expression. The wealth of ornament and decoration with which these mighty buildings were adorned does not properly come into our line of architecture, but requires a story by itself. Every surface,

Columned
halls.

Hieroglyphic
and orna-
mental decor-
ation.



VIEW OF COURT, COLONNADE, AND FIRST COLUMNED HALL, EDFOU.
“Where colonnades lie the sides, the mass of the columned hall rises before us, and everything is open to the blue sky and sunshine.”



THE SANCTUARY. EDFOU
"The spirit abode of the god."

every member, was a field for artistic effort to the ancient Egyptian, and their columns and capitals, piers, panels, and ceiling decorations cannot be touched on here.

The characteristics of Egyptian architecture are easily summed up. Primarily it was a style of the lintel, the straight beam with the simple, plain support. The arch was known, but never used for monumental structures. The Egyptian forms, the towers, gateways, walls, columns, and architraves, were massive, dignified, and fashioned in most enduring material. Color and decoration were in

Characteristics of Egyptian architecture.



PROCESSION OF THE APIS BULL.

“The Egyptian temple was not made for the worship of the common people.”

extensive use and much of the richness of effect was due to this skilful use of color, or the play of light and shade on over-hanging cornice, sloping walls and decoratively planned inscription. The Egyptians were a warm-hearted, nature-loving people, accustomed to an out-door life, in a valley teeming with population and material riches. They drew their inspirations and their decorative details from nature, and they created a style which, for grandeur of conception, gorgeousness of coloring, and massive scale, has never been equalled in the history of art.

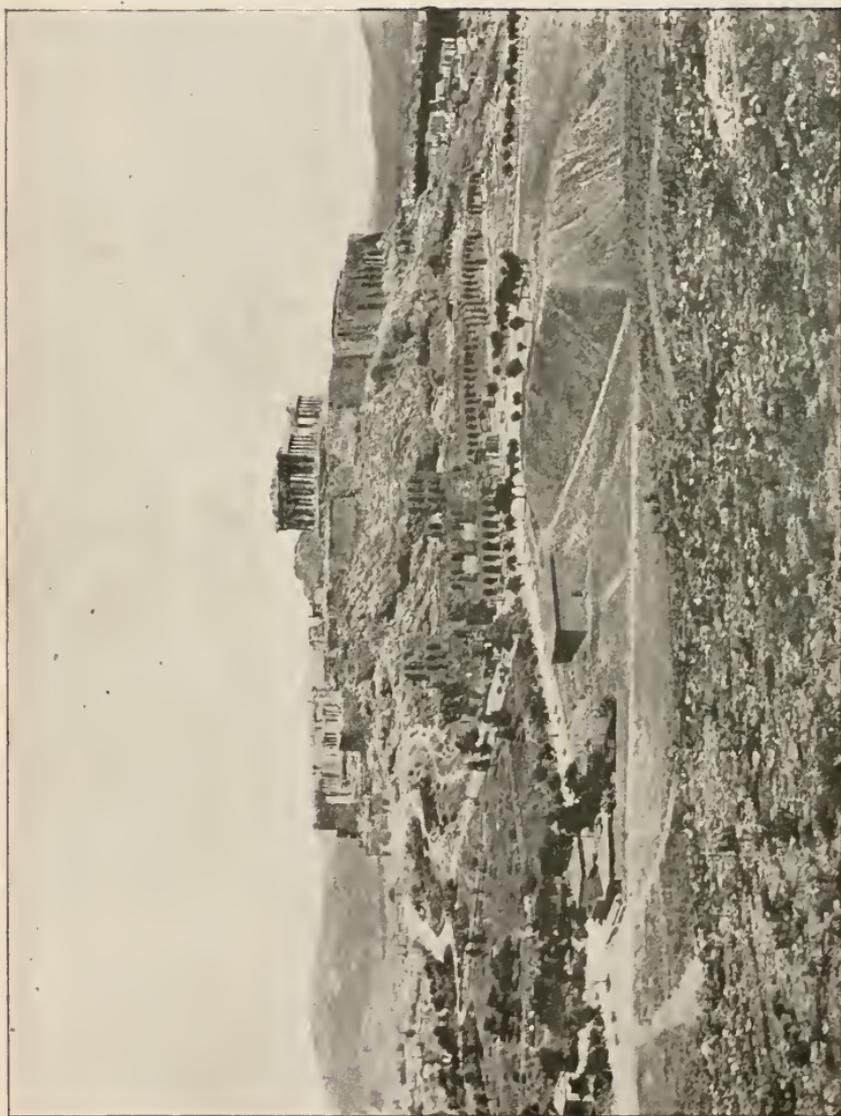
CHAPTER III.

COLUMNED GLORIES OF ANCIENT GREECE.

*Athens is Greece ; and where is Athens' heart,
That throbs immortal, if it be not here ?
The very dust is sacred, being a part
Of her great bosom. Every chisled stone,
Each base, each arch, each pillar, placed or prone,
To those who bow at freedom's shrine is dear.
Not less do they revere
This mighty rock who hold to Beauty's worth
In fusing thoughts of higher, grander things
Into the baser minds of earth ;
For here, with heaven-plumed wings,
Had love of Beauty birth.*

— CLINTON SCOLLARD.





THE ACROPOLIS, ATHENS.

"Oh, thou, our Athens, violet-wreathed, brilliant, most enviable city!"

*"I come from a land in the sun-bright deep,
Where golden gardens grow,
Where the winds of the north, becalmed in sleep,
Their conch-shells never blow."*



As traced in a former chapter the influence of a mighty river in making Egypt into a great united country. The development of Assyria and Chaldæa might be as interestingly followed along the banks of historic streams. To Greece, which

Sea-power in history.

had no Nile, no Tigris, or Euphrates, was given the deep blue of the Mediterranean to unite the people in the homeland with the settlements and dependencies on the neighboring islands and in Asia Minor, along the African shore, and on the the coast of Italy. Greece is a bright, sunny country with clear atmosphere, majestic purple mountains, verdant plains, and deeply indenting bays. It is an ideal land, a home of mariner and mountaineer, the birth-place of the grandest and most refined art which this world has ever seen. Separated by bays, hemmed in by mountains, isolated on islands, or located afar over seas, the Greeks developed strong, local characteristics.

Greece, the country.

The tribal relation and its results.

Geographical conditions brought about something akin to the tribal relation in which small bodies were ruled by the popular voice. These circumstances later developed the city and its dependencies, encouraged a healthy rivalry between the sections, and led to the erection of many temples in competing centres of art. Separated by physical conditions they were bound by common race-ties, by the defence of a native country against an alien foe, and by their great national games.

A word concerning Greek history.

The history of Greece presents a story of migration, invasion, local ascendancy, and far-reaching colonization which furnishes most interesting reading. Between the lines we may spell out the keynote of their national success, — eternal vigilance as the recognized price of liberty. Surrounded on every side by powerful enemies it is not wonderful that the Greek citizen felt the best service of his manhood was the aggrandizement of his city, its successful alliance against a common foe, and the perfection of a physique to insure victory in war, the only real pledge of national liberty. The Greek ideal was a man of untarnished descent, with a sturdy, active, well-proportioned, and therefore beautiful body. The training school of the young was the gymnasia; the physical bond of national unity the great Olympic games, bringing together in friendly contest the best blood of the race. This perfection of manhood and womanhood was more than the national ideal, it was

The national ideal.

ANCIENT GREECE.

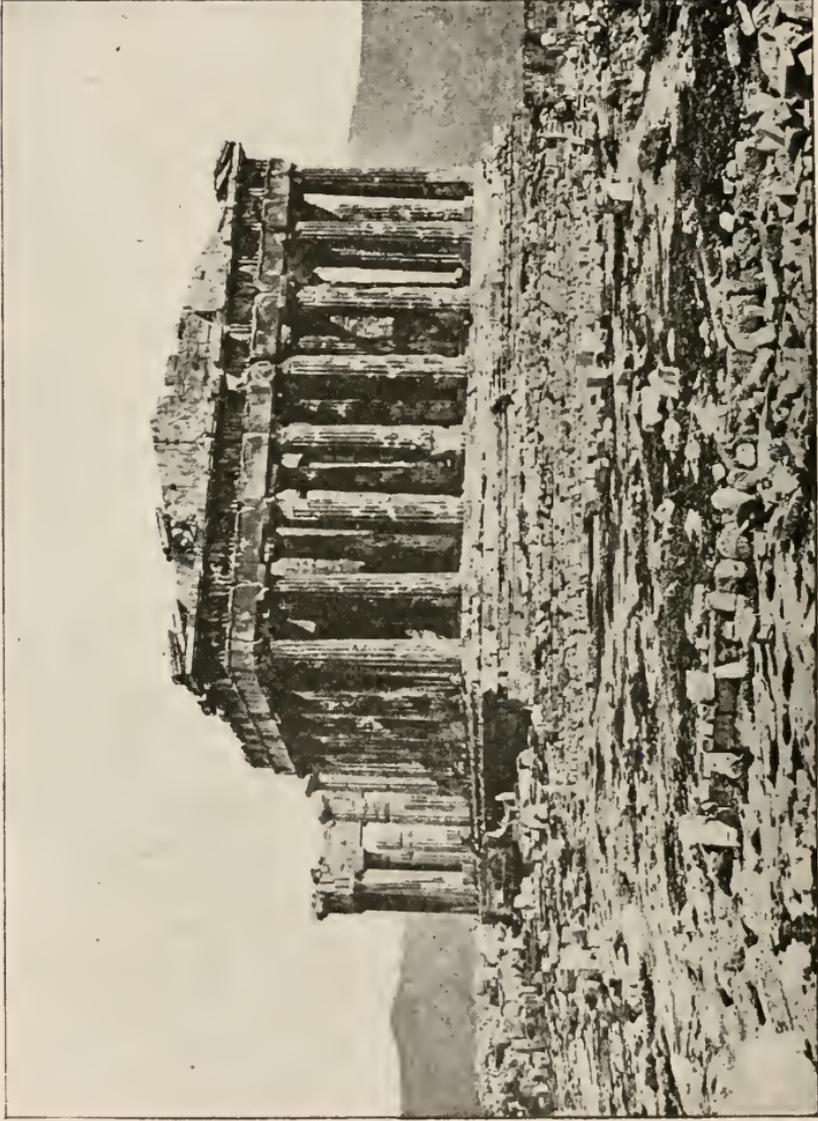
see the formal worship, and to give a grand building greater dignity, it was raised on a platform of steps forming a firm foundation, balancing the long roof lines above, and binding the structure into one harmonious whole. The sloping roof was the result of climatic conditions, and the lintel type of building a product of a land abounding in an easy workable building stone, executed in a fashion reminiscent, no doubt, of an earlier timber construction. Such was the Parthenon upon the Acropolis Hill at Athens, "the finest edifice on the finest site in the world"; so, too, was built the Thesium, on a lower and (see page 22) more level area of the same imperial city, and thus arranged were the massive ruins at Paestum, Girgenti, and elsewhere in Greater Greece.

General plan of the building.

Influence of religion, climate, and tradition.

At the close of the Persian wars Athens was politically strong, but artistically most unhappy. Her soldiers had seen the city made desolate and her temples razed to the ground. Trained muscles and patriotic intelligence had at last triumphed over the host of the enemy; and rejoicing in the vengeance which Athena had aided them to mete out to the invaders, the Greeks returned victorious to their ruined homes. The land was now free from external danger; security was the fruit of her victory; patriotism and gratitude to patron deities the watchword of her citizens. This is just the soil in which an art revival takes deep root,—Athens, in the days of Pericles, was no exception

Art development following the Persian wars.



THE PARTHENON, ATHENS

"(O)n the day of its dedication the Parthenon must have been worthy of a journey in from the islands to see."

ANCIENT GREECE.

to this general rule. Sculpture had shaken off its archaic characteristics and was ready for its most ideal expression. Architecture, strong on the constructive side, was ready for a grand expression of the highest refinement of detail. Phidias, the artistic friend of Pericles, was director of works for the reconstruction upon the Acropolis and calling to his aid Ictinos the architect, he began the Parthenon about 454 B. C.

Position of
Sculpture and
Architecture.

Phidias and
the Parthenon

This glorious building represents the high-water mark in classic art. Planned as the shrine of a wonderful new statue of Athena which Phidias was making, it shows every refinement which the Greek architect was capable of considering. The temple measures about 100 feet by 230 feet (101.25 ft. by 228.15 ft. to be exact) and was fashioned in the Doric style and from the finest marble quarried near Athens. The height from the platform to the top of the gable was about fifty-nine feet. Originally the gable ends of the building, the pediments, were filled with groups of sculpture, representing respectively the birth of Athena, and her conquest with Poseidon or Neptune. The metopes (spaces on the architrave of the temple) were filled with sculptured reliefs, and a most beautiful frieze was fashioned on the outside wall of the "cella" within the columned arcade. The building was treated with color, bringing the ornament into prominent relief, gold shields were affixed to the architrave, and beauti-

Details of the
building.

OUTLINES OF ARCHITECTURE

ful ornaments added decoration at the chief angles of the roof. On the day of its dedication the Parthenon must have been a building worthy of a journey in from the islands to see.

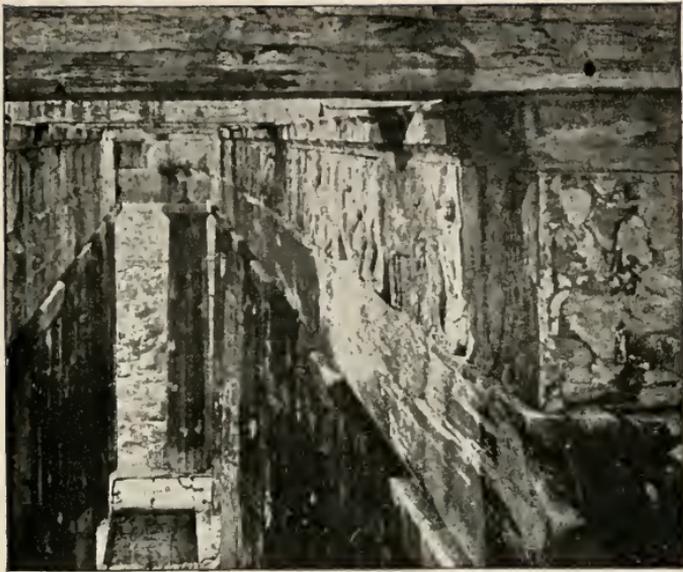
Festival days
in Athens.

Once in four years the wealth and culture of Athens and its dependencies united to do honor at this great shrine of Athena on the Acropolis Hill, in a grand festival known as the greater Panathenaia. In this festival of the early summer season, when the city kept holiday for the greater part of the week, citizens from far and near assembled to honor their goddess. The festival had its purely religious and sacrificial aspects as well as the games and sports usually associated with such grand events. After the athletic events, musical contests, and chariot races, on the fifth day came the most imposing ceremony of all, the procession to commemorate the birthday of Athena, when there was regularly presented to the goddess a new robe woven by the most skilful ladies of Athens.

The Panathenaic
Procession.

On that processional morning, in the freshness of the early season, there gathered in the squares of the city the flower of Athens, the statesmen, literateurs, and generals who had made its name immortal, as well as the youths and maidens whose figures were the inspiration of her sculptors. The procession was organized by the ten magistrates chosen annually for the observance of certain religious customs. The heralds were

Organization
of the parade.



DETAIL OF THE PARTHENON SHOWING POSITION OF THE FRIEZE.

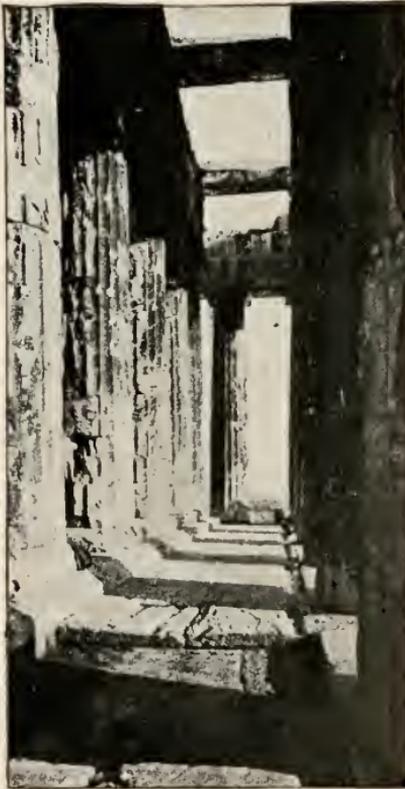
from the first families of the city, the marshals the heads of the city wards, and with them as a general staff came the chief magistrates, the generals, the treasurers, and the civil and religious functionaries of the city. Each colony sent its ambassadors and its quota of animals for the sacrifice, and Athens called her noblest daughters to carry the new robe and the sacrificial instruments. Even foreign residents had their part in this historic procession, each carrying his offering of cakes; there were the old men of the city with olive branches, the newly crowned victors in the preceding day's sports, and last, but by no means least, came the youth and nobility on horses with brilliant trappings.

Stories in marble.

Such is the story told in stone upon the frieze of the Parthenon, certain reproductions of which decorate the halls of many an American school building, and which

may be studied in more or less completeness in most of our great museums. It was, of course, absolutely impossible to represent every part of the procession as may have actually taken place, but in its suggestiveness it is most charming and when properly explained to the boys and girls, becomes a subject of great interest. The frieze was located upon the outer walls of the "cella,"

Position and character of sculptured decorations.



PASSAGE AROUND THE PARTHENON
INSIDE THE COLUMNS.

just below the ceiling stretching across to the columned arcade, and was almost thirty-nine feet from the floor. The sculptured story of the procession began at the southwest corner, and divided

ANCIENT GREECE.

into two parts, one running across the western end and along the northern wall, the other extending along the southern side. Both divisions met on the eastern end directly over the main entrance where the assembled gods and goddesses awaited in state the coming of the procession, from the right and left.

The Parthenon preserved much of its original glory, certainly its original outline, down to the war between the Venetians and the Turks in 1687. The commander sent to take Athens found the Turks in possession of the Acropolis. Learning that powder was being stored in the Parthenon, he ordered a bomb fired, which was so well directed that it exploded within the edifice thus far free from serious damage, and rent it asunder as we see it to-day. After that a Venetian general decided to take the central pediment group as a spoil to the city on the lagoons, but in lowering it the ropes broke and this priceless piece of sculpture was destroyed. Fortunately for us and our knowledge of this masterpiece of Greek art, a Frenchman had succeeded in making drawings of both pediment groups before the explosion. Almost every large work treating on this building reproduces the sketches of M. Carrey. At the beginning of this century, when the Turks still had Athens under their heel, Lord Elgin succeeded in obtaining permission to remove certain sculptures to the British Museum. This concession was so

The Parthenon in glory and in ruins.

The drawings of M. Carrey.

OUTLINES OF ARCHITECTURE.

The Elgin
Marbles.

construed that his lordship carried away about every movable thing of any value. These sculptures are therefore in the British Museum under the name of the "Elgin Marbles," and are doubtless



THE PROPYLÆA OR ENTRANCE TO THE ACROPOLIS.

seen by far more people than they would be in Greece.

The Doric
Propylæa.

The entrance gateway to the Acropolis Hill, known as the Propylæa, was fashioned like the Parthenon in the Doric style. Like the greater temple, its columns rested without a base upon the stone step-like foundations.

ANCIENT GREECE.

The column of the Doric style was a tapering shaft fluted with channellings and crowned with a capital of simple beauty. It is not unlike a cir-



THE DORIC PARTHENON.

cular cushion (technically known as the echinus) and sustained a square block of stone supporting the stone beams of the upper structure. This beam-like portion, known as the entablature, is really made up, from the standpoint of design, of three portions; the lower plain band is the architrave; above it comes the frieze, broken up into triglyphs and metopes; and above this and projecting as a shield for the weather is the cornice with its ornaments and moldings. We have ventured to go thus into detail for the benefit of

Notes on the
Doric order.

those who desire to read farther into this most interesting subject. Every large work on architecture, or the dictionaries and encyclopædias, will furnish a sufficient number of diagrams to enable the thoughtful reader to recognize these features of the Doric style wherever noticed on our modern buildings.



THE IONIC TEMPLE OF THE WINGLESS VICTORY.

The Doric was not the only manner of building adopted by the Greeks; there were the Ionic and Corinthian as well. The Ionic style utilized a column more slender than

the Doric and also differed from its predecessor in having the added refinement of a happily designed base resting upon the stone foundations. The column was channeled and tapered gradually upward to the capital, which was its beautiful and distinctive feature. The capital when examined closely seems to consist of two parts, a small cushion or echinus carved with ornament, and immediately above this the characteristic broad horizontal band, tapering toward either side and

The Ionic order and its details.

rolling over in a most elegant scroll or volute. A very light block or abacus, usually carved, was interposed between the top of the capital and the superincumbent beam of the entablature. The refinement of this entablature into molding or ornament, indeed the refinement of the whole order, marks a characteristic of the Greek artist. Within certain defined limits of construction he was absolutely bound by tradition and religious doctrines. It was heresy for him to overlook long established canons. His only opportunity for individuality lay therefore in the refinement of the architectural members and in the more tasteful design of certain well-known ornamental forms. Thus we may trace a growth from the masculine Doric structure to the more dainty feminine type of the Ionic temple, and a continued growth and development may also be traced into the later structures in which the Corinthian style is prominent. But to come back to our Ionic entablature. The architrave consisted of three broad bands separated from the long continuous frieze by a carved molding. The frieze dropped the divisions of the Doric order (triglyphs and metopes) and extended in a long unbroken band. Above the frieze was the projecting cornice, also more delicately treated and richly ornamented, as befitted a style strongly on the side of refinement.

The other two buildings of prominence on the Acropolis belong to this Ionic style. The temple



TEMPLE OF THE WINGLESS VICTORY, ATHENS.

Prominent
Ionic build-
ings.

of the Wingless Victory and the Erechtheum thus offer strong and interesting contrasts to the sturdy treatment of the greater shrine of the Parthenon. The characteristics of the Ionic style of architecture may be more readily traced in our American buildings than the Doric. It is almost impossible to walk a block in our cities without finding the interesting capitals, and country houses, even furniture, may be used as examples for illustrations.

The Corinthian style of architecture seems to be a development from the Ionic, the result of an

ANCIENT GREECE.

evolution in which bronze and metal work have played their parts. The chief difference lies in the capital, and before the period of Roman dominion in Greece, in its use in minor buildings.



THE CORINTHIAN TEMPLE OF JUPITER OLYMPUS.

The capital was in general form an inverted bell surrounded by two rows of acanthus foliage concealing branches which developed into spiral volutes at the corners. The abacus in this style was a prominent feature, a molded concave block of much beauty and æsthetic service. The capital, too, hardly needs a lengthy description to identify it, for it is a common heritage throughout this broad land, in buildings and in interior ornamentation and furniture. Some of the structures in Athens in the Corinthian manner are the Temple of Jupiter Olympus of Roman times, and the

Corinthian
characteristics and ex-
amples.



MONUMENT OF LYSCRATES, ATHENS.

beautiful little monument of Lysicrates under the Acropolis Hill.

We have already spoken of the national tendency toward artistic refinement of details as applied to ornamentation. The Greeks were a

ANCIENT GREECE.

race keenly alive to the fitting and the proper, possessing a sensitive nature, never excelled and indicated in other refinements than those noted. Thus in their great temples, especially the Par-



STYLOBATE OF THE PARTHENON.

thenon, the horizontal lines were fashioned in curves (see the illustration of the stylobate or steps) and vertical surfaces were inclined, thus avoiding stiffness incidental to right angles and furnishing optical illusions by the very refinement of these carefully planned details.

Our notes and suggestions of architectural development may seem to have been confined to the buildings of Athens, but when the story of their perfection is outlined there is really little more to tell.

OUTLINES OF ARCHITECTURE.

Beside their temples, altars, gateways, colonnades, theatres, and monuments all other structures seem insignificant. Truly, as one author has put it, the Greeks "built like Titans and finished like jewellers."

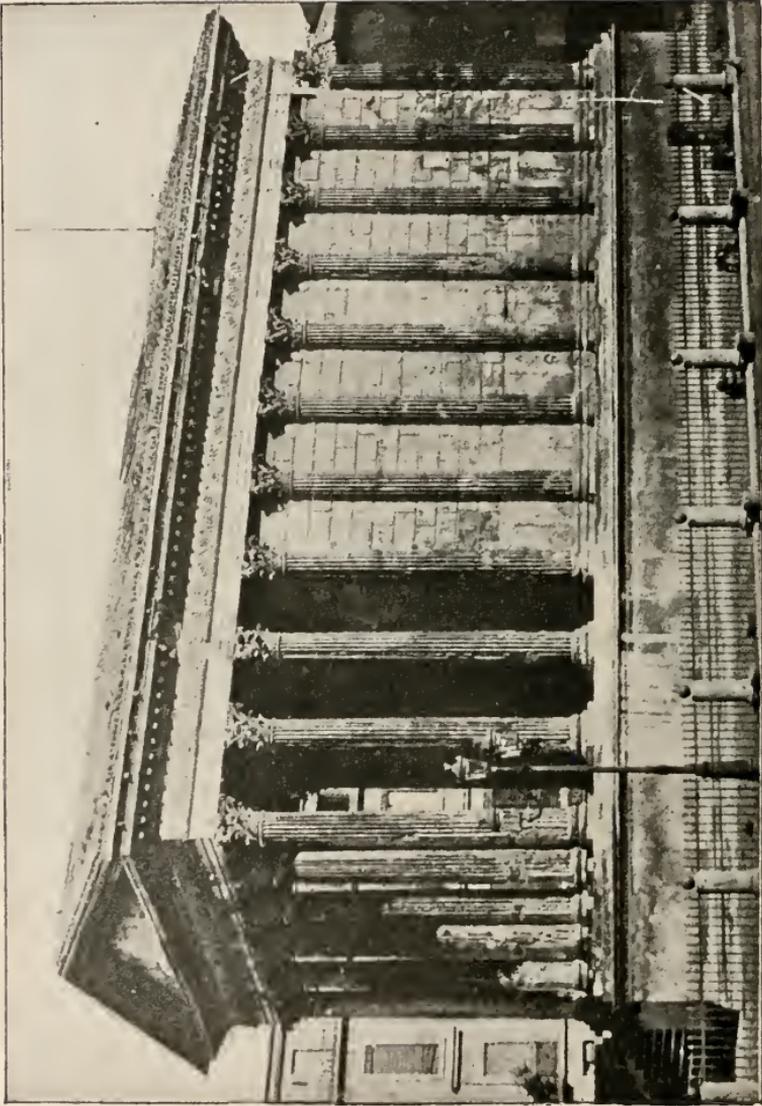
CHAPTER IV.

ARCHITECTURAL MONUMENTS OF IMPERIAL ROME.

*Over the Alban mountains the light of morning broke;
From all the roofs of the Seven Hills curled the thin wreaths of
smoke :*

*The city-gates were opened : the Forum, all alive,
With buyers and with sellers, was humming like a hive,
Blithely on brass and timber the craftsman stroke was ringing,
And blithely o're her panniers the market-girl was singing.*

— T. B. MACAULAY.



THE MAISON CARRÉE NÎMES, FRANCE.
"In . . . Nîmes stands one of the best preserved of these (temple structures)."



THE TIBER AND CASTLE ST. ANGELO, ROME.



NO stronger contrasts can be found in all the range of art history than those presented by the development of Greece and Rome. One nation held together because bound by the lightest of cords, common jealousies and mutual ambitions.

Contrasts between Greek and Roman organization.

The other could not be termed a nation in very truth; it was a power, united by the right of a terrible might. Greece was the idealist, weak in administrative ability, but strong in taste, culture, and artistic feeling. Rome on the other hand, had no æsthetic sense of native growth, and no time for art until after the development of its energetic

administrative power. Then came luxury, and an acquired taste made borrowed art imperative. Conservative Greece antagonized, organizing Rome assimilated.

Rome character and law.

Closely following the conquests of the imperial eagles, came the proclamation of Roman law, covering and sheltering, like the blue vault of the sky, the local characteristics, religious or national spirits. Rome grew great because of her indomitable pushing pluck, held her acquired power by might of energetic law, and when the onward movement failed, and the mighty fabric weakened, then there was no longer any Roman Empire in the strictest sense. Roman art was like the political organization. It was essentially practical, elastic enough to fit the requirements of all lands and nations, and every contingency of civic life. It reflected, however, in its luxurious growth, the vices of imperialistic existence; a lack of tactful, tasteful development, an intoxication from over-indulgence in power, and a wantonness in expression born of an utter lack of artistic conventionality. Greece was the cultured, conservative student, Rome the practical, hard-headed soldier, suddenly enriched by unexpected legacies and destined to spend his artistic capital in riotous extravagance.

Roman Art like her practical politics.

Weaknesses of her Art development.

Italy the home of this new style.

Italy was most favorably situated geographically for the home of this new art development. She was "the garden of the world," a land of beautiful

MONUMENTS OF IMPERIAL ROME.

climate, of most varied landscape, and a wealth of resources which were bound to sooner or later influence a great art development. Unlike Greece, the peninsula lacked many good harbors, yet perhaps this eventually influenced her internal development along the great Roman roads which necessity thus compelled her to construct from place to place. To the south and in Sicily, colonists had extended the area of Greater Greece and erected the massive Doric temples which stand to this day beneath the blue Italian sky. North of the Tiber valley, where the great imperial Rome was destined to rise, was the territory of the Etruscan tribes, those prehistoric engineers and constructors who were later to give their life blood to the architecture of the Roman power.

Physical character and early history.

Greek influences on Italian soil.

The Etruscans.

In following the architectural development of the Romans we cannot get far away from the progress of their general history. We may not go back to the days of the village community, nor yet stop to consider at any length the national struggle for existence and supremacy. We shall be interested, however, in the conquests which broke down the peninsula boundaries of the Empire and led to the establishment of the great world power where, as one author puts it, "as the streams lose themselves in the mightier ocean, so the history of the peoples once distributed along the Mediterranean shores is absorbed in that of the mighty Mistress of the World." Before this time

Roman history.



THE ROMAN FORUM.
"The ruins in the imperial city."

Recognition
of the need of
worthy archi-
tecture.

Source of
architectural
inspiration.

Greek influ-
ence.

there had been no architectural growth worthy of the name; now, recognizing that the complex elements of their national life required some expression and proper housing, an architectural development was instituted, which was destined to develop a new style of building. With conquest had come wealth and power, and like many another made suddenly rich, they turned to where they could secure the art example ready made and from whence the expert talent could be obtained to carry out the enlarged construction on this fresh soil. Thus Greek influence came to Rome, Greek statues stood in public places, and Greek architects labored in the city of the seven hills.

MONUMENTS OF IMPERIAL ROME.

In this way the Greek temple type was introduced and adapted itself to its new habitat. We remember from our study of the Greek temples how hedged about by constructive traditions they were, even to the extent that it was considered architectural heresy to vary the important elements of their arrangements. With such conservative ideas came the artistic Greeks to work for the practical Romans. How long the Greek temple type lasted is attested by the many ruins scattered through the Forum, elsewhere over the city, and in lands beyond Italy, but a part of the Roman Empire. Thus in southern France, in the old Roman town of Nîmes, stands one of the best preserved of these structures. It is not so large as many of the ruins in the imperial city, but it shows a building in almost perfect preservation as an evidence of the widespread influence of the lintel style of temple, born in sunny Greece.

The Greek
Temple type.

Its widespread
influence.

There was an evolution in the style of building on Roman soil even in the hands of these Greek architects. They gradually became Roman in their environment and their ideas. They were Greeks still in their æsthetic feeling, but they were becoming Romans in the fact that they were working for practical emperors who knew what they wanted to attain, and who allowed nothing to stand in the way of its accomplishment. In justice to those Greek architects it should be said, we venture, that once thoroughly free from the conserva-

OUTLINES OF ARCHITECTURE.

tive conditions of their native land, they expanded and grew to greater attainments. Æsthetic instincts inborn in a race may be hampered for a time by environing conditions, but once let such



AQUEDUCTS ACROSS THE CAMPAGNA.

æsthetic ambitions shake themselves free and something new, fresh, and original is going to be born to this work-a-day world. This is no new thought, the modern school of architectural criti-

Greek architects the probable authors of the arch, vault, and the dome.

cism being inclined to credit to Greek inspiration the dignifying of the arch and the vaulting of the soaring domes which became the distinctive features of the style.

Roman buildings of most flexible character.

The Roman architect conceived one very important principle in his planning of constructive design. No matter how ambitious or commanding his structures were, they had to be fitted for the purpose to which they were to be used and thus came the ingenious and flexible character of his art. Again, to a considerable extent he was governed by the conditions of the unskilled labor market. The workers were many,—there were the slaves,

The labor market and its responsibility for Roman building methods.

the army, and the common people, who in great numbers could be called to any project,—but those who from careful training were skilled to direct these workers were few indeed. It had to be of necessity a method of building in which the great foundation masses could be erected with ease and success. Yet such crude masonry, even although it formed a foundation core which has often stood like a rock until this day, was not the most pleasing to the eye and necessitated a covering or veneering of some more precious building material. The Roman building was, therefore, from very force of evolution, something different from any of the preceding styles, because planned to fit new conditions. It was erected by many unskilled workmen fashioning the supporting mass under the direction of the skilful few, and it was completed by adding a covering of more beautiful material, fashioned again by the many working to duplicate the comparatively simple units which in endless repetition added decoration if not individuality to the structure.

Rome was fortunate in an abundance of excellent building material. Nowhere outside the pen-

Building stone
marbles, brick
and concrete.

thus everything was at hand for an immense amount of ambitious effort.

Influence of
climate.

Beneath the arching blue of the Italian sky and in the warmth of a southern sun, there was slight need of fashioning the structures to exclude the cold or indeed to provide for the warming of the interior. But the light was bright beneath such a sky, and cool, shady interiors were only possible with the subordination of the window openings. Light came from openings in the roof, and in the Roman home exterior windows were of very little consequence.

Religious
ideas of the
Romans.

The religious ideas of the Romans certainly played their part in influencing these structures. The temple type which we have already noted came from Greece, was developed on perhaps narrower lines than on its parent soil. Certainly the people took less note of the interior, there was little of the interest in votive processions such as we watched in imagination on the Acropolis Hill, and religious ideas seem to have become conventional things, necessary parts of the civic system. Public life centered in the great baths, those fashionable lounging places for the elect; in the business exchanges; around the rostra of the forums; or in the courts of justice. Large halls and wide-vaulted areas became the national demand, and thus building expanded from very force of public necessity.

Civic life.

These things certainly influenced the methods

of the architect in meeting his interesting conditions. A great area is not easily covered by the units of the lintel style. Turn back, for instance, to the pictures of the Parthenon in the notes of Chapter III., and see the great number of columns needed to support the horizontal beams of the building. You will remember that the halls of the Egyptian temples were practically forests of columns necessitated by the limitations imposed by the inability of the quarryman to get out and transport stone beams beyond a certain length. Now where many people are to congregate, as in the baths, exchanges, or basilicas, many columns are out of the question and the flat lintel is therefore impossible. The Romans were the first people to realize this and to meet the new conditions, and thus arose the arch, the vault, and the dome. An arch we know springs from some firm foundation as an abutment and sweeps in varying curve to its corresponding support or abutment on the opposite side of the area to be covered. If a continuous wall, extending parallel to another continuous wall, be united by a covering like a succession of arches merged into one unit mass, then we speak of such covering as a vault. If a circular wall become the foundation or drum for a covering mass, which, rising upon the arch principle from the circular support, incloses like a hollow hemisphere the area of the wall plan, then we have the dome. (In the case of the example suggested

Building methods as influenced by social conditions.

Growth of the arch.

The vault.

The dome.

OUTLINES OF ARCHITECTURE.

Simple illustrations of Roman building methods.

a hemispherical dome.) This idea of methods of covering can be made clear to any class of children by placing two books with the backs to the observers and a foot or eighteen inches apart. If a strip of light mounting board, or tag stock, be curved and made to rest upon the books, we have the arch illustration. A succession of books and a wider strip of stock could serve to explain the vault, and a number of books placed to approximate a circular plan could easily illustrate the dome foundation and sustain a series of strips curved to extend across (like the ribs of an umbrella) from book to book. Perhaps this is architecture made easy, but it will serve to introduce to the children some recognition of the principles of construction which the Romans accepted and dignified as never before. There is much more which might be said concerning the extension of the vaulting system to cover building plans of various character, but for our purpose the more thoughtful study of this feature of architectural construction must come in a later number when we read the first hints of those massive buildings which were to be the pride of the cathedral builders.

The Roman was perhaps fortunate in that he had no hampering traditions to hedge his work about. Doubly fortunate was the artist who knew there were commissions awaiting him on every hand to which he could at least give his own

MONUMENTS OF IMPERIAL ROME.

individuality of arrangement. The Roman cities throughout the empire, in Italy, in France, in Spain, Germany, or the East, were treasure houses of architectural effort, in many places colossal, everywhere most energetic. Temples, basilicas, palaces, circuses, aqueducts, fountains, arches, exchanges, and dwellings, rose at the magic touch of abundant wealth, and although in ruin today give us some idea of the colossal power of this stupendous fabric of imperial power.

Roman architecture an expression of a stupendous fabric.

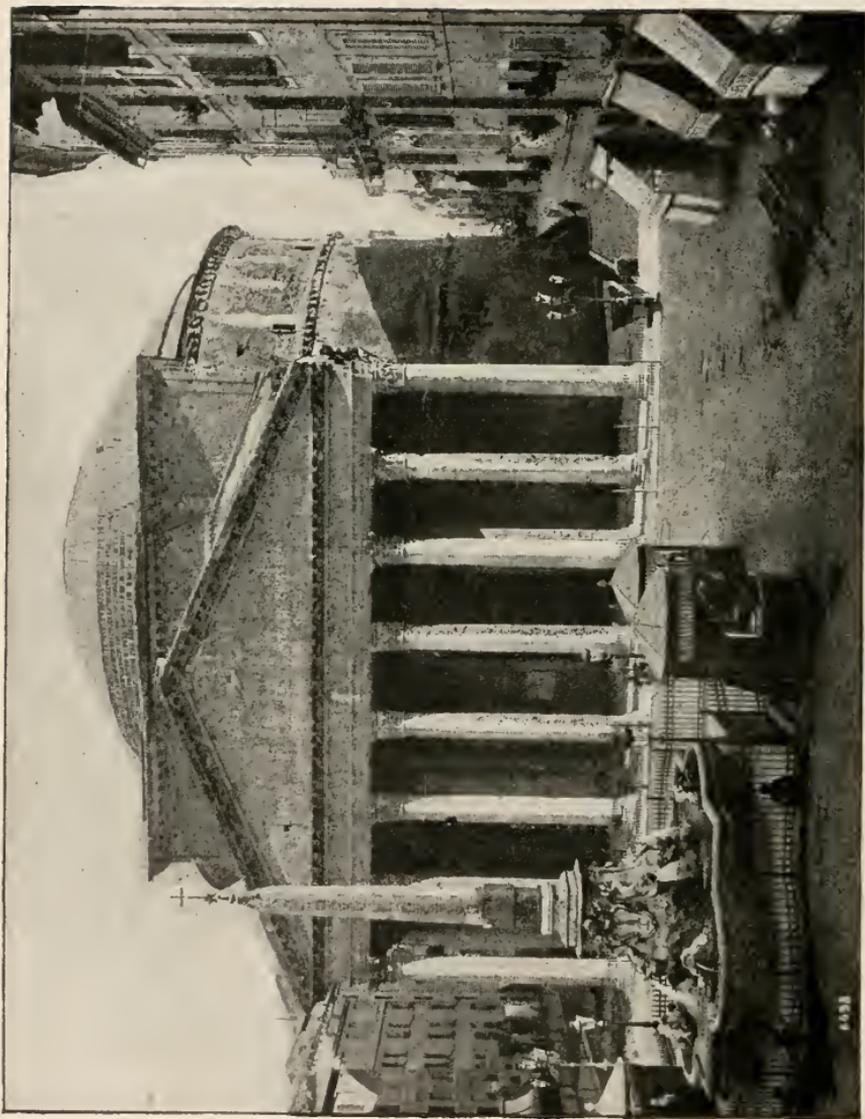


THE PONT DU GARD, NÎMES.

Many of the temples, basilicas, and business exchanges are in ruins, and the palaces, at least in the imperial city, can be traced only by the ragged lines of concrete foundations. Many of the triumphal arches still remain to us, and across the Campagna, bridging the hills of Spain, or dominating the landscape of southern France, extend the massive aqueducts once serving so usefully the cities toward which they were built. Should we select a temple, an amphitheatre, an arch, and a Roman dwelling for our closer study we might gain some more specific ideas of the national methods of overcoming difficulties.

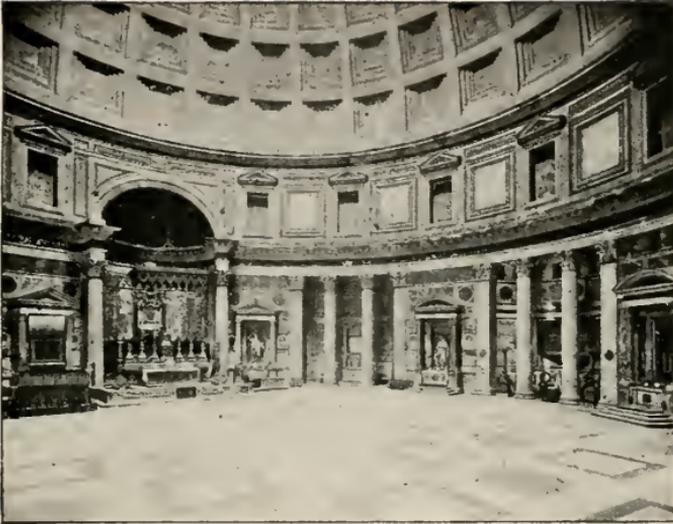
Roman ruins.

Typical examples.



THE PANTHEON, ROME.

“The Pantheon presents more characteristics of Roman architecture than almost any building.”



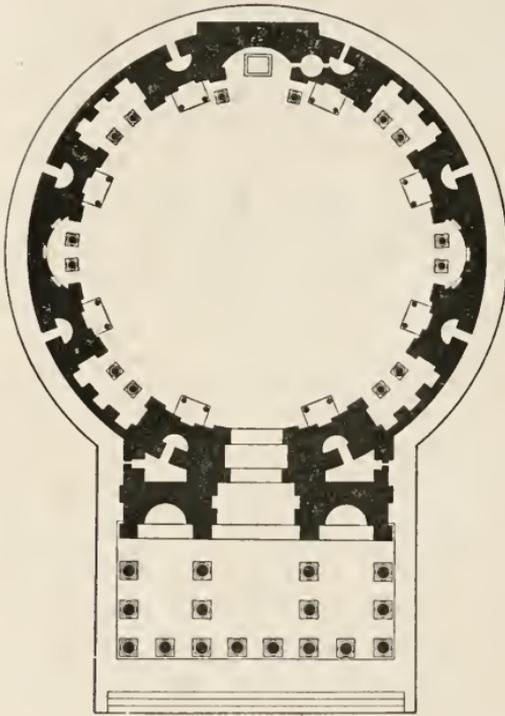
INTERIOR OF THE PANTHEON.
"The Pantheon is lighted only from above."

We have already said something about the Greek temple type transplanted upon Roman soil in the notice paid to the beautiful little Maison Carrée at Nîmes in southern France. Ruins of similar structures rise to-day in the valley of the Forum, where stand in lonely grandeur portions of the Temples of Castor and Pollux, Saturn, and Vespasian. Remains of many others, some of which have been modified into Christian churches, are also to be found in different sections of Rome, and elsewhere within the bounds of the empire.

The Pantheon presents more characteristics of Roman architecture than almost any building which could be chosen anywhere within the limits of Roman influence. Indeed it is the only structure

The Pantheon.

ure in practically perfect preservation which has been spared to us in Rome. Against the circular drum-like portion which forms the mass of the building, is built as an entrance portico, a hint



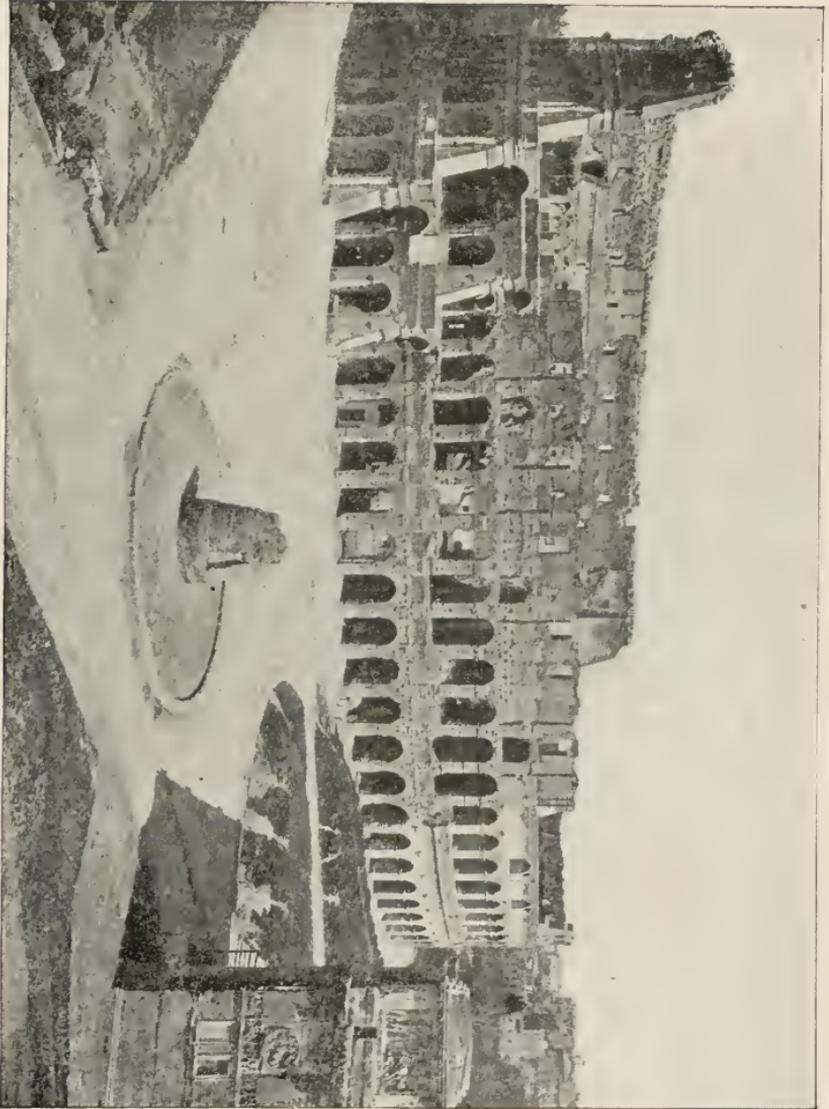
PLAN OF THE PANTHEON.

of the older temple type. The crowning feature of this massive structure is its soaring dome which rises with such majestic dignity from the circular wall and extends overhead like the arching vault of the sky. The Pantheon is lighted only from above, where

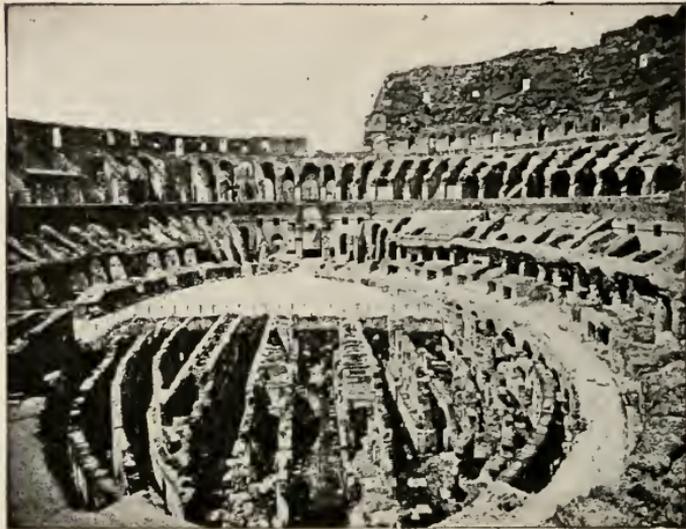
the sunlight comes streaming through a great circular opening some thirty feet in diameter.

The Colosseum is the largest structure within the limits of the city, indeed was the largest amphitheatre ever erected. Between eighty and

The Colosseum.



THE COLOSSEUM, ROME.
"The Colosseum is the largest structure within the limits of the city."



INTERIOR OF COLOSSEUM.

ninety thousand people could gather within that immense inclosure to witness the games and spectacles demanded by a cruel and hard-hearted populace. The building took its name from a colossal statue of Nero once adorning it and popular tradition still repeated in Rome makes the statement that, so well was it constructed that the whole audience could be dispersed in but a little over ten minutes. This building illustrates the decorative use which the Romans made of the column. Greek artists brought the Doric, Ionic, and Corinthian orders to Rome to be used constructively as under the Attic sky. Capital, column, and base were all modified to meet new ideas

Ornamental
use of Greek
Orders.

MONUMENTS OF IMPERIAL ROME.

of design, but the greatest modification of all came in the application of the column as a decorative ornamental addition. Study of the picture of the Arch of Constantine will tell more than words re-

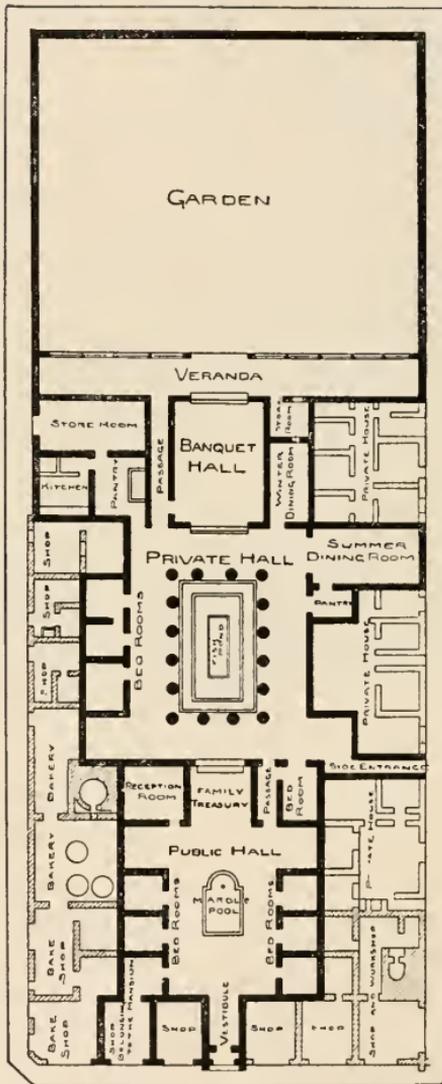


ARCH OF CONSTANTINE, ROME.

garding such decorative treatment. But to come back to the Colosseum. Here the columns show as partly built into the wall and illustrate the use of the orders in a most interesting manner. The lower story is adorned with the Doric order, above it rises the Ionic member, the third stage shows the Corinthian feeling, while above and on the last story are plain pilasters.

The Roman house was not the least among the interesting examples of imperial architecture.

Roman homes
and their gen-
eral arrange-
ment.



PLAN OF THE HOUSE OF PANSA, POMPEII.

MONUMENTS OF IMPERIAL ROME.

Rome itself can show us little in this respect, but old Pompeii on the shore of the Bay of Naples is a perfect treasure city for those who would study city life in the provinces. Household architecture came to a certain extent from Greek models, certainly the larger types at Pompeii show influence from across the sea. The Roman house consisted of two parts, the public section where the master met his business and political associates, and the inner portion where the family life proceeded and more intimate friends were entertained. Under the same roof, or rather filling the city block were a series of stores, workshops, and indeed private dwellings which the master might rent to tenants. In our illustration of the house of Pansa, the main house is shown in heavy mass, the shops in shaded portion, and the private dwellings in plain line. Thus some idea may be gained of interior arrangement, while any book descriptive of Pompeii will illustrate the external appearance of these homes.

House of
Pansa at Pom-
peii.

We should remember the Romans as an intensely practical organizing power. Up to the development of this mighty empire architecture had followed closely the lines of conservative traditions. The Roman builder threw tradition to the winds and built to meet his requirements. Never did art more clearly mirror political characteristics than did the architecture and ornament of imperial Rome. Every conquered and assimilated province became a unit in the great dome-

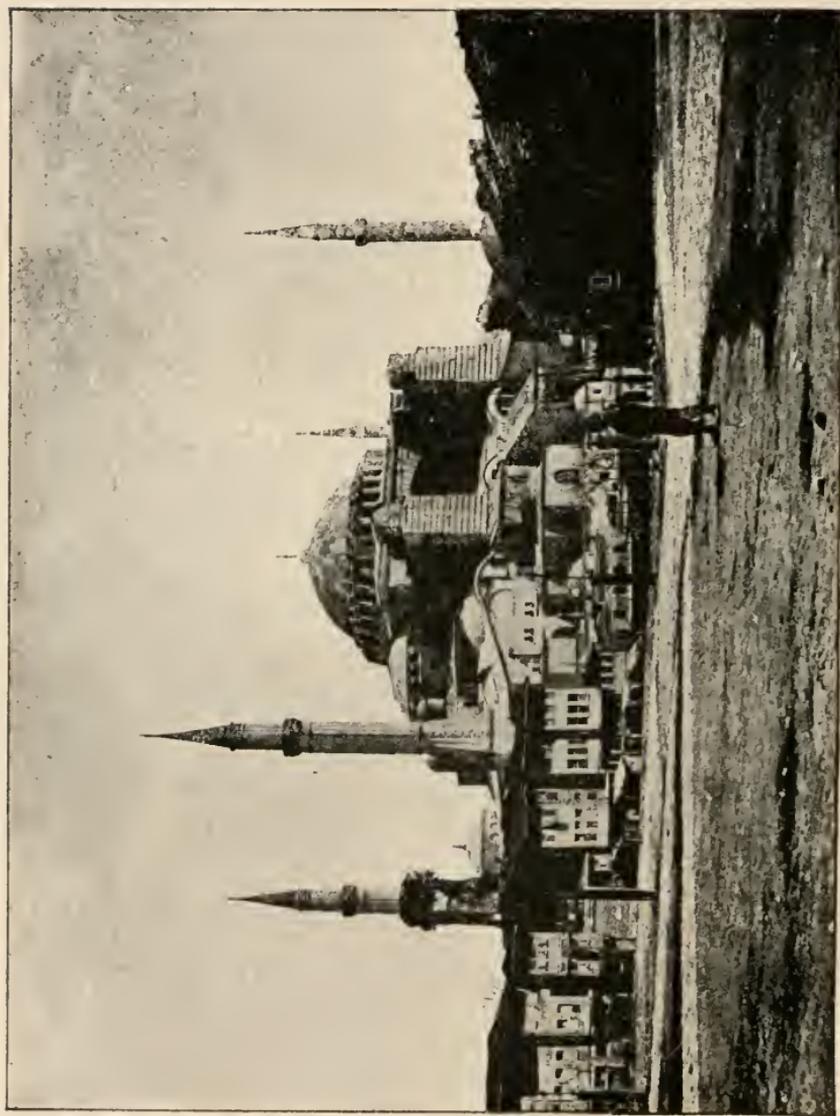
Characteris-
tics of Roman
Art.

like system, every unit, like the stones or bricks of their buildings, playing its part. Their architecture, like the empire, was made up of elements gathered from all the world and their ornament, with its sweeping lines, ostentatious display, and overloaded treatment, but mirrors a national character which was more energetic, extravagant and conquest-proud than cultured, artistic, and refined.

CHAPTER V.

EARLY CHRISTIAN AND BYZANTINE ARCHITECTURE.

*“ The City of the Constantines,
The rising city of the billow-side,
The City of the Cross — great ocean’s bride,
Crowned from her birth she sprung ! Long ages past,
And still she looks in glory o’er the tide
Which at her feet barbaric riches cast,
Pour’d by the burning East, all joyously and fast.”*



CHURCH OF ST. SOPHIA, CONSTANTINOPLE.
"This great church of the Holy Wisdom was founded in the year 532."



BASILICA OF ST. APOLLINARE NUOVO, RAVENNA.

“The Christian basilica . . . was a . . . type destined to widely influence the buildings which were to follow.”



THE decline of Roman architecture brought the ancient or classic schools of art to an end, and now the curtain arises upon another and in some ways more interesting period,—that of the mediæval era.

End of Classic Art.

To the earlier times belonged the Egyptian, Chaldæan, Assyrian, Persian, Greek, and Roman styles, each with its individual characteristics and sphere of influence. Now our interest centers upon the succeeding building nations and covers that architecture broadly known by the terms of Early Christian, Byzantine, Saracenic, Romanesque, and Gothic.

The Mediæval styles.

OUTLINES OF ARCHITECTURE.

It is an historical story to which we would invite your interest and one full of the light and shade so characteristic of world history in the early centuries of our era. With the Latinizing of the western section of the Roman Empire, the influence of Rome as the centre of the great world power rapidly declined. The areas of activity no longer centered themselves in the Italian peninsula, but extended out to the frontiers, to the camps of the great armies, and to the East.

Decline of Rome.

Power of provinces and the East.

Diocletian.

Division into Eastern and Western Empire.

Constantine.

Constantine as a patron of art.

Roman emperors were frequently provincials, famous generals raised to power by the backing of mighty armies, and holding their state more frequently in the provinces than in the great imperial city. Thus matters stood when Diocletian was proclaimed emperor and took up the trust of attempting to govern the unwieldy political mass. Realizing the difficulties involved he divided the territory into an Eastern and Western Empire, appointing a colleague to rule the western section while he retained his sphere of greatest activity in the eastern. This arrangement was not, however, the greatest of successes, and when Constantine came to the throne the empire was reunited.

To Constantine has been given great credit as the founder of not only a new empire, but the establisher of a new style of architecture and building as well. Let us see how far he achieved this greatness, and on the other hand, to what extent he had it thrust upon him.

BYZANTINE ARCHITECTURE.

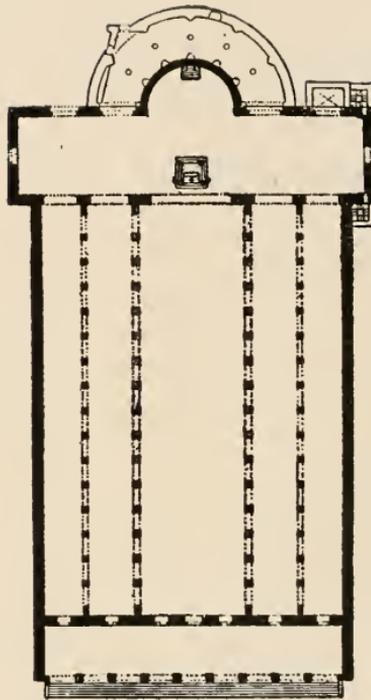
Between the establishment of Christianity and the accession of Constantine, almost three centuries had intervened. The Christians had passed through periods of trial and persecution, erecting their altars underneath the ground in out of the way catacombs, and worshipping in secret at the tombs of their martyrs. As they grew in numbers, pervading the Roman world and converting many of the rich and powerful, they came out of hiding and erected churches openly. Particularly was this so in the East, and in Rome itself even during the reign of Diocletian more than forty Christian churches had been built. Constantine came to the throne with the problem of the unification of the empire at heart. When he proclaimed himself a Christian emperor and decreed the religion of Christ as that of the Empire, he joined not the rapidly weakening aristocratic pagan party, but took sides with the young, enthusiastic, energetic, and growing party in the state. He thus brought to his standard not only the power of the army which had proclaimed him, but assured himself of the backing of powerful supporters, scattered perhaps in the West, but solidly influential in the East. That certainly was good religion; it was equally good politics.

The Christians and their rise in power.

Constantine's political moves.

Architecture as well as statecraft had been developing during these centuries although it is now impossible to trace the steps of its progress in any satisfactory sequence of types to be found

Growth of Architecture.



PLAN OF A BASILICA CHURCH.

The Basilica
type and some
examples.

in Italy. Only when it blossomed out in the structures erected during Constantine's reign could it be realized that anything new had been evolved. Examples like the old basilicas of St. Peter, St. John Lateran, or St. Paul outside the walls, were the result of evolution, and not of accident born of fresh enthusiasm of the moment.

The Christian basilica of Constantine's time was

BYZANTINE ARCHITECTURE.

a church type destined to widely influence the buildings which were to follow. It was an oblong structure divided lengthwise by rows of columns into three and sometime five aisles. The central

Characteristics of the Basilica.



BASILICA OF ST. PAUL OUTSIDE THE WALLS, ROME.

aisle, the widest, was called the nave, and this was further dignified by being carried to a greater height than the aisles. This allowed a row of windows higher up in the nave walls, lighting this portion of the church, over the roofs of the aisles. Entrance to the church was gained by doors opening into aisles and nave. Opposite the central door and at the other end of the nave was constructed a semi-circular bay or apse with seats for

OUTLINES OF ARCHITECTURE.

Plan and arrangement of the Basilica.

the clergy around the altar. In this type of building we frequently find a transept not as wide perhaps as the nave, but as high, extending across the back of the church between the apse and the nave and aisles. The nave opened into this transept by a great arch called the triumphal arch, and the aisles frequently finished at the transept end in the same manner. On the outside of the church across the front was a porch built in the form of a columned arcade. This looked out upon an open court, sometimes built around by arcaded galleries and entered by archways opposite the main church doors.

This was the style of architecture which had been growing up so quietly during those years of Roman decline. Great it was not in its ornamental forms but in plan and arrangement it was destined to become a power in the earth.

Political condition.

Constantine was a shrewdly practical emperor. He was sure of the West for there was his royal army. Of the eastern provinces he was not so certain, and yet they were the focus of all the activity, energy, and wealth which was left in the mighty fabric of his fathers. Rome slumbered, content with the interest from her legacy of great days. Byzantium on the great water-way of commerce, enchantingly situated in the bend of the Golden Horn, holding with her landward towers the key to the overland routes, was bright, energetic, brave, and wealth accumulating. Here

BYZANTINE ARCHITECTURE.

after some seasons Constantine established his capital, called the new Rome, Constantinople, and paved the way to the creation of a new style of architecture, color, and design.

Foundation of
Constanti-
nople

We touched briefly in our last chapter upon the



CONSTANTINOP. E.

evolution of the Greek artistic mind and its influence upon the structures of imperial Rome. On this new soil at Byzantium we can more clearly recall his influence and reverence his inexhaustible power for artistic development. To the Greek we owe the grandest type of perfected classic architecture; to him we credit the refinements of early Roman days; his was the master mind that could combine arch and column so cleverly; and it was his invention, audacity, and executive force which fixed the soaring dome of

The Greek
mind and its
creations.

the Pantheon. In the new city of Constantine we will watch a further development, the dignity of which is well worth appreciating and applauding.

Byzantium had been the focus of many influences in eastern life. It had known the rule of Persian monarchs, and oriental trade, customs, and color were its inheritance. Greek had it been in language, literature, tradition, and taste, and now came the practical emperor, Roman certainly in name, with his projects of great buildings and mighty architectural conquests. Roman energy, — Greek taste, skill, invention, daring, and oriental color; thus was born our Byzantine style of architecture. It was destined not only to be unique and fresh, but powerfully influential as well. Truly another new style had been born to the artistic world.

Influences which developed Byzantine characteristics.

Just where the line should be drawn between the structures of the Early Christian period and the buildings of Byzantine type is hard to say. Doubtless the basilica plan was frequently laid out for many of the buildings with which Constantine adorned his new city. So, too, must have been the case with the round baptistery type of building also so common in Early Christian structures and surviving to this day. The early differences between these survivals of Latin influence and the more strictly Byzantine structures came, it would seem, in the substitution of concrete, brick, or stone for vaulting areas in place of the timber

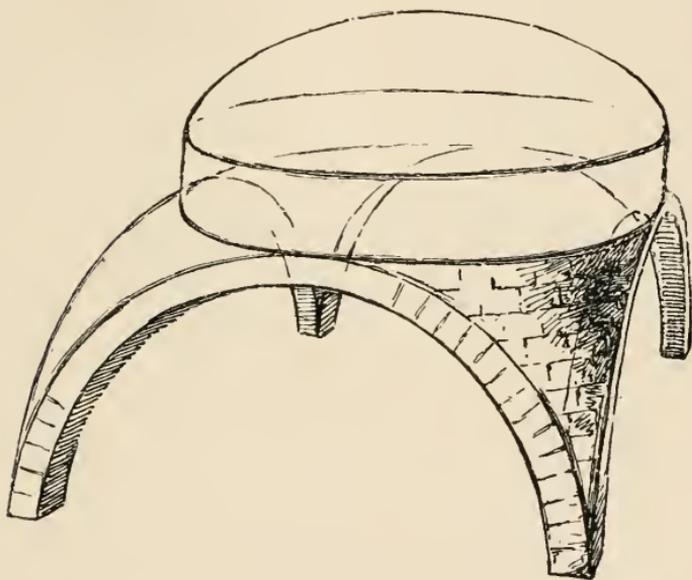
Differences between Early Christian and Byzantine buildings.

BYZANTINE ARCHITECTURE.

roofs with which basilicas and baptisteries had been heretofore almost universally covered.

The dome as a revival of old Roman influence also comes into view, but one of the most promi-

The Roman dome



ILLUSTRATING THE CONSTRUCTION OF PENDENTIVES.

(The drawing is purposely distorted to clearly illustrate the feature.)

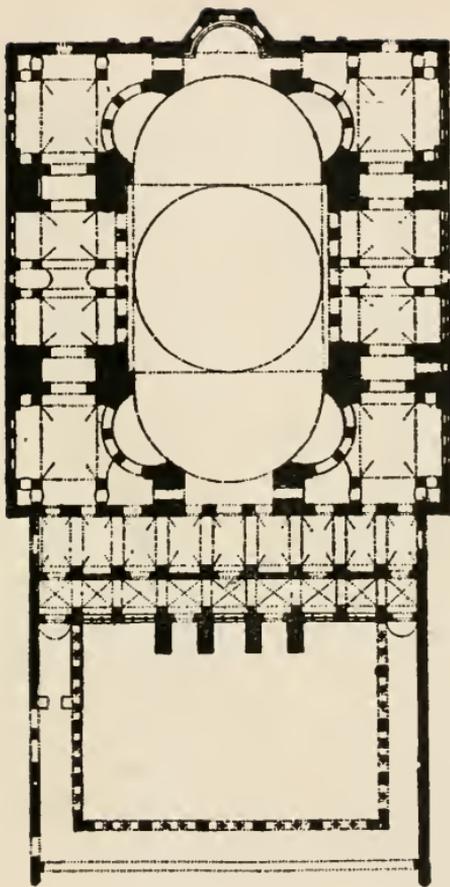
nent characteristics of the new building manner was the method of setting that dome upon its supporting structure. The dome of the Pantheon rose, we remember, from the circular drum-like wall. It enclosed and rested upon a circular plan. Now the Byzantine builder placed his dome over a square plan, sustaining it upon arches and pendentives. What is a pendentive, do we hear

Byzantine methods of supporting the dome.

Illustration of
a pendentive.

somebody asking? Let us investigate the matter a little. Suppose we have a semi-circular bowl, say eight inches in diameter at the rim. Invert this and let it represent our dome. Suppose we have a square box, wooden or pasteboard, it matters little, so long as it be eight inches side and four inches deep. Now let us take our compasses, placing the needle-point well down on the side so a semi-circle of four inches and tangent to the upper edge and sides could be drawn on the box. Repeat this on the four sides and cut away the material outside the semi-circular line. Now we can see four solid arches rising from the square floor of our little structure. Place the inverted bowl on these arches and it will rest touching each arch where the keystone would be located. Now try and cut a piece of paper (somewhat like a modified triangle in shape) to fill one of the open spaces between the arches and the bowl. It must commence far down in the angle between the arches, curve inward and upward to the edge of the bowl yet rest constantly upon the arches. This paper would then represent a pendentive, for a pendentive is a triangular section of vaulting which rises from two arches at right angles to each other and sweeping upward and inward gradually fills in the space until the upper edge of the pendentive forms a portion of a circular ring of masonry on which may rest a dome or a supporting circular drum for a dome. And thus the

Definition of a
pendentive.



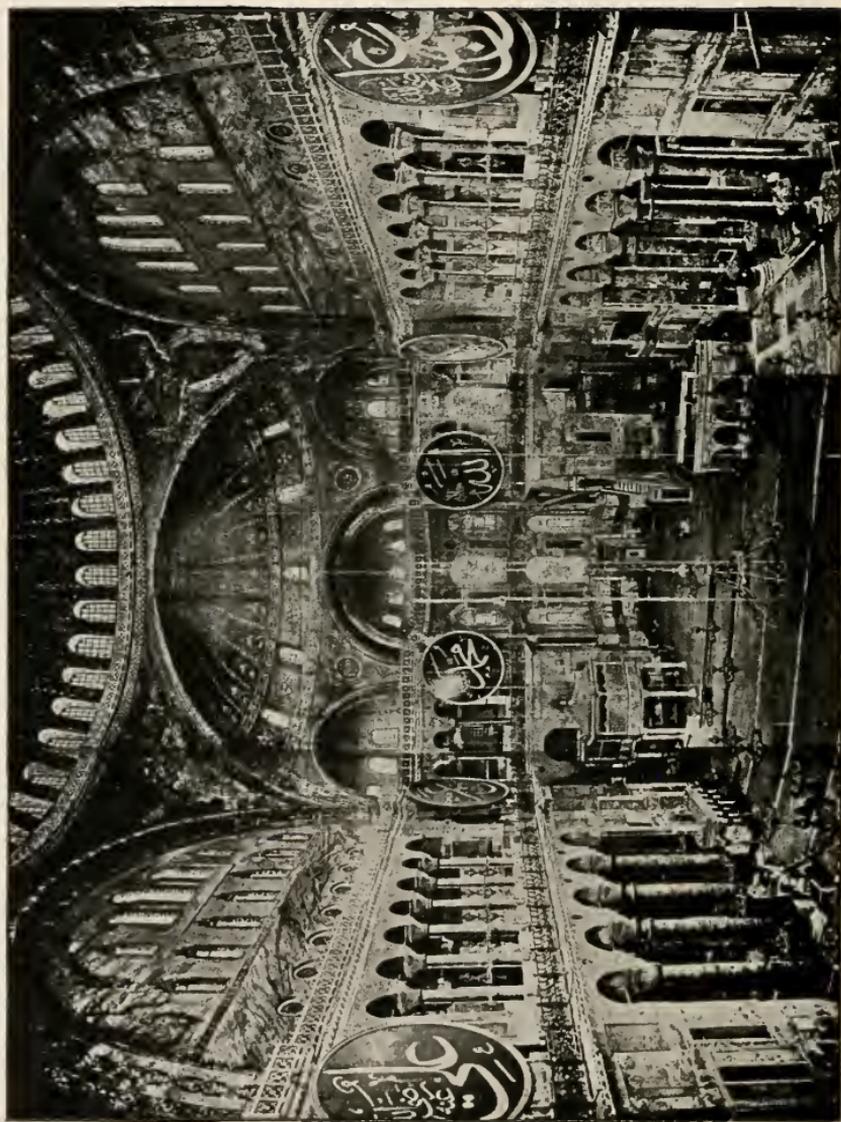
PLAN OF ST. SOPHIA, CONSTANTINOPLE.

Byzantine builder placed his circular dome upon the arches of his square plan.

Every grand style of architecture has some striking and typical building as its grandest exponent. Such were the great temples of Karnak, or the better preserved though smaller and later example of Edfou. The Parthenon indicates the

Typical buildings of preceding styles.

The Parthenon.



INTERIOR OF THE CHURCH OF ST. SOPHIA, CONSTANTINOPLE.

“St. Sophia stands for the most noble of interiors.”

BYZANTINE ARCHITECTURE.

highwater mark of Greek development, crowning their wonderful progress as it crowns its majestic hill-top. Such a building in the Roman days was the Pantheon which we have already studied, and in Constantine's city on the Bosphorus was to rise in the reign of a later emperor the dignified and wonderfully beautiful St. Sophia. Each and every one of these preceding great buildings exemplified some typical feature; St. Sophia stands for the most noble of interiors.

The Pantheon.

St. Sophia.

In the reign of Justinian, so the story runs, this great Church of the Holy Wisdom was founded in the year 532. Several churches similarly dedicated had stood upon this site since the first one dedicated by Constantine. Does it give us any greater idea of the undertaking when we read that under Anthemius and Isidorus the architects, worked one hundred master builders directing from first to last ten thousand workmen and spending the equivalent of nearly five millions of dollars upon this mighty structure? Brick was the chief material of the framework walls, but costly marbles formed the surfaces exposed to the eye of the worshipper. Famous temples of pagan days were robbed of their columns that the new structure might have massive shafts worthy of its importance and dignity. The great nave of the church measures over one hundred feet across and extends from front to back, flanked by spacious aisles, for over two hundred feet. The dome has

Foundation of St. Sophia.

The Greek architects Anthemius and Isidorus.

Workers, millions, and material.

Dimensions.

a diameter of over one hundred feet and rises to a height of one hundred and eighty feet from the pavement. Think of the height of some tall tree or tower and the area of your school yard to get some idea of the vastness of this structure.

Study the picture of the interior of this grand church, this masterpiece of Byzantine art. Externally the Parthenon was the grandest of monumental types that we have thus far studied; this is a structure with little outer beauty, but possessing the mighty

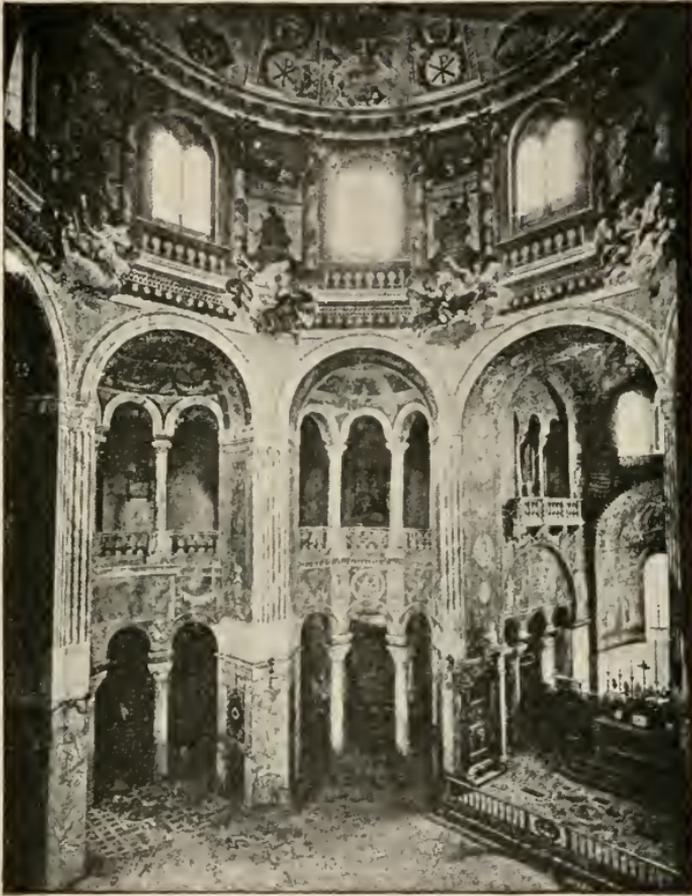
grandeur of an unrivalled interior. No hall of worship ever erected can compare with it in perfect composition, or beautiful harmonious decoration. Simple it is not but wonderfully harmonious and restful in the happy combina-

An unrivalled interior.



ST. VITALE, RAVENNA.

tion of related parts. The clever spacing of its interior, the masterly treatment of broad masses and minor details is most satisfactory. Rare mar-



INTERIOR OF ST. VITALE, RAVENNA.
"The baptistery type of building."

bles, rich mosaics, beautiful carving, these are the details that time, and the Moslem conqueror, have failed to wholly blot out or dim.

The Italian seaports on the northeastern shore, all of which were active traders with the East and Constantinople, came strongly under the influence of this artistic empire. Ravenna was one of these

The Italian
seaports.

Ravenna.

OUTLINES OF ARCHITECTURE.

cities, powerful in the days when the eastern empire was at its height. Within that historic town we find the basilica type developed on Italian soil, but with Byzantine details in its ornament and



INTERIOR OF THE MAUSOLEUM OF GALLIA PLACIDIA.
"It was a style lavish in the use of color."

The Church of
St. Vitale.

its capitals. The circular domed church is also prominent in Ravenna. St. Vitale is one of the chief attractions and although much restored shows us Byzantine feeling and coloring from the more palmy days of provincial glory.

Venice and its
story.

The story of Venice is one of the most interesting in history. Founded by a people driven by the oppression of conquering nations to take

BYZANTINE ARCHITECTURE.

refuge in the islands of the coast, the city gradually became a great power, first by sea conquest, and later by extension inland. As in earlier times the Phœnicians were the carriers of ideas from the



VENICE.

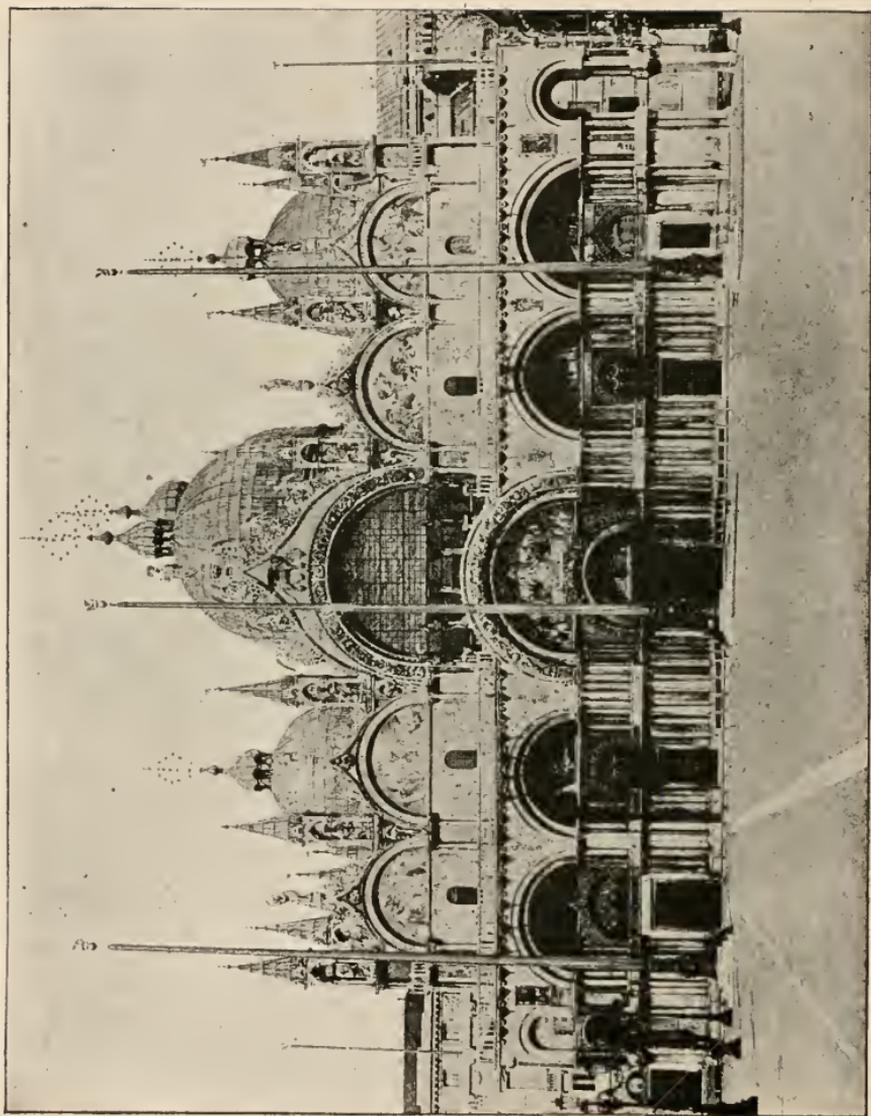
“The story of Venice is one of the most interesting in history.”

Orient, and from Greece along the Mediterranean in the track of commerce, so now in Byzantine times the Venetians became the captains of commerce and industry, bringing wealth, knowledge, coloring, and design to their city on the lagoons.

Venetian
commerce.

The square of St. Mark's is the heart of Venice, and there before the beautiful church and its heaven pointing Campanile one might truly dream away long days of idle restfulness. The Egyptian

St. Mark's
Square.



FACADE OF ST. MARK'S, VENICE
"The square of St. Mark's is the heart of Venice."

BYZANTINE ARCHITECTURE.

built in massive dignity; the Greek in the beauty of classic form; the Roman as a mighty energetic master; — to the Byzantine worker was left the chance to show passion and yet dignity in the use

Character in architectural styles.



INTERIOR OF ST. MARK'S, VENICE.

of color. In color and form St. Mark's is purely Byzantine, in other points it shows the western influences of its native soil.

The characteristics of the Byzantine style are unique, interesting, and original. As a rule it is the interior rather than the exterior which pos-

Byzantine characteristics.



EXTERIOR OF ST. MARK'S, VENICE.

“It was a style lavish in the use of color, not of paint, but of mosaics and colored marbles.”

sesses the greatest interest. Originally a development from Roman methods of construction it carried forward the use of the dome, but supported it in a different manner, closing the dome crowns and piercing the lower portion with windows. It was a style lavish in the use of color, not of paint, but of mosaics and colored marbles. Everywhere the vaults were incrustated with mosaic of gold, blue, and rich green, with figures and designs against this wealth of color as a background. Columns and slabs in many colored marbles decorated the walls, upon which the carving was

Byzantine
character-
istics.

BYZANTINE ARCHITECTURE.

delicate, lacelike, and in low relief, rather than bold and vigorous. Byzantine architecture was even more clever than Greek and Roman in adapting itself to unconventional conditions.



GRAND CANAL AND BYZANTINE PALACE, VENICE

"Venice . . . breathes much of the character of this interesting style."

Constantinople is now in the hands of the Moslem and much of its former glory has departed. Ravenna, far removed from the sea which once washed its piers, sleeps and dreams of brighter days. Venice, although a city of varied architecture, breathes much of the character of this inter-

Comparison
of Constantinople,
Ravenna, and
Venice.

OUTLINES OF ARCHITECTURE.

esting style. Hers is a glory all her own which time alone can dim. Her many-colored walls, reflecting themselves in the blue of the canals and standing against the halo of a golden sunset are but the pattern in mosaic of some composition most wonderfully rich in color and fascinating in design.

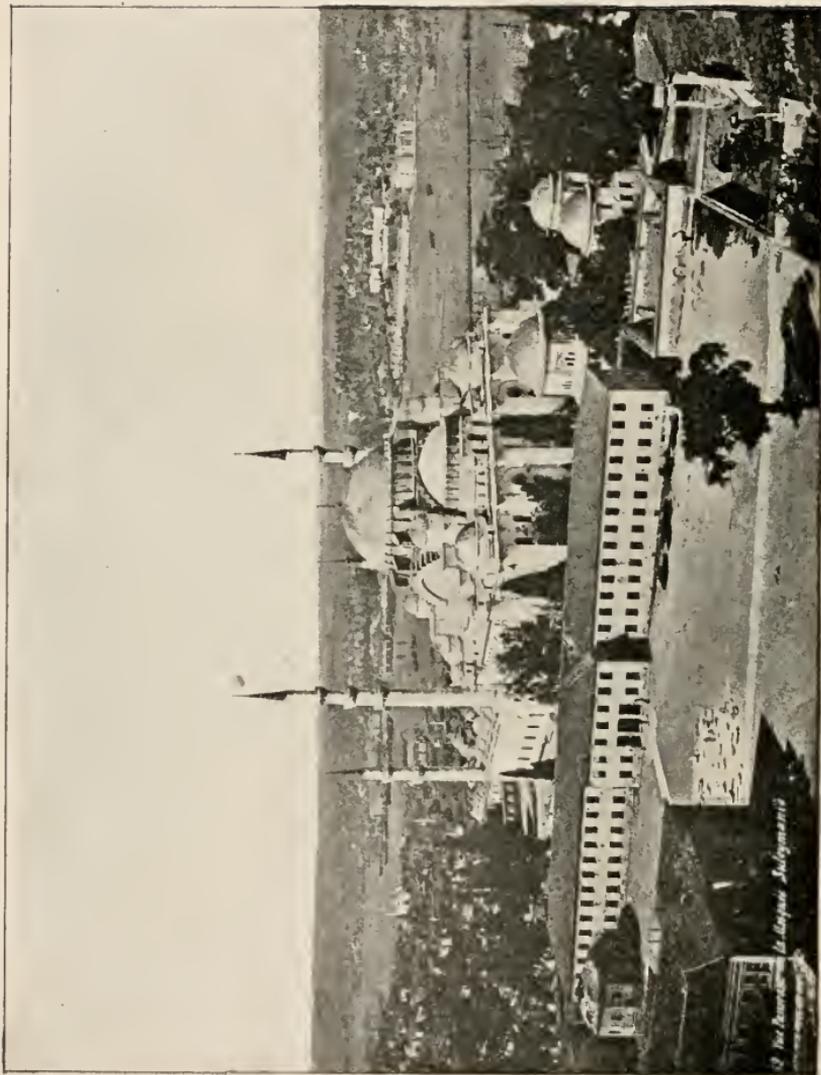
CHAPTER VI.

SARACENIC MOSQUES, TOWERS,
AND PALACES.

*But over all the rest supreme,
The star of stars, the cynosure,
The artist's and the poet's theme,
The young man's vision, the old man's dream, —
Granada by its winding stream,
The City of the Moor.*

*And there the Alhambra still recalls
Alâddin's palace of delight :
"Allah il Allah !" through its halls
Whispers the fountain as it falls.*

— LONGFELLOW in *Castles in Spain*.



MOSQUE OF SULEIMAN, CONSTANTINOPLE.

“Great centers for the study of Mohammedan art exist today in Cairo, Spain, India, and . . . Constantinople.”



CAIRO FROM THE CITADEL.

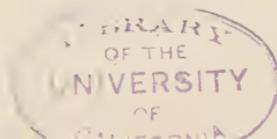
“The Mohammedan architecture in Cairo shows the influence of . . . Byzantine builders.”



FEW periods in art history offer more entertaining reading than the chapter treating of Saracenic art. The rise and growth of Mohammedan power, from the flight of the prophet from Mecca in 622, to the fall of Granada in 1492, reads like a story from fairyland. It is a chapter from the “Arabian Nights” crystallized in architecture, ornament, and design. Therein we follow the story of a race of high mental and physical power, full of the restless energy of a people desert-born, and welded firmly into one far-reaching, powerful dominion by the influence of religious belief.

Rise of Mohammedan power.

Characteristics of Mohammedan races.



OUTLINES OF ARCHITECTURE.

Mohammed, so the histories tell us, was a most unique character. Born into one of the noblest tribes of his native land he spent his early life in the black tents of the desert, with caravan trains, or, in the solitude of the great plains among his flocks. A man of deep religious feeling, some rhetorical power, and introspective mind, he was broadened beyond his fellows by contact with strange men and cities in his pursuit of commerce. In the seclusion of solitary caves to which he frequently retired he evolved his new religious system, and went forth to teach that while both Christian and Jewish tenets were good, yet he had received a more perfect revelation than either. The data upon which his utterances, now preserved in the Koran, were constructed was apparently drawn from contemporary sources, and the architecture and design in which his followers were destined to find artistic expression were also taken bodily, though modified as time went on to suit the development of the empire.

Mohammed, his life.

His new religious system.

Influence on Literature and Art.

Progress of Mohammedan conquest.

Mohammed was not at first received with favor among his people, opposition and flight was his lot, until family, kinsmen, neighboring tribes, and at last whole sections of the country yielded to his inspiring belief. Then the prophet became the warrior, proclaimed the sword as the key to heaven and hell, and commenced the conquest which was destined to spread over southern Asia, northern Africa, into Spain, and only

SARACENIC ARCHITECTURE.

be preserved from over-running Europe by the blocking towers of Constantinople on the east, and the crushing blows of Charles Martel upon the western plains of Tours. 73-

The doctrine of "Allah, tribute, or the sword," which had been everywhere offered to the conquered nations, was productive of great architectural efforts in the erection of mosques and shrines when the power of the Moslem dominion was well under way. Tribute moneys and skilled artisans can go a long way toward the fashioning of a series of monumental structures. The Byzantine empire was at its height when this sword of progress was moving eastward and westward and a wealth of well-trie'd methods was at the disposal of the conquerors. Great victories frequently foreshadow great architectural outbursts, and the Moham-medan supremacy was no exception to this rule.

The development of this art of the Saracens was by no means new in its constructive details. The arch and the dome were borrowed from the Byzantine style and from this same source came also the use of pillars and arcades for their great buildings. The wealth of ornament and the lavish use of color was a native inheritance to the Arabian tribes who drew this inspiration from Persia and the same Oriental sources which had colored the Byzantine mosaics. Surface decoration much similar to Byzantine types adorned their early structures, destined to blossom out later in the native-born

Architecture fostered by tribute money

Saracenic architecture an outgrowth of Byzantine.

Source of the arch, pillars, and arcades.

Source of ornament.

OUTLINES OF ARCHITECTURE.

medium of stucco decoration. This was treated in most unique and lace-like ornament characteristic of geometric knowledge, Oriental and religious feeling.

At first the structures erected by the Moslems were small and insignificant as became a new faith



A BIT OF OLD CAIRO.

"The picturesque outlines . . . of this Cairo school."

struggling for acceptance and belief. Later as the dominion extended and wealth accumulated buildings grew larger and more imposing. Four great centers of Mohammedan art exist to-day in Cairo, Spain, India, and (of later development) Constantinople.

Mohammedan centers of Art.

The typical Mohammedan building

The most typical building of Mohammedan centers is the mosque or house of prayer. In plan,

SARACENIC ARCHITECTURE.

this establishment, which was often most extensive, suggests on a grander scale the eastern idea of a house. There is the great forecourt open to the sky, containing the fountain of ablutions, and frequently planted with orange trees. Surrounding this court and enclosing it on three sides was a colonnaded structure sometimes containing the tomb of the founder, the apartments of the priests, schools, and hospitals. Opposite the entrance to the court was the prayer chamber, a hall of greater or less extent, in the early days with flat roof supported on many columns, later domed and vaulted in a most interesting manner. This hall of prayer had two essential features, never absent, however varied the details might be. These were the decorated niche to indicate the direction of Mecca towards which all the faithful faced in prayer; and the second, the high, slender pulpit from which the Koran was read. As early as the ninth century the minarets, tall towers beside the mosques, were added in order that calls for prayers might float out over the city above the house-tops.

Plan and arrangement of the mosque.

Forecourt and colonnades.

Hall of prayer.

Two essential features.

Minarets.

Architectural Cairo.

Geometric design.

The Mohammedan architecture in Cairo shows the influence of Persian as well as Byzantine builders. The picturesque outlines of the buildings, the beautiful domes, and grouping of galleried minarets are all features of this Cairo school. The domes are not only finely formed, but are decorated externally with an interlacing geometric pattern.

This decorative geometrical treatment is particularly noticeable in all these Egyptian structures and shares with a love of color the native mind. Structurally these mosques are not equal to the best work of the Byzantine mason although circular domes are placed on square plans with the same clever use of pendentives and much dignified vaulting is introduced.

Moorish conquest of Spain.

The conquest of Spain by the Moors is an old story to every school-boy. In imagination we conjure into being Tarik and his dusky Berbers, the fleet lantern-sailed vessels spreading across the Straits, as the Tangier fruit dealer steers to-day across those summer seas. We see the great rock, Gebal Tarik (Tarik's Mountain) which we have changed to Gibraltar, and we can picture the victorious march of the troops northward into the promised land. One thing we seldom imagine as an attribute of these Moorish invaders and that is they were bringing Spain the only true culture which she ever possessed, for while the Moors were with her Spain was a land of universities, scholarship, and learning.

Spain's debt to Moorish culture

Architecture of a conquering nation.

A race of conquerors is seldom content with the architectural conditions which it finds and soon begins to express its national character in a building manner all its own. Shortly after the conquest when the nation is still under arms it is the fortress-like style which develops; heavy, massive, beautiful, but typical of the stern, unrelenting

Fortress style.

SARACENIC ARCHITECTURE.

purpose which gave it birth. With the passing of the period of conquest and the coming of a day when security in possession is the dominant spirit in the ruling heart something more aspiring begins to show itself and higher buildings or graceful towers are the result. When this period of exultation has run its course, when wealth has resulted from established sovereignty, and a luxurious home life is the habit of the rich and powerful, then architecture, like the artistic mirror it is, reflects the passing days in palace and princely hall.

Soaring towers.

Luxurious palaces.

Moorish Art development in Spain.

It is wonderful how truly this architectural development still preserves the story of the Moorish invasion and progress in the romantic cities of old Spain. Cordova, the great and powerful of the early Moslem dominion, still jealously guards the shrine of her ancient mosque, massive and grand as became a conquering commander. Seville, the queen city of a later period, full of the exultation and effervescence of a people rejoicing in their attainments, looks up to her great Giralda, the towering, heaven-pointing finger of faith. Granada by the winding stream, true city of the Moor, nestling securely in the lap of luxury in a land flowing with milk and honey, sees reflected in her placid pools the halls, galleries, and courts which breathe the home life of dark-eyed Sultanas, singing-birds, flowers, sunshine, and blue sky.

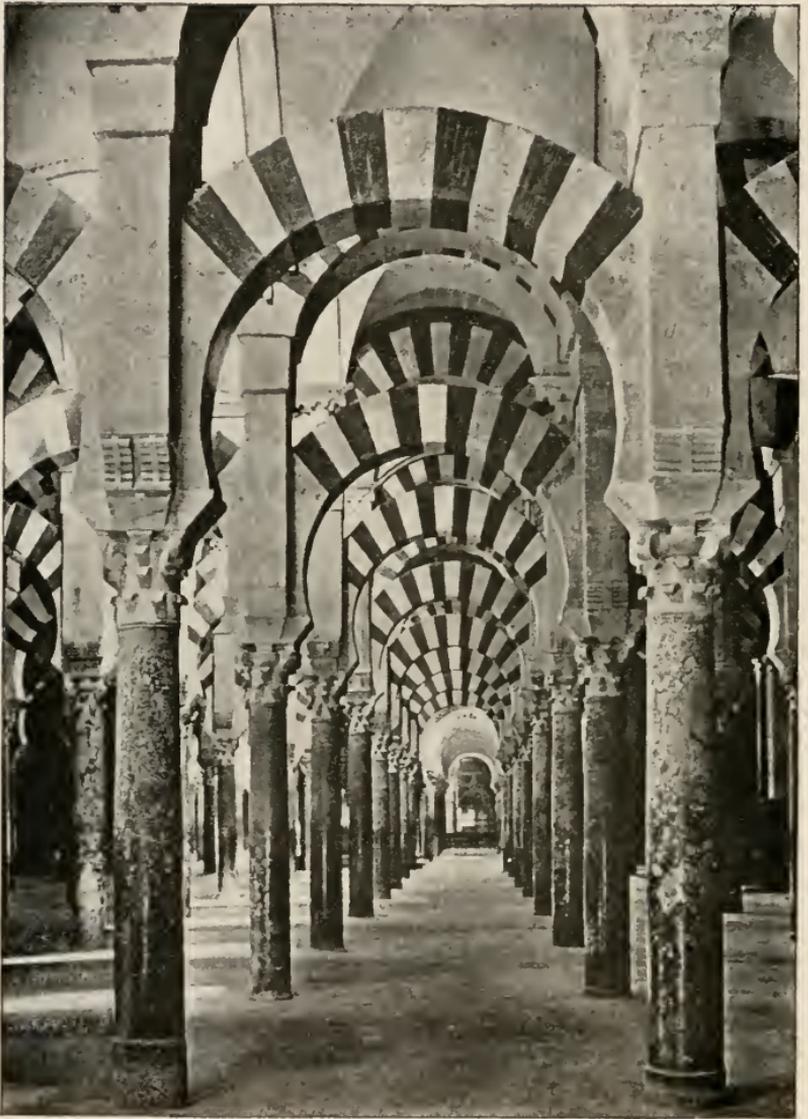
Cordova.

Seville.

Granada.

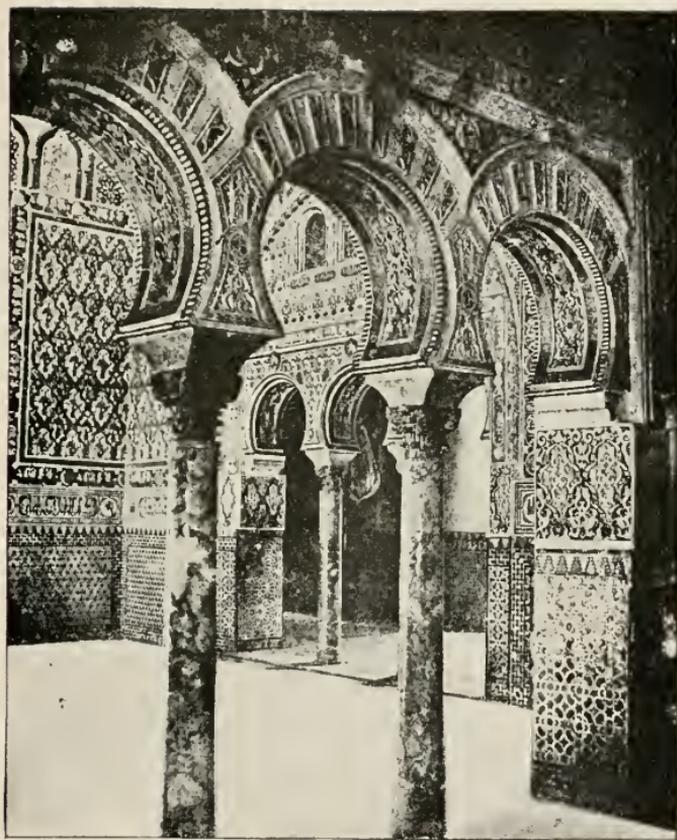
The magnificent mosque of Cordova, with its forest of columns, and aisles like the streets of a

Mosque of Cordova.



THE MOSQUE, CORDOVA.

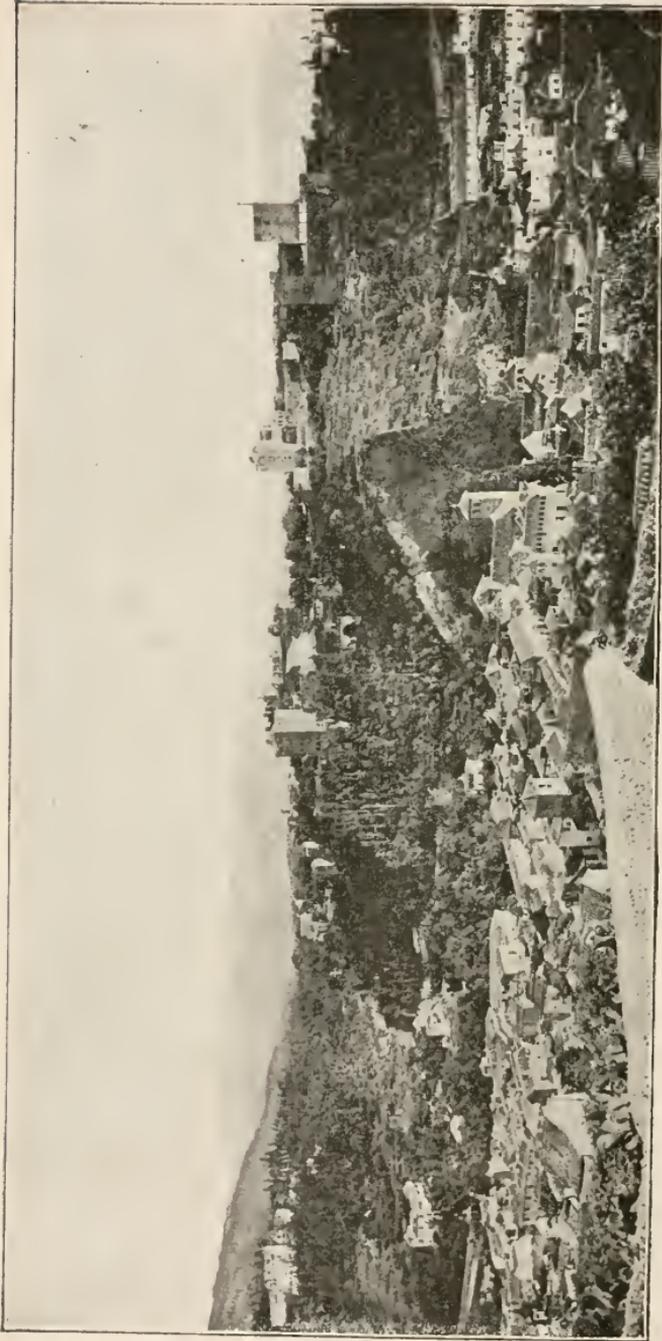
"Her ancient mosque, massive and grand as became a conquering commander."



IN THE ALCAZAR, SEVILLE.

miniature city, stands for one of the first structures erected by the Moor. Although based upon the type of the basilica, its arrangement shows an originality all its own. It is simple, solid, severe, and massive in design; happy in its curves and general details, and wonderfully striking in the

Characteristics of the Mosque.



ALHAMBRA PALACE AT GRANADA.

“The ruddy towers of the Alham'ra rise from their verdure-clad height like a richly upholstered throne.”

production of charming vistas. Time and white-wash, restoration, ruin, and neglect have done much to destroy its glory. Its gilding and coloring have in a great measure vanished; many of the carvings have been rudely destroyed, no gold or silver lamps now swing beneath its springing arches, yet enough remains to suggest its original grandeur, and to justify the statement that the Mosque is the most perfect specimen extant or ever erected, of the religious architecture of the Moors in Spain.

Position of the Mosque in Saracenic Art.

The ruddy towers of the Alhambra rise from their verdure-clad height like a richly upholstered throne. Granada is happy in its situation, doubly happy in the possession of this beautiful palace of the Moors. An article of this character can only treat of architectural characteristics. Take up your Irving's "Alhambra" if you would feel the color, smell the flowers, and hear the fountains or the nightingales.

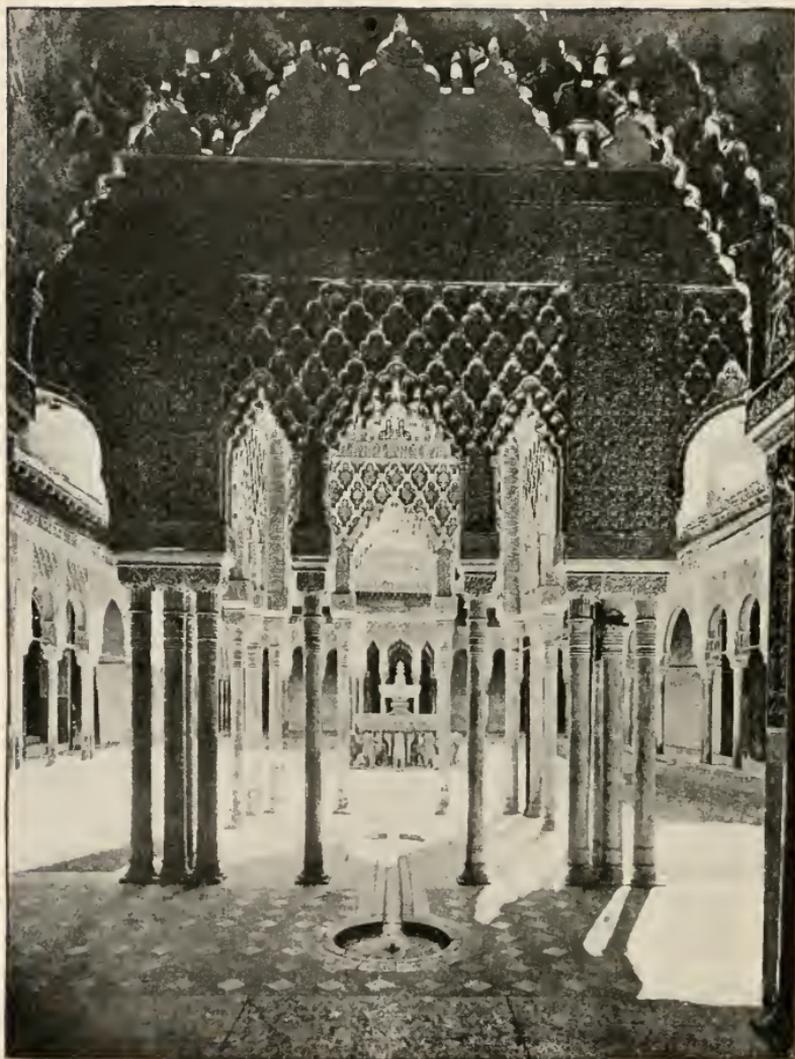
Alhambra at Granada.

Generally speaking, the Alhambra is considered the best example of a Mohammedan citadel-palace. Externally it is a fortress, internally a casket of jewels. In plan it represents a series of halls and apartments grouped around two arcaded interior courts. Its chief glory is its decoration, free, fanciful, and lace-like, where that of Cairo is more rigid and geometric. Its iridescent tiling in never-ending design, and the wall decoration in constantly repeating stucco ornamentation are very dainty and charming. Vine-patterns, traceries,

Citadel-palace type.

Plan.

Decoration.



COURT OF LIONS, ALHAMBRA, GRANADA.

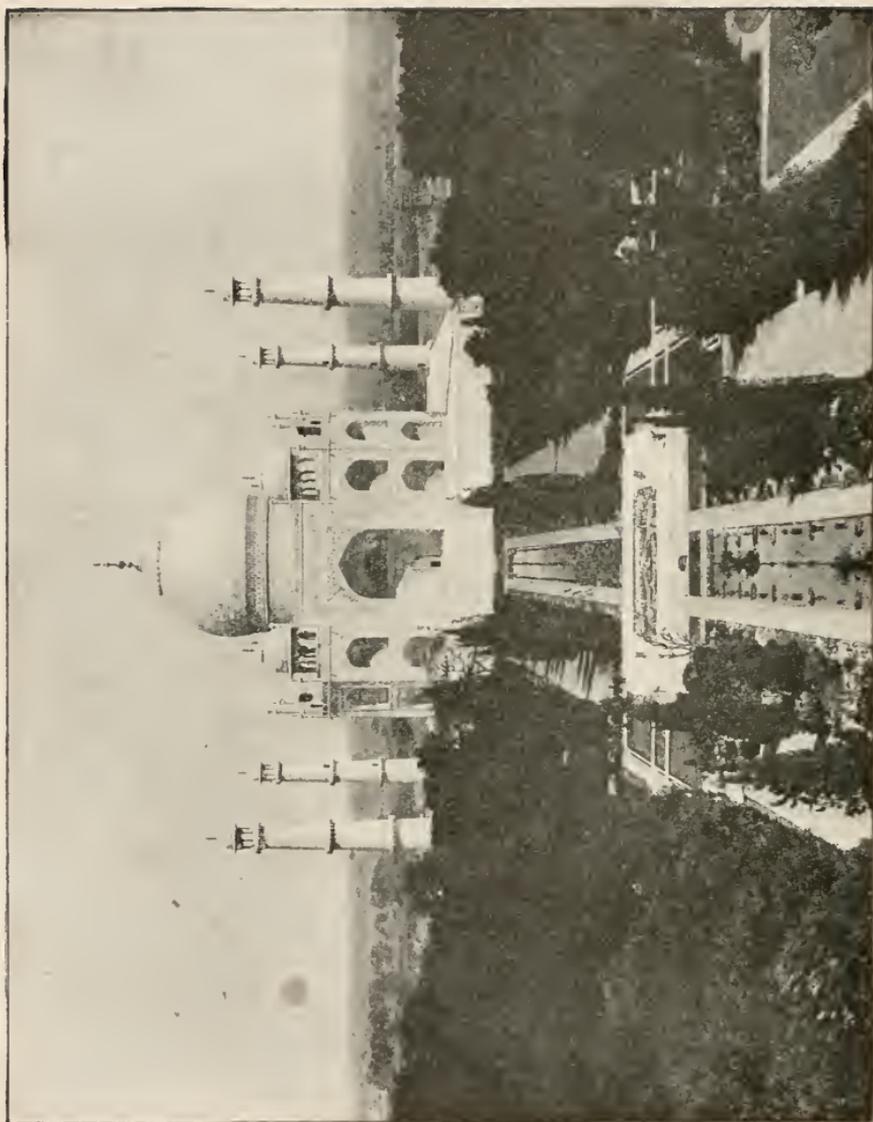
“The Alhambra is considered the best example of a Mohammedan citadel-palace.”

SARACENIC ARCHITECTURE.

inscriptions, and beautiful capitals furnish never-ending interest and inspiration. Some of the halls are roofed with wooden ceilings, others are finished in domes resting upon pendentives and treated in a honey-combed stalactite fashion most interesting and, it must be added, although it spoils the following story, also characteristic of Cairo mosque decoration as well.

We remember sitting in a window balcony one afternoon as the shadows lengthened on old Moorish Granada in the valley far below. Within the palace splashed the fountains, fragrance of orange blossoms filled the courts, and over all was the magical coloring and the dainty arabesques which cover the walls. There we read the story of how the airy domes were fashioned which to-day shut out the southern sun. Thus runs the legend:—The great architect, Iber Aser, had roofed his courts with a plain bell dome, as did his ancestors, the Byzantines, and the Romans before them all; but his artistic soul was not satisfied. Between the palm pillars he sat on his prayer carpet looking up and praying to Allah for more light of divine wisdom. At that moment a band of slaves came dancing in, waiting for the appearance of their fair mistress, the light of the harem. Wanton in their joy, they began to pelt each other with handfuls of snow which lay in huge baskets brought but that morning from the clefts of the Sierra Nevada. The snow on the black faces fell as swan's down,

A Saracenic fancy.



THE TAJ MAHAL, AGRA, INDIA
"No photograph or description . . . can do its glories justice."

and on the fairer faces like ice-dew on the early roses. Tired of this amusement, they began to toss hundreds of snow-balls aloft at the roof, seeing who could make the most snow adhere to the hollow dome. Then came the call from Nourmahal, their fair mistress, and the slaves fled as flee the fawns when pursued by wolves. Then the architect looked up smilingly at the clotted snow, hanging in bunches and tufts, forming cells and pendants, and fell on his knees, thanking Allah for so graciously answering his prayer. Thus this style of decoration (you will find the story in the "Arabian Nights," or somewhere else) was inspired by the melting roof of a snow-drift, suggestive of delicious coolness, and the half-thawed snow flung up by playful hands and modeled ere it fell. It is a happy little story and one which may interest the children, serving to fix a characteristic of the Alhambra's decoration in their minds.

Most typical of the extension of this style of art in southern Asia is the beautiful Taj Mahal at Agra in India. No photograph or description, say travelers to the wonderful shrine, can do its glories justice. The Taj stands in the midst of a beautiful garden of great extent, shut in by gateways almost palaces in themselves and reflected in extensive basins where the lotos grows and the bright gold-fish swim. The building stands upon a white marble platform, white marble is the mass of the structure, and its crown is the dainty swell-

Taj Mahal at
Agra.

Surroundings

Character of
the building.

Interior of the
Taj Mahal.

ing dome, like an unopened lotus bud in its shape and purity. Four columns, dainty marble minarets, rise at the corners of the platform and complete the simple but matchless composition. Beautiful in its exterior, it shows, we are told, an interior of still more wonderful character. The design centers about the sarcophagus of the Sultana for whom this fabric was built. From there the pattern of the pavement radiates, equi-distant the walls arise, and overhead soars the marble dome bathed in "wondrous light, such as might dwell in the windings of a pearl shell."

Saracenic
Empire a
preserver of
culture.

The period from the flight of Mohammed to the fall of Granada practically covers and overlaps that known as the Dark Ages in northern Europe. Beyond the Alps the rugged forests shut in a vast area of ignorance, misery, and the hard and fast conditions of feudalistic reign. In the south-land however, along the Mediterranean shore, stretching from the east well out to the west, was the great Moslem dominion. Therein was treasured the lamp of learning, there great universities arose, the arts and crafts were practiced, and the courtesy of chivalry preserved. At this lamp of culture and the arts, northern Europe lighted her tapers in the morning of the awakening when the cathedral builders began to rise.

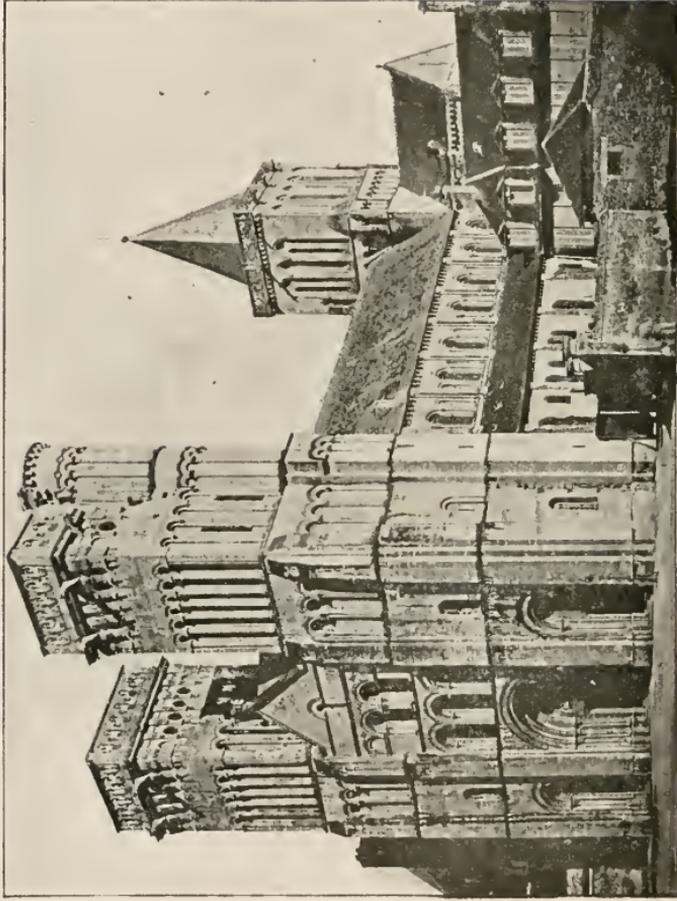
CHAPTER VII.

ROMANESQUE CHURCHES.

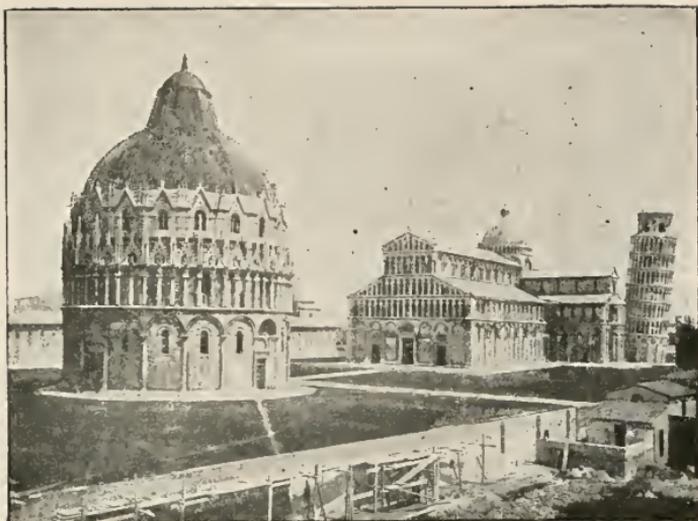
*Here once there stood a homely wooden church,
Which slow devotion slowly changed for this.*

*By suffrage universal it was built,
As practiced then, for all the country came
From far as Rouen, to give votes for God,
Each vote a block of stone securely laid
Obedient to the master's deep-mused plan.*

—JAMES RUSSELL LOWELL in *The Cathedral*.



CHURCH OF THE TRINITY, CAEN
"Normandy was a fine ground for development."



CATHEDRAL, BELL TOWER, AND BAPTISTERY, PISA.

"Romanesque . . . commences with the . . . church building effort in north Italy."



EDIÆVAL church architecture is most inspiring. Commencing far to the south under sunny Italian skies, we follow the chapters of development onward over the Alps, into the deep, dark forests of the north; or westward on the other hand over the plains of France. We read in the crumbling stones of many a monastic foundation the story of missionary zeal, steadfast piety, and earnest endeavor. Therein is pictured the struggle to keep alive on alien soil the flame of religious life; and the establishment amid the darkness of mediæval feudalism of ecclesiastical centers of influence,

Development of church architecture.

Missionary efforts of the monastic builders

which like cities not to be hidden let their light penetrate far into the gloom of the environment. The whole story, from the foundation of the cathedral churches of north Italy to the flowering of ambitious effort in the Ile-de-France, reads like a brightly illuminated romance saved for our own time since the historic days of old.

Early Christian and Byzantine development.

Area of building influence.

Relationship between Romanesque and Gothic.

We have followed the development of the basilica type into the churches of Christian Rome, and studied the new growth eastward into the examples of the Byzantine period. In our observations upon the work of the cathedral builders we must bear in mind that it is a western and northern movement which we are tracing. Moreover, it is a development clearly dividing itself, not in time or geographical area alone, but in type as well, into two grand divisions, Romanesque and Gothic, which stand like a sturdy mother and blooming daughter sharply outlined against the sunset sky of mediæval conditions. We shall find Romanesque examples scattered all over western Europe, beside them we shall frequently enjoy the grander Gothic structures, but we must always remember that the one gave the other being and that the Gothic cathedral worked out under more congenial conditions the promises which the church of the monastic builders held out to the architectural world.

The period which followed upon the collapse of the old imperial conditions marks the era popularly

ROMANESQUE CHURCHES.

known as the Dark Ages. From the standpoint of our nineteenth century civilization it is a most curious time, yet one influential in the history of nations as written in their architecture. For the church, it was an era of expansion, missionary effort, unification, and monastic foundation. Politically it was the age of feudalism. Yet from these centuries of darkness, unrest, and oppression was to come the establishment of national life and in time a growth of architectural development, the fine flower of which was only possible as an expression of new conditions. In the foundation of monasteries the church adopted the spirit of the era. Vast acreage was their portion and pride. These lands were broken up into dependent estates under the feudal manner as were those of the great baron whose lands they perchance adjoined. Yet the rule of the monastic establishment was mild, just, and far-reaching in its influence while that of the feudal lord was tyrannous and narrowing in its character. Under such conditions the power of the monastery grew strong because swaying both heart and head. Slight wonder that in the establishment of national life and state the monastery and its influence was a power on the side of nationality as opposed to feudalism. Deep in the northern forests were founded these establishments, self-supporting, productive communities of far-reaching power for good.

Social conditions of the Dark Ages.

Influence of monastic foundations.

The monastery in national life.

Rome and her energetic builders had covered the face of southern Europe with mighty structures, The architects of Christian Rome had developed to its utmost the possibilities of the basilica type.

Limitations of the basilica type.

But the basilica with its massive monolithic columns was not to be had for the asking in a region where the classic temple did not offer its columns to whomsoever could muster force enough to carry them away. Neither in the forests of the north could workmen or quarries be found for the fashioning or transportation of such material. The monastic architect, directing his unskilled native workmen, fell back therefore, upon the methods of the earlier Roman builder and while he kept the simple basilica plan, yet he modified it by the building methods which he found in Roman ruins. We should expect therefore to find in Romanesque buildings the heavy massive masonry of classic days, thick walls, round arches, and towers of imposing size.

Methods of monastic builders.

Romanesque is therefore a term which may cover very broadly many most interesting buildings. Speaking most generally the style commences with the foundation of church building effort in north Italy, let us say about 1050 (Pisa cathedral founded 1063) and extending forward in examples of constantly increasing refinement until a hundred years later when the development reaches the point which we must call Gothic, marked by the reconstruction of a great group of

Romanesque era.

ROMANESQUE CHURCHES.

churches in northern France and the foundation of some of the grandest of northern cathedrals.

We shall picture to ourselves most of the various churches of this style as conforming generally to certain definite

governing conditions. The problem which faced the monastic builder, whether in Italy, France, Germany, England, or Spain, was to adapt a definite church type, the basilica, to the needs of his particular territory, to construct it of fire-proof material, and in a manner consistent

with the skill of the workmen at his command. The basilica plan, we remember, included the spacious nave rising on arcaded columns above the parallel aisles on either side. The transept at the end opposite to the entrance was often raised a few steps above the nave, while nave, aisles, and tran-



Adaptation of the basilica type.

CHURCH OF PORCHAIRE, POITIERS.

"It is a western and northern development that we are tracing."

Basilica arrangement.

OUTLINES OF ARCHITECTURE.

sept were roofed with wooden construction, either in flat ceiling or with open roof timbering most frankly and freely displayed. At the end of the church the transept wall became the semi-circular apse, and the whole interior was as gorgeous with



CHURCH OF NOTRE DAME LE GRANDE, POITIERS.

“We read in the crumbling stones . . . the story of missionary zeal.”

gold, color, and mosaic as the wealth of the diocese could sustain. In the schemes of the Romanesque builder we shall see this general plan of nave, aisle, transept, and apse retained. Modified it certainly will be by climate, taste, and nationality, but certain characteristics will hold their own even into the great Gothic cathedral. As the gray skies of the northland failed to reflect as much light within the church as at the south, so the nave wall (the clerestory) rose higher above the aisles as time and development went on. Fire had always been the foe of the

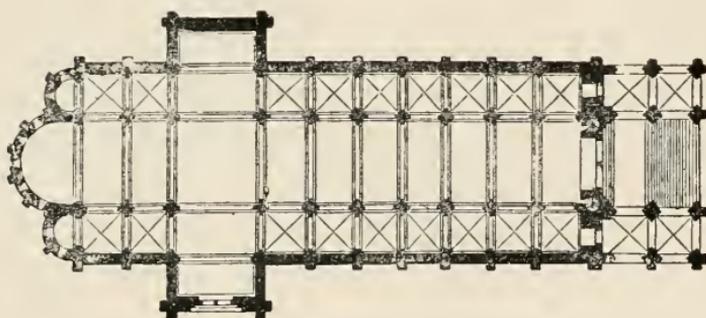
Retention of
the basilica
type in
Romanesque
construction.

Growth of the
clerestory.

ROMANESQUE CHURCHES.

wooden-roofed basilica, so masonry vaulting was substituted for wood. Stone or brick piers thus took the place of the rows of columns previously in use, columns which could no longer adequately support the incumbent weights with their varied thrusts even if they had been obtainable outside

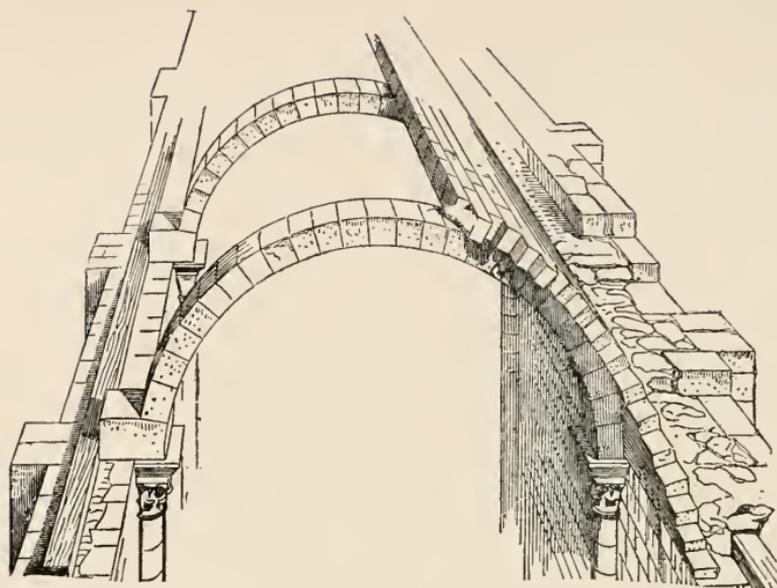
Masonry vaulting.



PLAN OF A ROMANESQUE CHURCH.
(Compare with the basilica plan on page 102.)

of classic soil. Transept and apse also proved in time inadequate to the service of a progressive church and we find the arms of the first extending out beyond the side walls, and the semi-circular end of the apse carried back by choir walls which were but continuations of the nave lines. Thus from the plan of the basilica, not unlike a capital T in general character, we find our church plan developing into something more purely like the Latin cross in its form.

Modification of piers, transept, and apse.



ROUND ARCH VAULTING.

“The Romans had covered space by their great barrel vaults.”

Romanesque
vaulting and
buttressing.

Perhaps the greatest advance in architectural development which the Romanesque builders had to offer was in the vaulting of their naves and aisles, and in the external system of bracing which resulted from such modifications. For as long as nave and aisles of the old basilica type retained their wooden roofs there was comparatively little pushing power to be overcome anywhere in the building. Only with the introduction of the arching vaulting did any calculation for overcoming pressure have to be considered. The Romans had covered space by their great barrel vaults of concrete masonry and these examples of imperial construction were everywhere evident as object

Roman
methods.

ROMANESQUE CHURCHES.

lessons to the monastic builder working on classic soil. Roman buildings showing the barrel vault or traces of it are also to be pointed out in several northern European districts. Roman methods showed the barrel vault and thus it was added to the Romanesque builders' art. The masonry vaults of the nave tended to spread the nave walls; this thrust was only partly overcome by the

Romanesque
methods.

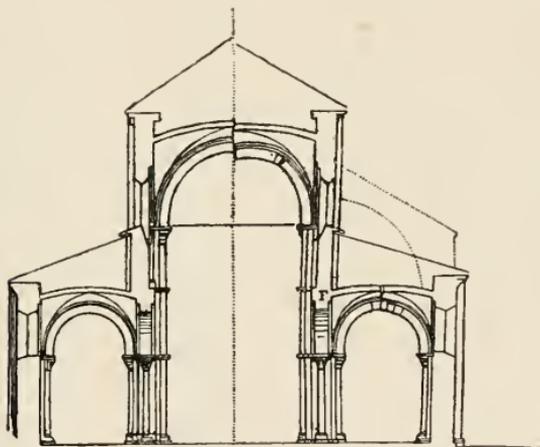


ILLUSTRATION OF THE SPREADING POWER OF ROUND ARCH VAULTING.

bracing exerted by the pressure of the aisle vaults resting not only against the nave but against the outer walls of the church. To counteract these thrusts the walls of both nave and aisle were thickened in places, thus developing the buttress. When in time it seemed wise to brace the upper walls of the nave by an external inclined

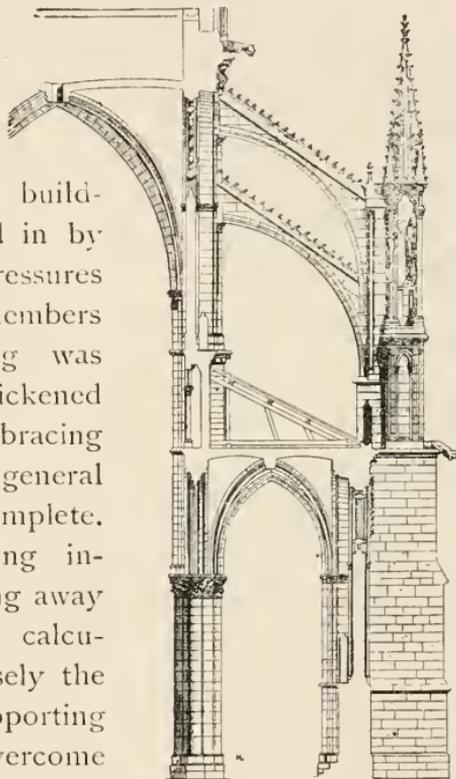
Development
of the but-
tress.

arch rising from the thickened outside wall of the aisle, over the aisle roof and meeting the nave wall where the outward pressure was greatest, then

was developed the flying buttress. The general plan was now fixed by evolution; — the building was covered in by masonry, the pressures of the various members of the building was overcome by thickened walls, piers, or bracing buttresses. The general scheme was complete.

Years of refining influences,—cutting away extra masonry, calculating more closely the amount of supporting material to overcome pressing weight, thinning of walls, widening

of windows, enlarging the general scale — these were the stories which the hundred years of Romanesque development have to tell us before they produced the perfectly adjusted type in the Gothic cathedral.



SECTION OF A GOTHIC CATHEDRAL SHOWING FLYING BUTTRESSES.

The building a result of evolution.

Refining development.

ROMANESQUE CHURCHES.

The Romanesque development of north Italy is an exceedingly interesting period to the student of architectural history. The churches in question are not massive in their appearance, but are very interesting in the arcades which are introduced on front and side; in the curiously sculptured porches with galleries resting on columns sustained on the backs of lions or other animals. Bell towers add a constant interest to many of these north Italian churches. In their interiors they show even greater promise of the development of the style. Piers of masonry are grouped, the arches of arcades are grouped sometimes, there is a hint on many sides of the change which eventually will blossom out in the clustered Gothic columns in the north. Much quoted as an example of this construction is the Cathedral of Pisa, which with its leaning bell tower and circular baptistery, makes such an imposing group beside the Campo Santo in the historic town. Decorators indeed were the men who planned those exteriors, so full of interest, color, and variety, that one forgets in their presence how unnecessary from a constructive standpoint their columned beauties are. The Cathedral of Pisa shows very clearly how far the church plan had developed in the projection of the transept arms beyond the side walls as well as in the apsidal chapels which adorn their ends. The Leaning Tower — was it intended to lean or not, are its foundations horizontal or have they

Italian
Romanesque.

Bell towers.

Interiors.

Group at Pisa.

Cathedral.

Leaning
Tower.



CHURCH OF ST. DENIS, FRANCE
"Medieval church architecture is most inspiring."

ROMANESQUE CHURCHES.

settled? How many times those questions come to us, and yet would an answer modify one whit our interest in the noble group of buildings? One characteristic of the Italian building of the period is the banding of light and dark stones, deep greens, creamy tints, and pale rose entering into a grand mosaic scheme which is very charming.

Characteristic
stone-work.

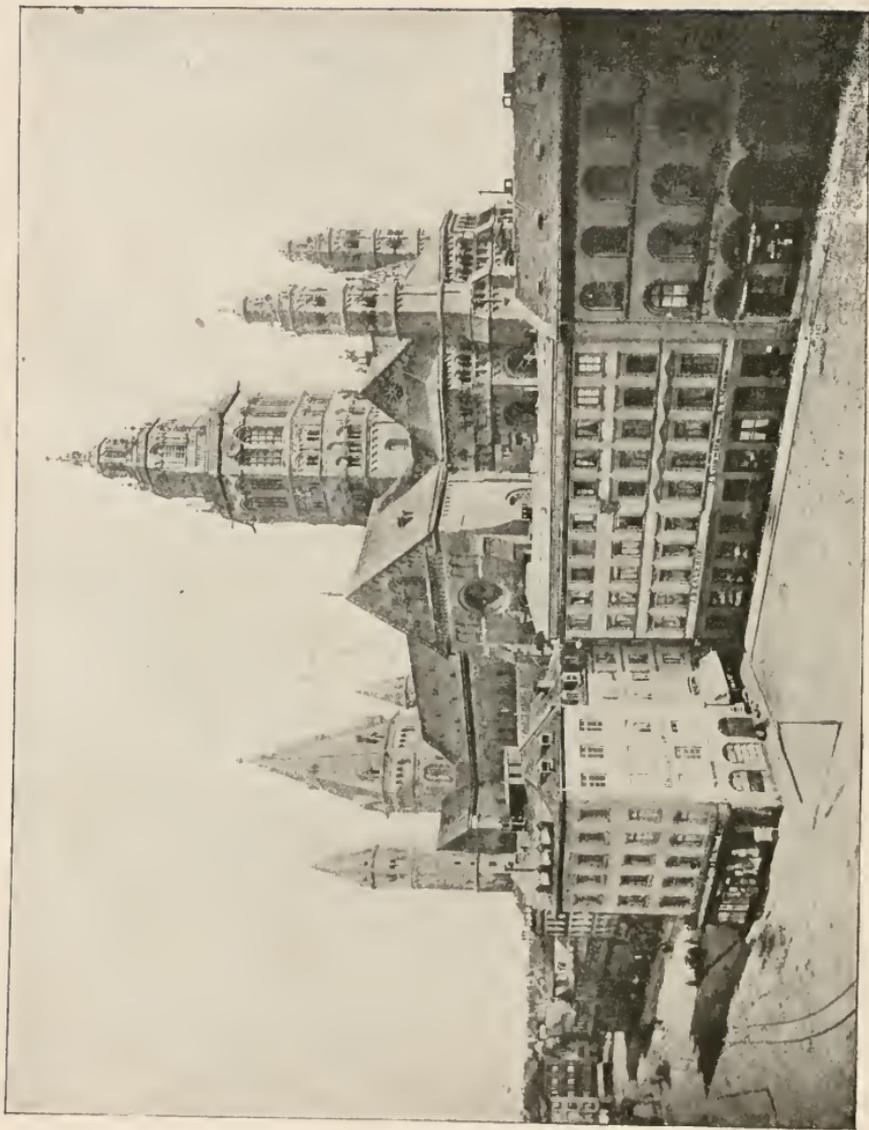
The Romanesque churches of France are even more closely marked by classic influence than some to the south. The country along the Mediterranean and the banks of the Rhone is full of Roman remains.—temples, amphitheatres and aqueducts—which must early have influenced the monastic builder. Heavy walls, massive round arches, and decorated doorways mark the type of building throughout this interesting section, while from the interior they show in plan and arrangement an even more close dependence upon earlier models. Ornamental capitals and sculptured ornament based closely upon Roman and Byzantine originals show how the classic leaven of commerce and environment influenced these buildings of Provence and central France.

French
Romanesque.

Characteris-
tics.

A trip through the Rhineland which does not include some of the great Romanesque churches is certainly devoid of much of the interest of that picturesque section. The Rhenish Romanesque is a style of great dignity, massive scale, and imposing buildings, showing in the great churches of

Rhenish
Romanesque



CATHEDRAL OF MAYENCE, RHINELAND
“The Rhenish Romanesque is a style of great dignity.”



THE CATHEDRAL AT BONN, RHINELAND.

Mayence, Speyer and Worms most valuable examples, while in some of the smaller churches, for instance at Cologne, exterior details of great interest are at hand for our study. The Rhineland church, like its environment, is picturesque in its

Prominent examples in the Rhineland.



APOSTLES' CHURCH, COLOGNE.

Picturesque
mass and
charming
details.

outlines and its mass. It is charming too, when its details are closely examined, showing a decorative quality in arrangement of design only second to that of the north Italian church. The arcaded galleries under the cornices, seen for instance in

ROMANESQUE CHURCHES.

our picture of the Apostles' Church at Cologne, the picturesque clustering of central or turret towers, and the peculiar disposition of the openings in the spires are all of great charm, interest, and individuality.

Apostles' Church,
Cologne.



CATHEDRAL OF WORMS.

There is something about the Romanesque style which suggests its birthday in a period of conquest and turmoil. We can easily understand the temper of some of the fighting bishops when we study the castle-like towers which they erected. Such particularly is the character of some erected on English soil by those who followed in the train of Norman William. Normandy was a fine ground for development and for a retrospective view for

The Romanesque a fortress-like style.

Influence of architecture in Normandy

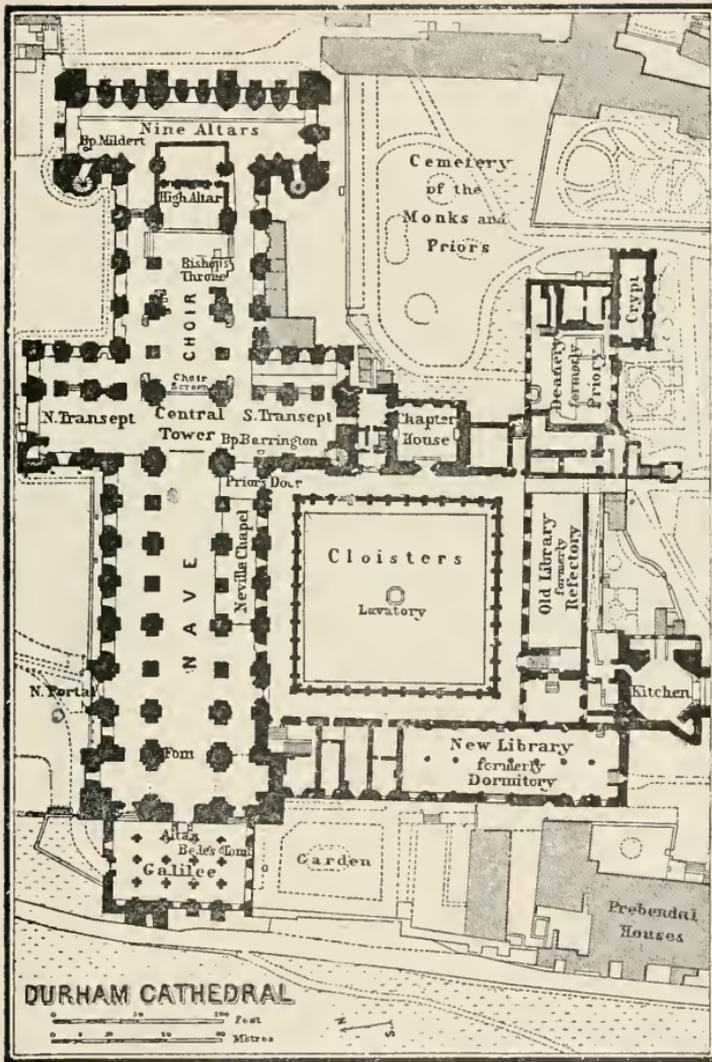
English
examples of
Romanesque.

those who would surpass on British soil the churches of their homeland Durham, on its rocky hill-top, looks out over the country as a great castle might rest upon the height, a center



TOWER OF ELY.
"The castle-like towers."

of influence for the oppressed, a spiritual if not a temporal barrier against the north. The spire of Norwich, too, recalls the sturdy Romanesque builder, as does the tower of Ely, the interior of Peterboro, or the massive piers of Gloucester. Canterbury, far to the south in the Kentish country, preserves some of its Romanesque foundation in details and ruins.



PLAN OF DURHAM CATHEDRAL AND ITS SURROUNDING BUILDINGS.

OUTLINES OF ARCHITECTURE.

It is in England alone that we can adequately picture from the existing remains just what the old monastic foundation stood for as a light in the tur-



NORMAN STAIRCASE, CANTERBURY

General
arrangement
of a monastic
establish-
ment.

moil of the existing environment. Durham and Canterbury preserve to us, although in ruins, the general plan of their original monastic buildings. There we may trace the ivy-grown walls of refectories, cloisters, chapter houses, infirmaries, bake-houses, kitchens, homes for the shelter of the pilgrims, barns, stables, fertile lands, forests, and fish ponds. The monastic establishment of the Romanesque period was a community complete in itself, not only self-sustaining, but helpful to all as well.

CHAPTER VIII.

GOTHIC CATHEDRALS.

*Ah! from what agonies of heart and brain,
What exultations trampling on despair,
What tenderness, what tears, what hate of wrong,
What passionate outcry of a soul in pain,
Uprose this poem of the earth and air,
This mediæval miracle of song!*

—LONGFELLOW in "*Divina Commedia.*"



CATHEDRAL OF PARIS.

"It is the towering façade which is the distinctive feature of this great gray beauty."



AMIENS CATHEDRAL OVER THE HOUSE-TOPS.

‘Amiens is a city with no striking architectural features aside from its great church.’



PERIODS in the world's history which can show parallels in activity and creative ability to the one marking the rise of the cathedral builders would certainly be hard to find. We recall the great temples reflected in the waters of the Nile, the ruined halls in Assyrian deserts, the glory of the "temples made with hands" upon the Athenian Acropolis, or the arches and vaults of pagan Rome. We think of Byzantine mosaics, Saracenic chromatic decorations, or the basilica

Gothic times a period of unparalleled activity.

Comparative building methods.

OUTLINES OF ARCHITECTURE.

constructions of the dark ages, and we naturally question whether the cathedral type was superior to all of these.

Standpoints
for study.

We can approach this subject from many standpoints; from the romantic one of association of great names; as a grand example of the mason's effort, or a beautifully balanced fabric of thrust and counter-thrust; and we may also think of it as the product of a great national outburst, a crystallized expression of the popular feeling which knew no bound or stay. This is the standpoint where the mind lingers most lovingly and toward which it most often returns.

Gothic building an art of the people.

The temples of Egypt grew up under the lash of the oppressor, Assyrian halls were raised by the might of alien captives, Greece employed her slaves to bring her columned glories into being, and Rome grew most rapidly when the supply of convict labor was most abundant. Only since the coming of Christianity with the freedom of a brotherhood of man has any building by the people, for the people, been possible. Spontaneity of effort and splendid creative energy are but the natural manifestations of such freedom. No wonder then that the era of the cathedral builders is the grandest this world has ever seen.

End of dark ages.

The period which we know as the dark ages had rolled away. The dread year One Thousand, to which men looked forward with apprehension had passed, and the long predicted destruc-

GOTHIC CATHEDRALS.

tion of the world had not occurred. The nations breathed freer as they shook off the fetters of superstition and ignorance and awoke to the dawning of a better day. The middle ages had been a period of silence, misery, and crushing feudalism. These new centuries were to be the birthdays of law, order, learning, national life, literature, and song. The fireside stories of the people began to shape themselves into national literature, the songs of the wandering minstrels became the legacy of all people, and everywhere and in every walk of life it seemed as if men had taken a new lease of social relationship. Like the unconsciousness of youth was the period of the dark ages, now was the young manhood of northern Europe. This energetic spirit began to make itself felt everywhere. In place of a land governed by many petty lords, we see the beginning of a centralizing power, bound sooner or later to develop into a supreme ruler at the head of the national life. With security and peace in the land, material prosperity increased, and before long we watch that flower of advancing civilization, art, in one of its grandest and most interesting expressions. For architecture, sculpture, and painting, seemed to catch the inspiration, or rather reflected the energetic national life, and blossomed forth into a growth of rare beauty and character. Building seemed to give vent to the feelings so long pent up in the confines of the dark ages, and

Comparisons
old and new.

Budding liter-
ature.

Dark ages a
period of
unconscious-
ness.

Rise of sover-
eign power.

Flowering of
art.

OUTLINES OF ARCHITECTURE.

churches began to take the place of chapels all over northern Europe. Young and old, rich and poor, took up the common work and in a few centuries architecture bloomed in the glorious cathedrals which are our delight and pride.

Building a
common
work.



NOTRE DAME, PARIS.

“Rising so proudly above . . . the old island of *La Cité*.”

This then in a word is the reason of being of Gothic architecture. The towering cathedrals which dot the old royal domain of France, lie nestling in the bosom of green English landscapes, or rise above the housetops in many a continental city, are but the life of the period crystalized in stone. They are the most solemn expression of the most powerful forces which have moved men’s thoughts since religious culture began.

Reason of
Gothic archi-
tecture.

GOTHIC CATHEDRALS.

The germ of Gothic architecture lay in the method of covering space by the arching stonework called the vault. In the earlier days, in Romanesque times, massive round arches had played their part, and heavy barrel vaults had roofed in the structures. Now we watch the gradual superseding of the round headed by the pointed arch, not only in windows and doors, but as part of the supporting framework of the stone covering of nave, aisles, transepts, choir, and chapels. Strange as it may seem this change in methods of building altered in time the whole character of the structure. We cannot say that it developed suddenly, or was introduced by any one man. Indeed we question whether those who first used the new methods had any idea of the revolution in building which they were causing. It was a matter of orderly advance along well proven, experimental lines, a development in which the hard-headed common sense of the practical stonemason was furnishing forms of true beauty so well adapted to their purpose.

Germ of Gothic architecture.

Vaulting, round and pointed.

Revolutionary methods.

Let us follow step by step some of these changes in building methods. Every Roman or Romanesque mason had experienced difficulty in covering wide or irregular spaces with vaults based upon the round arch. The wider the church the higher this round arch vault must soar and this in itself was enough to cause the structural weakness of many buildings. Few walls indeed could stand

Progress in vaulting.



SECTION OF A ROUND ARCH CHURCH.

successfully and resist the side pressure which such arches exert.

Adaptability
of pointed
vaults.

In contrast to this unwieldy round arch stands the easily adjusted pointed arch capable of spanning wide or narrow areas, rising to various heights from the same springing point, and exerting less side pressure. Slight wonder this style of arch became so popular in the types of new buildings projected. Its most important application was the framework of the vaults, by means of which the churches were covered in and enclosed.

Vaults and
their con-
struction.

Let us follow the successive steps of the stonemasons in order to appreciate what is meant by a vault and how it is constructed. Suppose four piers have been built up from the pavement and

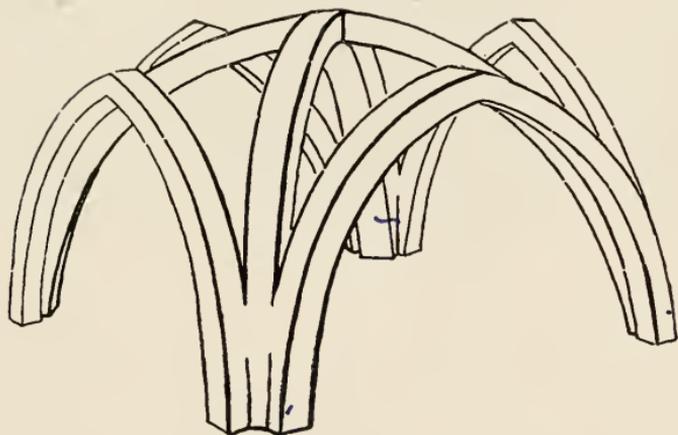
Piers.

GOTHIC CATHEDRALS.

stand as a section, or bay, of the church ready to receive the vaulting. A pointed arch is first built from one pier to its mate across the church. This is followed by a similar transverse arch uniting the second pair of piers. Next are erected pointed

Bays.

Transverse ribs.



ILLUSTRATING AN ARRANGEMENT OF VAULTING RIBS.

arches springing from the same level, let us say, as the transverse arches or ribs, and rising to the same height. Technically speaking we have now seen finished the transverse and longitudinal ribs of one bay. This would undoubtedly be rectangular in plan, for the distance from pier to pier along the church is less than the span across the structure. Diagonal arches are next constructed

Longitudinal ribs.

Diagonal ribs.



DETAIL OF THE VAULTING OF AMIENS CATHEDRAL.

springing from the same level and rising to the same height as those already finished.

Completion of
the vault.

Thus are constructed the ribs of a permanent framework, made heavy enough to carry the weight of the light masonry which is arched in irregular curve to fill in the spaces or compartments of the vault. Sketch hastily the plan of such a vault with its transverse, longitudinal, and diagonal ribs and it will be easily seen how the arching masonry fills up the compartments. Not quite so easy is it to imagine the irregular courses of the compartment masonry, but this will be clear by study of some good picture of a Gothic interior showing the structure of the vault.



ILLUSTRATING THE CONSTRUCTION OF AMIENS CATHEDRAL.

Elastic character of Gothic vault.

Refinements and modifications.

Growth of the buttress.

This new building manner was most elastic. Spaces irregular in plan could now be vaulted, and height and space could easily be accomplished without appreciably increasing the weight of the material. Naturally this gave every opportunity for the ambitious builders, and structures began to extend, widen, and rise to greater heights. All pressures thus gathered into the ribs, were in turn transferred to the piers. Slowly but in keeping with architectural development these members were refined and modified until in the best Gothic the pier looks like a bundle of clustered columns each rising from the pavement and continuing until the right and proper rib is found. This was part of the scheme for fine organization. More came in the development of the buttress to sustain and brace this vaulting fabric. For the pointed arch has side pressure to be resisted although not as much perhaps as its round arched brother of earlier days. In Romanesque times the side thrusts of the arches had been met by the weight of continuous heavy walls. This was impossible in Gothic times when the tendency was a reduction of weight by systematic well-planned effort. So through the decades of Gothic church building we follow the growth of the buttress, the most striking and effective element of the new style, from the simple thickening of the wall, through the bracing arch, into the most highly developed flying buttress

GOTHIC CATHEDRALS.

bringing its support just where it was needed against the vaulting ribs of the upper fabric, and finishing lower down against the finely built pier with its sculptured canopy and finials.

The walls were now no longer needed for the support of the roofs and vaults, and consequently lost some of the old solidity, while the spaces between the buttresses were filled with glorious windows. All this did much to change the character of the church both externally and in the interior. Important details were emphasized, the general scale increased, beautiful decorations added, and a wonderful fabric evolved.

Walls and windows.

Decoration of details.

Almost all Europe has its Gothic churches, yet it was in the *Ile-de-France*, the old royal domain, that this wonderful style was born. Between the seven or eight great cathedrals which rise to-day above the cities of that district it is not hard to choose the typical ones. From the list of Chartres, Bourges, Paris, Soissons, Laon, Rheims, and Amiens, one can hardly help selecting the four great blooming sisters, Paris, Chartres, Rheims, and Amiens.

Birth of Gothic in *Ile-de-France*.

Typical churches

The Paris of to-day is a very different place from the city of Gothic days. Thousands of associations, bits of history, or interesting buildings attract us in this modern capital, but our interest for the present must concentrate upon the great metropolitan church, rising so proudly above the buildings of the old island of *La Cité*, the cathe-

Paris.

Notre Dame.



CATHEDRAL OF CHARTRES.

"The great cathedral upon the hill-top at Chartres."

GOTHIC CATHEDRALS.

dral church of Our Lady of Paris. Enormous sums of money (no less than twenty millions of dollars) have been spent to bring this fabric into being. It offers the greatest unity and perfection of details, and stands a monument of grand monarchical history, an image of national patriotism, where all true Frenchmen bow to national Gothic genius. It is the towering façade which is the distinctive feature of this great gray beauty. Easily is it the queen of Gothic façades, every inch regal in its monumental majesty, beautiful in the grandeur and simplicity of an idea logically expressed, original in style, decoration, and power.

Façade as a distinctive feature.

Chartres is one of the most illustrious and noble of the ancient cities of France. Tradition has it that a town was founded on the hill-top six hundred years before Christ lay in the manger in Bethlehem, and that here also the Druids met and celebrated the worship of "a maiden who should bear a child." Gothic art may have left us more homogeneous, more brilliant work, but it has certainly produced nothing more living, more grand, or original than the great cathedral upon the hill-top at Chartres. It is the grandeur of its grouping, majesty of sky-line, dignity of towers, and richness of sculpture and glass, which makes us think lovingly of this church.

Chartres.

Grand grouping and sky-line.

When the complete history of Gothic art is written, that chapter which describes the illustrious and gigantic cathedral of Rheims will be given an

Rheims.



NAVE AND CHOIR OF RHEIMS.

“ Like Paris it has its memories, like St. Denis it is associated with the names of kings,
like English Canterbury it stands a mother church.”

GOTHIC CATHEDRALS.

important position. Like Paris it has its memories, like St. Denis it is associated with the names of the kings, like English Canterbury it stands



RHEIMS CATHEDRAL.

as a mother church, the home of a line of archbishops most powerful in the land. Carried out on the lines of its original plan this church would have been incontestably the queen of churches. In its actual state, shorn of its unrivalled spires, stained with the marks of the

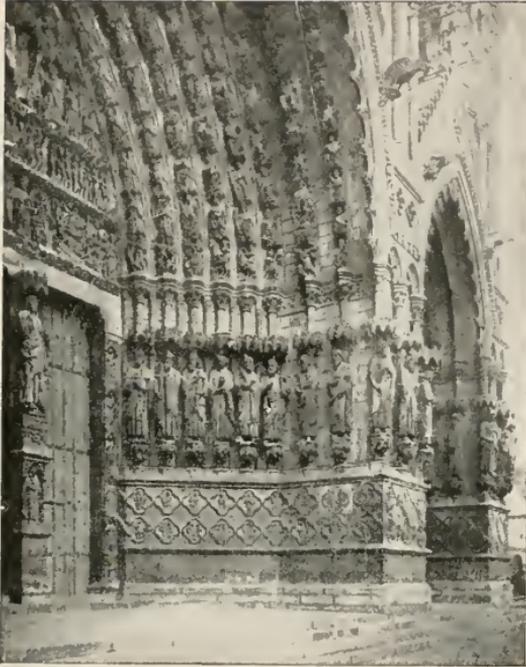
devastating conflagration, it is still indeed a monument worthy of its proud position in the land. It would be hard to imagine complete beauty more thoroughly combined, or to cite a better example of the skill of the thirteenth century master in keeping an even balance between light and shade, between vertical, horizontal, and inclined lines; between construction and decoration; or how theory on paper and practice in stone

Harmonious
composition.



NAVE OF AMIENS.

"It is the high water mark of Gothic art."

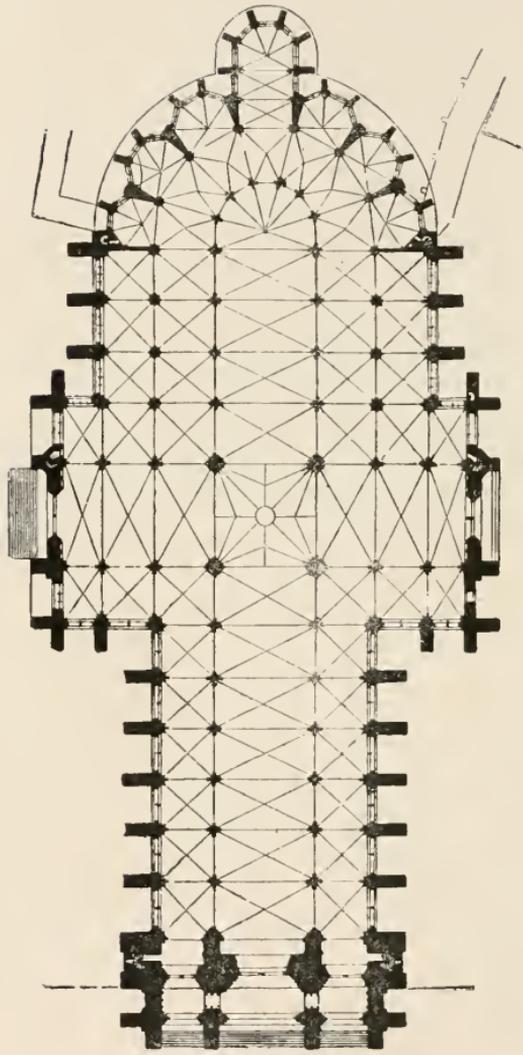


PORTALS OF AMIENS CATHEDRAL.

worked together for good beneath his skilful hand.

The great cathedral of Amiens is in plan and structure the leader in France. Commenced several years after Rheims, it has been the mother type from which many French cathedrals have been copied, and indeed this product of Picardy has dominated all northern and western Europe. It is the high water mark of Gothic art, a masterpiece of all its perfected power and plenitude. Amiens is a city with no striking architectural features aside from its great church, which towers above the housetops in a masterly dignity consi-

Amiens a
type.



PLAN OF AMIENS CATHEDRAL.

GOTHIC CATHEDRALS.

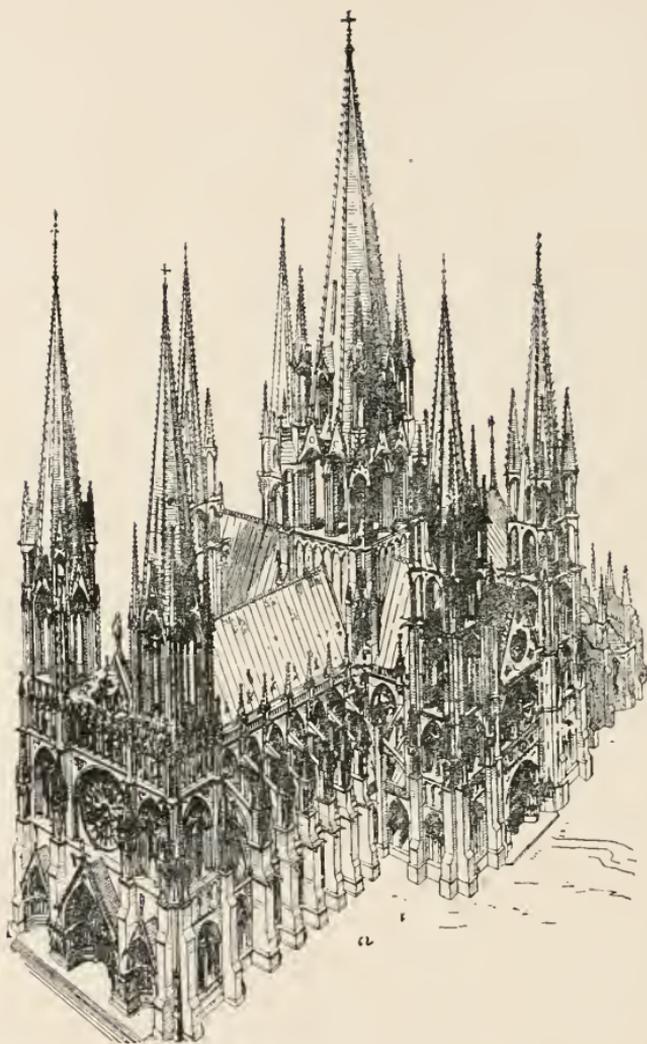
tent with its chief characteristics, great height, and fineness of supporting members. As we look at the façade (see frontispiece) we may be tempted to say it lacks the uniformity of Paris or Rheims, but lack of uniformity was not a crying sin in mediæval days. Moreover there is reason to doubt that above the great rose the original design of Master Robert was consistently carried out. In thoroughness and logical harmonious arrangement there is nothing finer in Gothic art than this façade up to and including the stage of the great window. Certainly nothing could be more elegant, more expressive of noble function than those vast, unrivalled portals engaging against the monster bracing buttresses, the lacework of horizontal arcades, the decorative quality of the gallery of kings, or the wonderful tracery of the rose.

High water
marks of
Gothic art.

Between the four great cathedrals choice is indeed difficult. It is a matter of personal preference and individual temperament. Each has its individuality,—each forms a complete, harmonious whole,—and each has a dominant characteristic. At Paris it is the façade, at Chartres the spires, at Rheims the choir and sculpture, at Amiens the nave.

Comparisons
of great
churches.

The story of the growth of the French Gothic church, from the fabric of the Romanesque builders to the grand cathedral type, is certainly the most interesting in all the chapters of architectural history. Progressing in rapid but thoroughly



RESTORATION OF RHEIMS CATHEDRAL.

“Carried out on the lines of its original plan this church would have been incontestably the queen of churches.”



COLOGNE CATHEDRAL.
“The greatest cathedral of them all.”

systematic and logical steps, it leads the student from church to church, from Bishop Suger's efforts at St. Denis onward to the marvellous cathedral structure which towers above the house-tops of Amiens. The fifty years following the completion of St. Denis served for the development of this wonderful style; scarcely two generations for its progress from conception to full fruition. The little street gamin of St. Denis who witnessed the pomp and ceremony of consecration at his famous local church (1144), could in his sturdy manhood, have journeyed into Paris to watch the similar

Periods of
development.



DURHAM CATHEDRAL FROM THE RIVER.

“We would not exclude the . . . buildings . . . in England.”



SIENA CATHEDRAL.

“The cathedral of Italy was more classic than Gothic.”

service at the altar of stately Notre Dame (1182); and as a gray-haired citizen, and again the feeble veteran might have taken part in the enthusiasm at the rebuilding of Chartres (1195), or the laying of the foundations at Rheims (1212), or Amiens (1220).

Gothic architecture was born in northern France and there alone can it be studied in all its purity. In making this statement we do not forget the

Birth of
Gothic in
France.

might of the greatest cathedral of them all, that of the Rhineland at Cologne. But Cologne is Amiens' grown up daughter, married into a foreign land. Moreover we would not exclude the unrivalled series of buildings which make a summer in England so interesting, yet we cannot forget that the fountain head of the best Gothic was not on English soil. The Gothic cathedral of Italy was more classic than Gothic. Its openings were pointed it is true but pointed arches are not all there is to Gothic architecture, and in structure and organization Siena and Oviato cannot compare with Rheims or Amiens. So too, with the buildings of Spain and thus we complete our circuit. Northern France first broke the power of feudalism and developed communistic sentiment. In the pride of that outburst which knew no bound or stay, Gothic art was born.

No period in the world's history can show a parallel to such architectural activity, no other stands for so much of the brotherhood of man. It was a building era for the people, and by the people, in common consecration at the altar of their God.

Cologne.

English cathedrals.

Italian Gothic.

Spain.

A period of unparalleled activity.

CHAPTER IX.

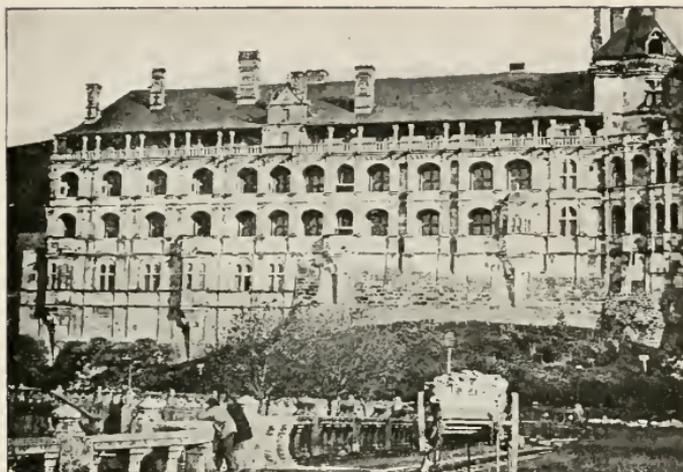
THE RENAISSANCE AND ITS
ARCHITECTURE.

*In the old Tuscan town stands Giotto's tower,
The lily of Florence blossoming in stone, —
A vision, a delight, and a desire, —
The builder's perfect and centennial flower,
That in the night of ages bloomed alone.*

—LONGFELLOW in "Giotto's Tower."



GIOTTO'S TOWER, FLORENCE.
"The lily of Florence blossoming in stone."



CHATEAU OF BLOIS, FRANCE.

“The chateaux which are the gems of the old royal hunting country.”



THE Renaissance is a period which may be profitably studied from several standpoints, for in no era of art history have a greater number of influences played around a new departure, or more widely influenced its progress. It is a period which stands for much more than its name implies, a re-birth, to be sure, in many a sense; but from the standpoint of these chapters we must look at the architectural development as the flowering of deeply planted causes. A true recog-

Renaissance period one of many influences.

OUTLINES OF ARCHITECTURE.

nition of what the era means requires an appreciation of the conditions of mediævalism, some of which were hinted at in our last chapter.

Conditions of
the body
politic.
Eastern
Empire.

In the old body politic we remember the Eastern Empire with its civilization and artistic power centering around Constantinople. We must not forget as an interesting point that this empire, and particularly this capital, was being seriously menaced by Mohammedan interests, and it was only a question of time before the city would fall. We may remember the Western Empire, the Holy Roman empire, we sometimes call it, with its great architectural development in the Romanesque churches of the monastic builders. Standing last in point of interest in this three-fold combination then dominating Europe was the Papacy, knowing no east nor west, and destined to become a powerful uplifting factor in the era we are studying.

Western
Empire.

The Papacy.

Conditions of
social life.

The social life was that of feudalism, the hard, grinding condition of ignorance and subordination of the individual. Now the changes which modified these bodies politic and this social life, were the fall of the eastern empire under the sword of the Turks, the disintegration of the Western Empire for lack of worthy rulers, and everywhere an advancement and growth of a missionary church.

Fall of East-
ern Empire.

Disintegration
of the
Western
Empire.

Missionary
growth.

Crusades and
their
influence.

The Crusades also played their part. Men went forth in their ignorance expecting to fight with an uncultured infidel; they came back with an appreciation not only of his prowess in arms,

THE RENAISSANCE.

but an enlightenment due to contact with eastern civilization, art, learning, and courtesy. The return of the warriors from the sunny southland to their darkly built, cheerless, northern cities, must have been in tremendous contrast to the luxurious life they had witnessed while away. Only one result was possible under such conditions. Men were dissatisfied with their older habitations and desired to build in a manner in keeping with what they had seen.

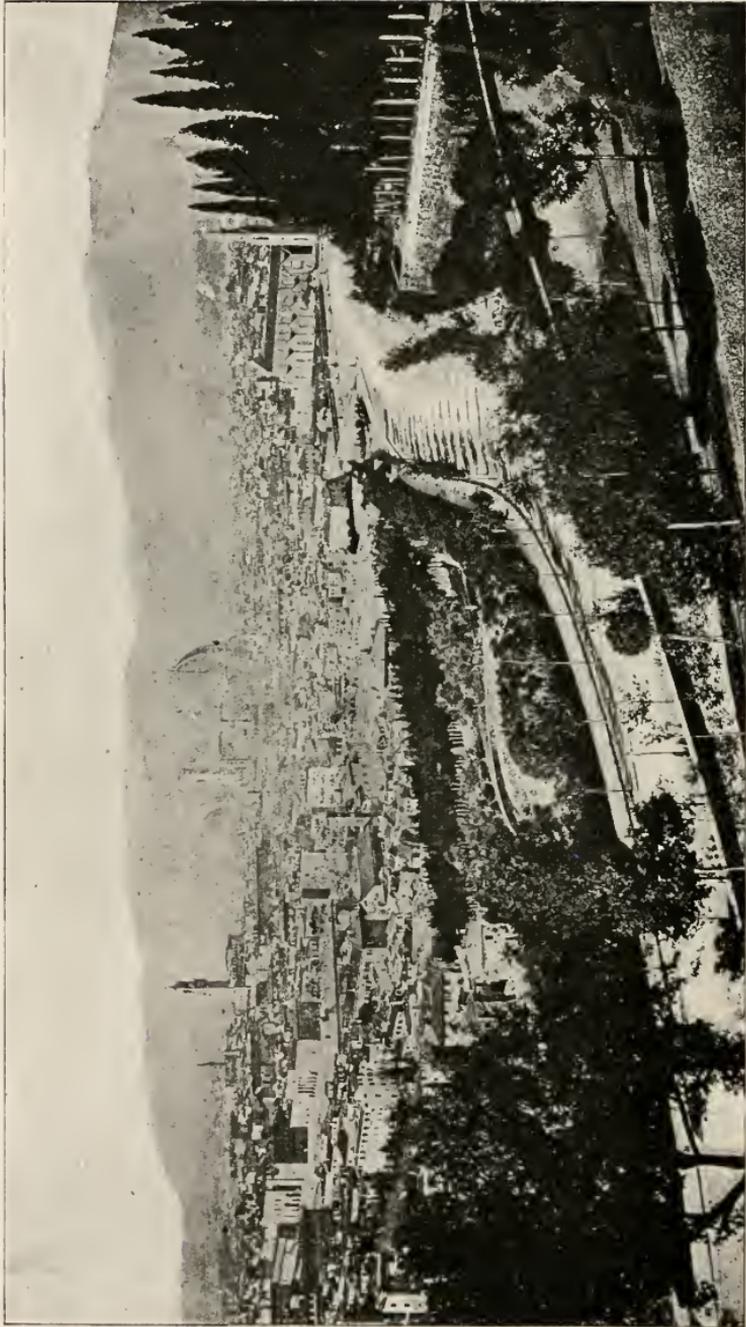
A developing commerce was also having its effect in bringing about the new order of things. The trader was becoming a man of consequence. The guilds of trade, indeed the guilds of every craft, were growing in wealth and power. The city, therefore, made up of traders, guild-workers, and individual men of power, was becoming a unit with which to reckon. With the rise of a free city and a recognition of the individual, came an end to the spirit of mediævalism.

The mediæval era was not unlike that of childhood. The control of church or feudal system was parental in its character. It was the period of unconsciousness, of an absolute lack of knowledge that there was anything of interest outside the narrow confines of individual lives. As unconsciously, too, it was a period of tutelage, of training for what was to follow. But the boy grows to manhood, and so, indeed, did unconscious mediævalism change to a wider, conscious

Commerce.

Influence of
guild-life

Unconscious-
ness of
mediæval era.



FLORENCE, FROM SAN MINIATO.
"Florence encircled with her misty purple hills."

THE RENAISSANCE.

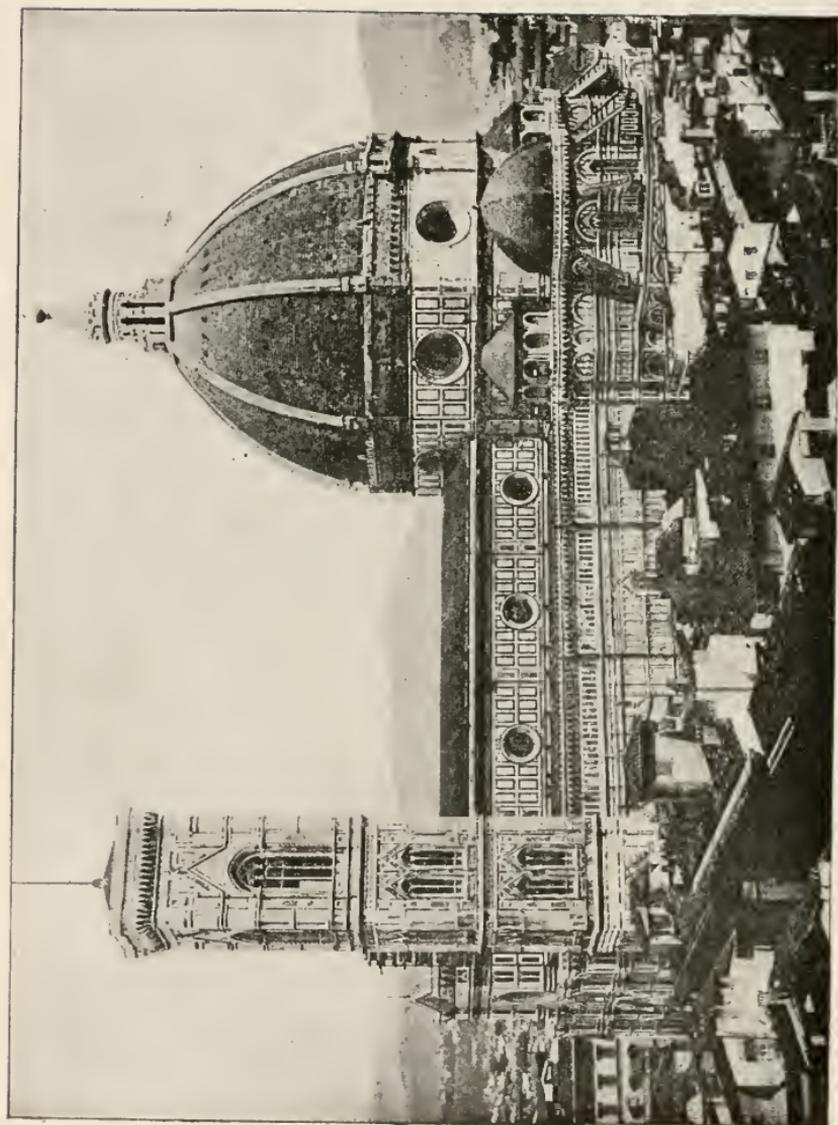
life. Commerce, travel, awakening curiosity, research, and individual thought were fostering the growth of the Renaissance.

Not unlike a deep, dark, pathless wood was the period of mediævalism. Everywhere was the underbrush of superstition and ignorance. Through this entangled condition traveled what one author has truly called that struggling, praying, throat-cutting population of the mediæval era. Gradually, however, to continue the figure, the wood lightened in places, streams of light from the eastern civilization shone in to illumine a pathway and show here and there a way to the open. Slowly but surely portions of Italy forced their way out along these pathways until one city of them all, throwing aside some of the conditions which hampered the others, forced its way to success and enlightenment, out into the wide valley beside the Arno stream, where Florence, encircled by her misty purple hills, was to rise to a new and happier life. There her towers and housetops grew rosy with this other dawning, with the sunrise of a new historic period, for the end of the night of mediævalism was come and it was the beginning of the day of Renaissance.

Comparisons

Prominence of
Florence.

The city of Florence was indeed a leader in this development and new life. Never since the days of Athens, had there been another community so filled with the love of beauty, and better still, so endowed with the capacity and



CATHEDRAL AND GIOTTO'S TOWER, FLORENCE.
"The great dome . . . crowning the cathedral, and dominating the whole Florentine landscape."

THE RENAISSANCE.

means to realize it. Artists and artisans flocked to that favorite city — goldsmiths, sculptors, architects, painters, engineers — all tempted by the opportunity for individual effort and for distinction which the art revival presented.

Individualism is the key-note of the period: — the individual ruler, rather than a host of feudal chiefs; the individual citizen, instead of a blindly led populace; and an individual artist in absolute charge of a great undertaking, rather than a body of workers each going his separate way. There was more than a hint of this change when Giotto reared his famous Bell Tower, that “lily of Florence blossoming in stone.” There is more of the Roman mosaic about this marvellously beautiful structure than there is in the Gothic cathedral beside which it was destined to take its stand. It was another great step toward individualism when Brunelleschi was given the entire charge of the erection of the great dome, now crowning the cathedral, and dominating the whole Florentine landscape. His was a wonderful undertaking, and an equally great success, for he recreated on nobler lines the dome of the Roman Pantheon, and from the very originality of his conception, re-established a type which has become the dominating member of many a later structure.

In architecture the Renaissance is a rebirth of the types of building common to Rome and Greece, united in a manner consistent with the

Individualism
in life and art

Renaissance a
rebirth of
classic
methods.

needs of a new and different civilization. This new style first showed itself in sculpture under the influence of the classic marbles everywhere dug up or found throughout Italy. With a wider interest in classic art born in the awakened enthusiasm for the study of literature, men turned their thoughts beyond Rome to Greece itself, from which the purest art types had come centuries before to Rome. We should not be surprised, therefore, if in some of the earlier structures we found more or less slavish copies of somewhat poor Roman types. With wider knowledge and finer types architectural examples improved.

The Renaissance style is, therefore, a combination of the elements of classic architecture, a style in which both the lintel and the arch find their place, in which, too, the column appears, but largely in decorative and not in constructive use. It will be remembered that the Greek used his columns structurally, that for instance, if one of the mighty supports of the Parthenon were removed, the building must of necessity suffer most seriously, even to the downfall of some of its members. The Roman, we remember, used his column decoratively, as in his great triumphal arches and in similarly planned structures. The arch would stand structurally, even with the loss of its columns, and this leads one to mention a test which may be applied in the determination of a building's architectural character. If it is later than the classic

THE RENAISSANCE.

period and contains columns used decoratively it is surely Renaissance in character. Any structure from which the columns could be removed and still stand is of the type we are discussing.

In Renaissance architecture we find the use of the three types of column, Doric, Ionic, and Corinthian, which interested us in our study of Greek types. So, too, do we find a most happy use of remarkably beautiful ornament. It was a period when great attention was given everywhere to decorative compositions, when beautiful pulpits, balustrades and galleries were fashioned in the churches, and when sculptured groups and artistic reliefs were daily in the sight of all the people.

Use of Doric, Ionic and Corinthian columns.

The whole history of the Renaissance as far as Italian architecture is concerned lies in the series of structures, which, commencing with the Duomo or cathedral at Florence, culminated in the completion of the vast fabric of St. Peter's at Rome. Churches, palaces, villas, and public buildings were the projects upon which the architects left the impress of their genius; and the study of their buildings in detail forms an exceedingly interesting period of the world as well as of art history.

Renaissance structures.

The story of the completion of the Cathedral of Florence by the soaring dome with which Brunelleschi crowned the structure, is exceedingly typical of the period. Therein we read the growth of a civic pride; a dissatisfaction with the incomplete

Cathedral of Florence and Brunelleschi.

building; the calling of a public competition for the presentation of designs; and the triumph of a well-trained, energetic mind in successful accomplishment. Not without friction and local jealousy did Brunelleschi attempt his task and we cannot help feeling a respect and admiration for the man, independent of his artistic power, who could so convince a non-professional jury of his power of accomplishment and carry them with him to eventful success, solely from the power of his impressive personality. That is one story which lies beneath that soaring dome, the like of which had never been seen, certainly not by the Italians in architectural history. To be sure, there was the domed Pantheon which Brunelleschi and his friend Donatello had made a journey to Rome to see, but the Pantheon impresses for its wonderful interior, and it is the exterior of the Duomo which makes such an impression on the Florentine skyline. Never since architectural history began, save in minor Mohammedan structures, was the soaring bulk of a beautiful form crowned and completed by the upward movement and finish of a beautiful lantern. It is easy to admire a structure of this character, possible to picture a time when it did not exist, but it brings home a conception of what is meant by genius when we ponder upon the originality of its accomplishment.

Just as interesting in their way are the palaces which the princely families of this city erected

Triumph of a rare personality.

Structures which influenced Brunelleschi.



COURTYARD OF THE BARGELLO PALACE, FLORENCE.
(Now the National Museum.)

for their occupancy. The condition of Florence necessitated a structure which could in time of need serve as a fortress as well as a home. This accounts for the heavy massive type, great stone foundations, narrow lower windows, and overhanging cornices. Occupying, as these buildings did, entire city blocks, the courtyard became an exceedingly important feature on which many an

Florentine
palaces.

Character-
istics.



THE GRAND CANAL, VENICE.

By the way of the
Venice Company, 1885.

THE RENAISSANCE.

architect lavished his best ideas of dignified spacing, contrasting lines, and happily disposed masses. The lower story of the court was often designed in columnar arcades, interesting external stairways frequently led to open galleries above, and wide windows served to light the spacious halls which the building contained. This idea of columnar arcades was also applied oftentimes throughout the city to the street façades of some of the buildings, producing a type of design spoken of as the loggia and serving as an arcaded sidewalk or a retreat from sun and rain.

Palace
arrangements.

While it should concern us most in a study of ornament, yet we should not proceed beyond this point without mentioning the work of many an artist prominent in his native country whose reputation rests, not upon the great architectural accomplishment, but upon the beautiful execution of shrines, chapels, pulpits, and projects of a similar character.

Minor
compositions.

Florence, although the cradle of this movement, was but one of the cities of Italy to blossom forth with the influences of this new development. Venice, in the pride of a maritime accomplishment, with wealth and opportunities, was a center for a most interesting growth. Byzantine influences, and later Gothic structures that line her squares or gazed at their rosy reflection in canals and lagoons, had long held sway in this city by the sea, but when the Renaissance spirit came

Venice in the
Renaissance.



ST. PETER'S AND THE VATICAN PALACE, ROME.

THE RENAISSANCE.

all other manners of building were abandoned. There are many churches throughout the city based upon this style, several important palaces line the Grand Canal, and the interior court of the Doge's Palace and the beautiful façade of the Library of St. Mark's are typical of Renaissance effort.

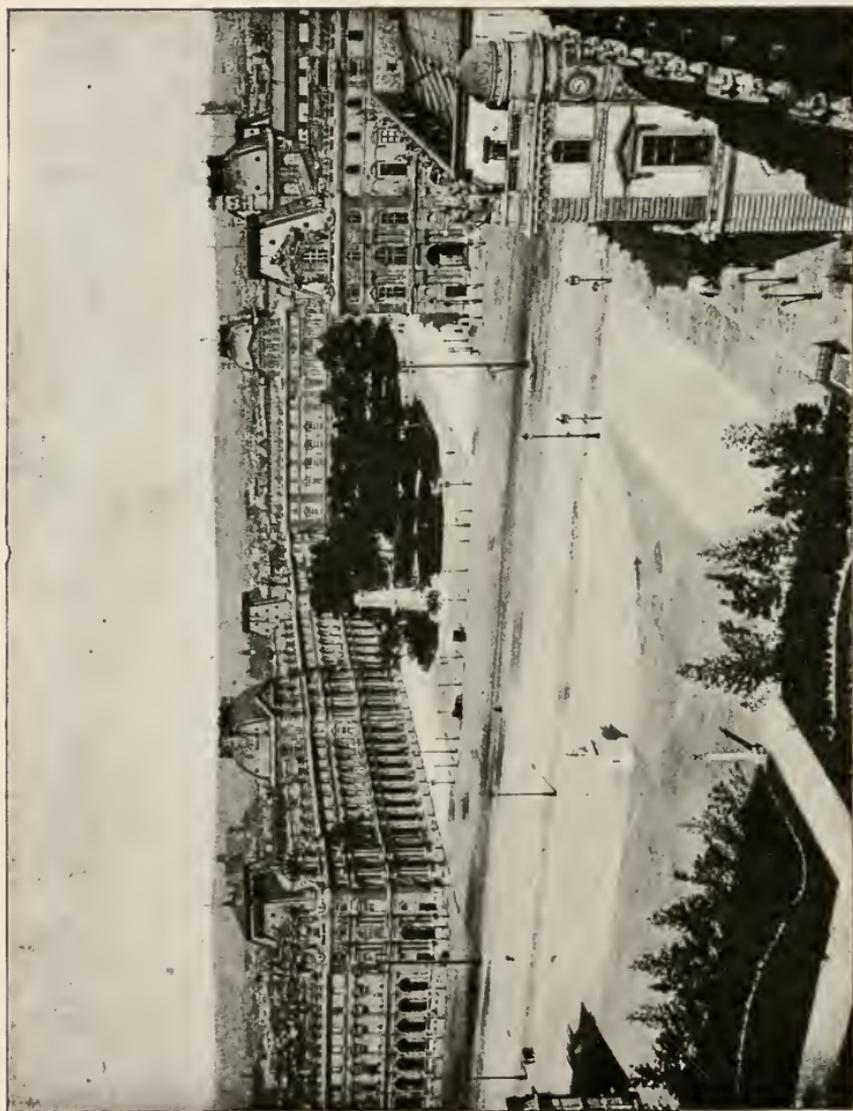
Venetian
Examples.

Roughly speaking the Renaissance divides itself into four periods: the Early Renaissance, 1420-90; the High Renaissance, 1490-1550; the Decline, 1550-1600, and the Rococo, 1600-1700. With the two last we shall have but little to do. Much of the revival thus far noted can be placed in the early period, and not until the High Renaissance was well advanced did Rome, the original Italian source of classic art, develop extensively in the style of the new era.

Periods of
Renaissance
development.

Palaces, churches, and chapels, here as in Florence, became the center of architectural interest, but the greatest effort of all, as far as magnitude and grandeur are concerned, was the erection of the largest church in Christendom, the building of St. Peter's. Few buildings have had the advantage or skilful direction by so many master minds. Bramante in 1506, with his original plan somewhat insecure for the stupendous undertaking; Raphael, San Gallo the Elder and Younger, and Peruzzi all carried the work forward; yet it remained for Michaelangelo to conceive the St. Peter's which we know to-day.

St. Peter's and
its architects.



THE LOUVRE, PARIS.
"Paris and its buildings represent a later and more formal type."

THE RENAISSANCE.

Taking Bramante's general plan, Michaelangelo strengthened the massive piers and walls, extended the nave arm of the originally planned Greek cross and raised over the whole the most majestic of domes, a crowning monument of his own architectural effort, as well as the highest glory of the Renaissance. Michaelangelo did not live to see the accomplishment of his project, and more recent architects have done much to destroy the simplicity of his grand design, but the church in spite of its alterations shows forth the master hand, a fitting culmination of revived artistic feeling on Italian soil.

Fashion is the most capricious of goddesses and dominates a field much wider than we are apt to think. In the brave days of old, when Charles, Louis, and Francis, Kings of France, went off to the wars with Italy, it was a France of Gothic architecture which they left behind, a national architecture, costume, and custom. Returning from the luxury of the south, and filled with the new ideas of another civilization it was only natural that the court should introduce another building manner, with the importation of southern artists, in the royal desire to rival the palaces and structures of their trans-Alpine campaign.

Like all similar artificial attempts the early efforts breathed a decided spirit of the old. Gothic ascending lines may have gone down before the horizontal masses of classic type, but

Michaelangelo-

Influence of wars between France and Italy.



DETAILS AT BLOIS.

“Ornament and details are sometimes slowest to change.”

Renaissance
chateaux.

Parisian
Examples.

national feelings die slowly and ornament and details are sometimes slowest to change. This is so clearly shown in the chateaux which are the gems of the old royal hunting country, the valley of the Loire, at Blois, Amboise, Azay-le-Rideau, Chenonceau, Chambord, or Chaumont. Paris and its buildings represent a later and more formal type and yet one typical of French genius, even when carried out on lines of the south. Such, for instance, are the different portions of the Louvre, the structures at Versailles, or the Hotel des Invalides, whose gilded dome dominates the city as St. Peter's dominates Rome.



CASTLE OF HEIDELBERG, GERMANY.

Many of the German palaces, castles, and princely houses, while planned in Renaissance days, retain, like the royal chateaux of France, many characteristics of the mediæval time. Perhaps one of the best examples of German Renaissance to be found anywhere is the Castle of Heidelberg, the courtyard façades of which, although seriously ruined, are of most interesting character.

German
Renaissance.

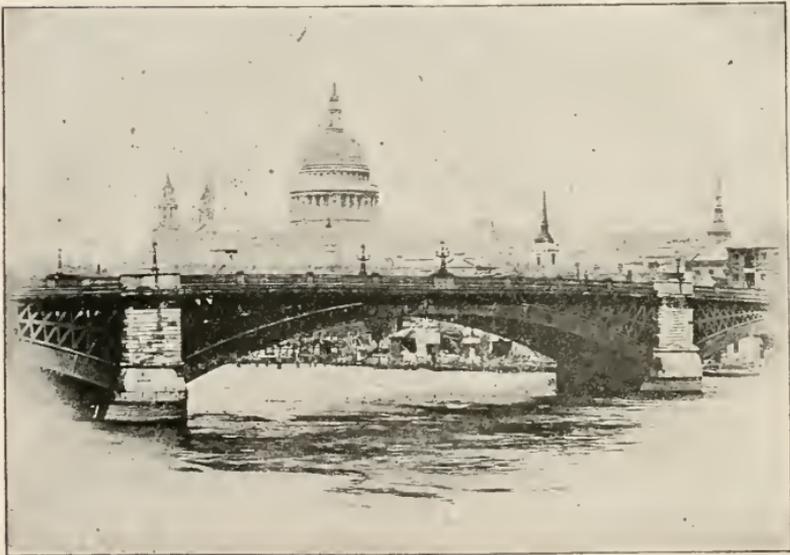
The long line of English cathedrals came to an end in a Renaissance structure of most imposing character, stately St. Paul's in London. Although

English
examples.

OUTLINES OF ARCHITECTURE.

planned originally on Gothic lines, yet in the period of reconstruction it is strictly Renaissance. Sir Christopher Wren knew how to adapt Italian characteristics to his northern church and in his stately dome do we not see the hint of earlier classic feeling? Within this structure lies the suggestion of Roman arch and dome, Early Christian planning, and Gothic arrangement. It is a fitting example, indeed, to choose as a closing study of our Renaissance development.

Sir Christopher Wren and his famous church of St. Paul's.



ST. PAUL'S, LONDON, FROM THE RIVER.

CHAPTER X.

ARCHITECTURE OF THE NINETEENTH CENTURY.

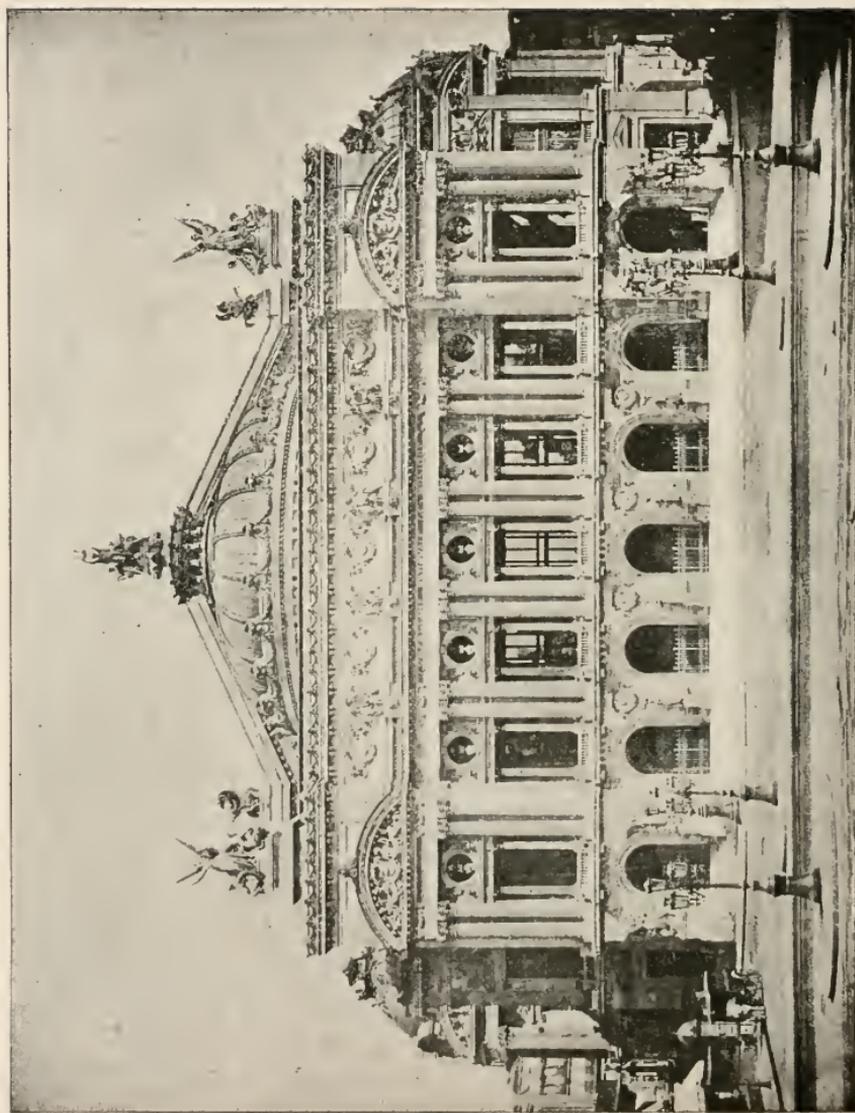
*Proudly beneath her glittering dome,
Our three-hilled city greets the morn ;
Here Freedom found her virgin home,—
The Bethlehem where her babe was born.*

*The lordly roofs of traffic rise
Amid the smoke of household fires ;
High o'er them in the peaceful skies
Faith points to heaven her clustering spires.*

*Behind the ever open gate
No pikes shall fence a crumbling throne,
No lackeys cringe, no courtiers wait,—
This palace is the people's own !*

— OLIVER WENDELL HOLMES

in "*The Dedication of the New City Library,*" Boston.



GRAND OPERA HOUSE, PARIS.



BRITISH MUSEUM, LONDON.

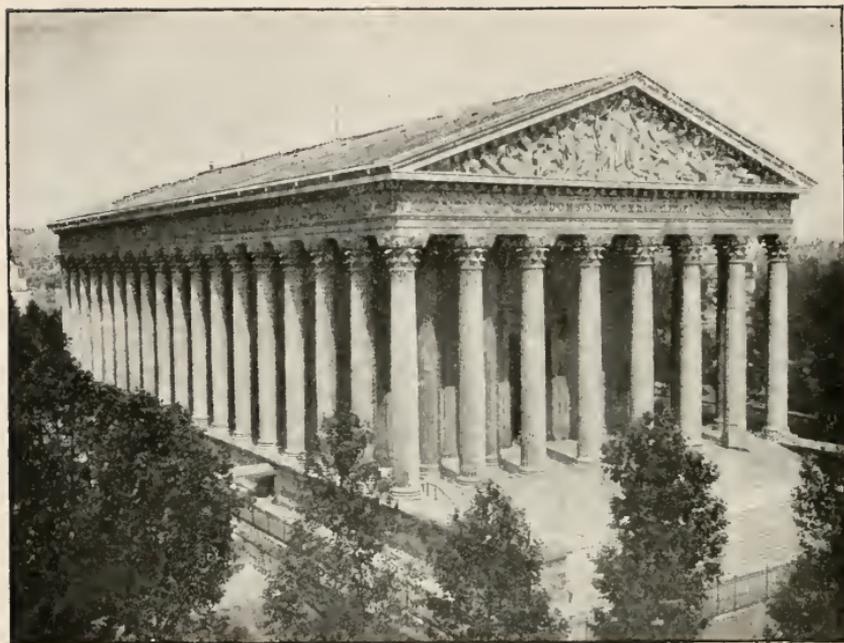
“Buildings which more closely follow the Greek manner.”



OUR own century has done something in the way of architectural development, not as long lived, of course, as many of the artistic expressions which we have followed, but none the less indicative of our age and social conditions. The nineteenth century has been an era of a great industrial development and progress, which, starting during the preceding century, has gathered an impetus and momentum hardly understood by

Architecture
of Nineteenth
Century.

Social and
industrial
conditions.



CHURCH OF THE MADELEINE, PARIS.

“As an example of the Roman copies might be cited the church of the Madeleine.”

those of us who live so close to its throbbing heart. Starting with the revival of the Roman manner of building, and later by the interest in the temple styles of Greece, we trace our way past many a most interesting structure to the dawning of our own times.

Duration of
Renaissance.

Renaissance, although growing constantly more formal and artistically lifeless, held its own until the middle of the eighteenth century, when a new literary interest in Greece, its marbles, architect-



ARC DE TRIUMPHE, PARIS.

“Roman copies with which the attempt was sought to counteract the uninteresting examples of late Renaissance.”

ure, and struggles for freedom from the rule of the Turk, began to make itself felt. This period of classic interest extends from the eighteenth into our own century and accounts for the style of many of the buildings carried forward during this stirring American history. Stately dignity and a

true simplicity marks the architecture as well as the lives and thoughts of those who gave it being.

The first quarter of our century had hardly been



TRINITY CHURCH,
NEW YORK CITY.

completed when a new archi-

tectural taste came forward as a

claimant for national recogni-

tion. This was the Gothic re-

vival showing its influence in

many a church spire erected

during the period. This revival,

like the classic which had pre-

ceded it, was based upon liter-

ary study, this time through an

investigation of the mediæval

era. It will be remembered

that the great development of

Gothic art had come to an end

when Italian methods and man-

ners had become popular in the

north. Throughout the Renais-

sance the great cathedrals had

been scoffed at as the product

of uncultured masons. With

the eighteenth century interest

in Greece, came a recognition

of the honesty of manly effort

and the utilization of nature's

inspiration. Broader minded

scholarship began to see these same manly qualities

and inspirations in mediæval life, tracing parallels

Gothic revival
and its results.

NINETEENTH CENTURY ARCHITECTURE.

in spontaneous development between the Gothic cathedral builder and the temple sculptor of Greece. Then, too, the custom of erecting Christian churches upon the plans of pagan temples was not without its influence, the moment the inconsistency was recognized. Naturally the popular artistic and literary mind went back to mediæval types for inspiration and the Gothic revival was born.

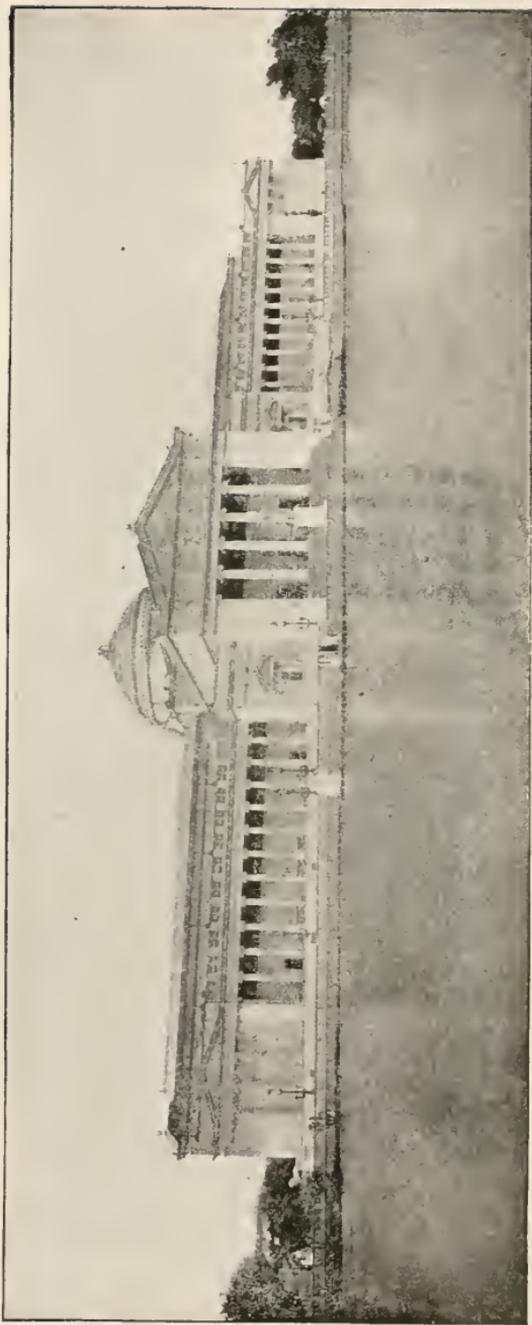
During the time of the Renaissance students starting with a study of Rome soon found themselves on the literary highway to Greece. In the same way an interest in Romanesque methods and also Italian Gothic came into being, through Gothic study, each leaving its impress upon the buildings erected before the beginning of our last quarter century.

Romanesque
and Italian
Gothic.



OLD NORTH CHURCH, BOSTON.
"A general air of dignity."

These twenty-five years have seen most extensive, impressive, and flexible advancement in



FIELD COLUMBIAN MUSEUM, CHICAGO

“We returned to classic members and decoration in that ‘Dream City’ on Chicago’s lake front.”

NINETEENTH CENTURY ARCHITECTURE.

architectural progress. This last was an era when great minds dominated practical problems, creating results which have shown their influence the country over. This, too, was the era of the American home planned in the happiest of architectural spirits, covering a range from tree-shaded cottage to almost princely hall. We have seen a new type of commercial structure come into being, necessitated by congested business areas and the consequent high values of land. Only yesterday it seems we returned to classic members and decoration in that "Dream City" on Chicago's lake front at the time of the Columbian *fêtes*.

Progress of
last quarter
century.

One of the pleasantest features of our architectural study is the attempt to develop by means of the characteristics observed in the buildings around us, and the pictures of modern buildings which we meet, a recognition of architectural style. Like the observations and study of foliage and tree characteristics, such study gives rich return in the ability to readily classify buildings or details at a glance. This is one of the best preparations for foreign travel either with pictures and books by the fireside, or under the actual conditions of foreign journeyings.

Recognition
of style.

Such study proceeds by more or less subtle processes of mental analysis. For instance, suppose we are given a picture of a building with the simple statement that it is a structure on American

Suggestions
for analysis

soil. Then the mental questioning commences. Is it a type of the lintel or that of the arch? Both, apparently, to judge by the picture, for straight lines, columns, and arched windows all show clearly. Taking one thing at a time, let us look at the lintels and columns. Are the columns arranged beneath a pediment as in the Parthenon? Would their removal cause the building to fall? No, they are not like the Parthenon, they could be removed. One point—in fact, almost every point—is thus settled, for the building could not consistently be an Egyptian copy and show arches; it is not a Greek copy, because constructively otherwise; it is one of the later styles from Roman to Renaissance. Its arches are not pointed, therefore it is not Gothic, nor yet Saracenic, because too large in scale and there is no dainty ornamentation in the spandrels of the arches. It must therefore be Roman, Romanesque, or Renaissance. It is probably not the first, for we have few if any Roman copies, nor is it massive enough for Romanesque, besides the many ornamental columns would seem to forbid its classification there. Ornamental columns, columns which could be removed and the building stand! That sounds like Renaissance and Renaissance the building certainly is. Try that method of procedure on many a government building erected since 1870 and see how easily it works. It is suggested, however, that the average government building be



A COLONIAL HOME IN MASSACHUSETTS.
"Dignified, roomy and genial."

not taken as an example of American Renaissance in its purity, for most of them are very far away from architectural taste and some of course are in other styles.

Such analytical study is most wisely continued by fixing in mind certain distinctly characteristic features and recognizing them in the pictures of many buildings erected in the particular period. Suppose we run rapidly over the structures of the two centuries and see what characteristics we may readily pick out.

First on the list are the homes of the early settlers, like the Fairbanks House, of Dedham, Mass., or some of the Hudson River homes, made

Homes of the
pioneers.



NEW YORK CITY HALL

"Typical of an hospitable relation which went with coaches and four."

of solid timber brought from England or good Holland bricks, the ballast of New Amsterdam craft. Excellent types of building are these structures, homes which have sheltered many a generation, but hardly to be reckoned as fine architecture.

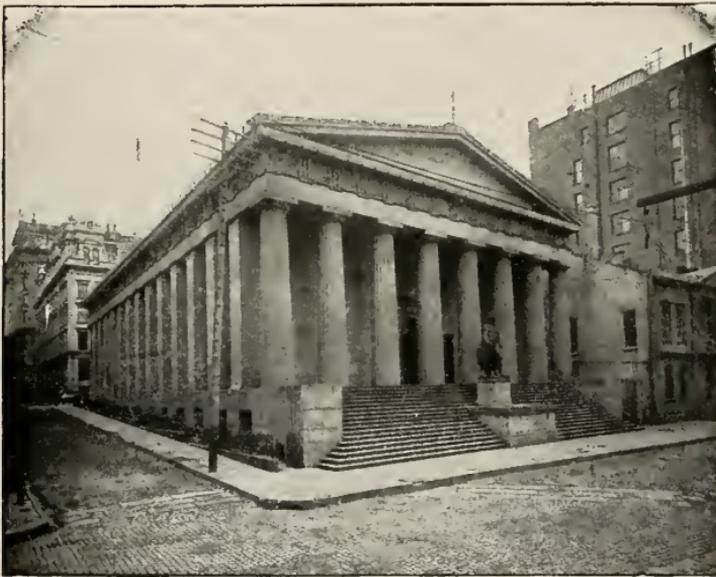
Next comes the colonial house of the pre-Revolutionary period, dignified, roomy, and genial, typical of an hospitable social relation which went with coaches and four, sedan chairs, and powdered wigs. Echoes of the last of the Renaissance in England were these colonial homes and exceed-

Colonial
structures.

NINETEENTH CENTURY ARCHITECTURE.

ingly satisfactory they were as examples of domestic architecture. They were usually marked by a plain prismatic body usually of two stories, sometimes decorated by vertical pilasters crowned with

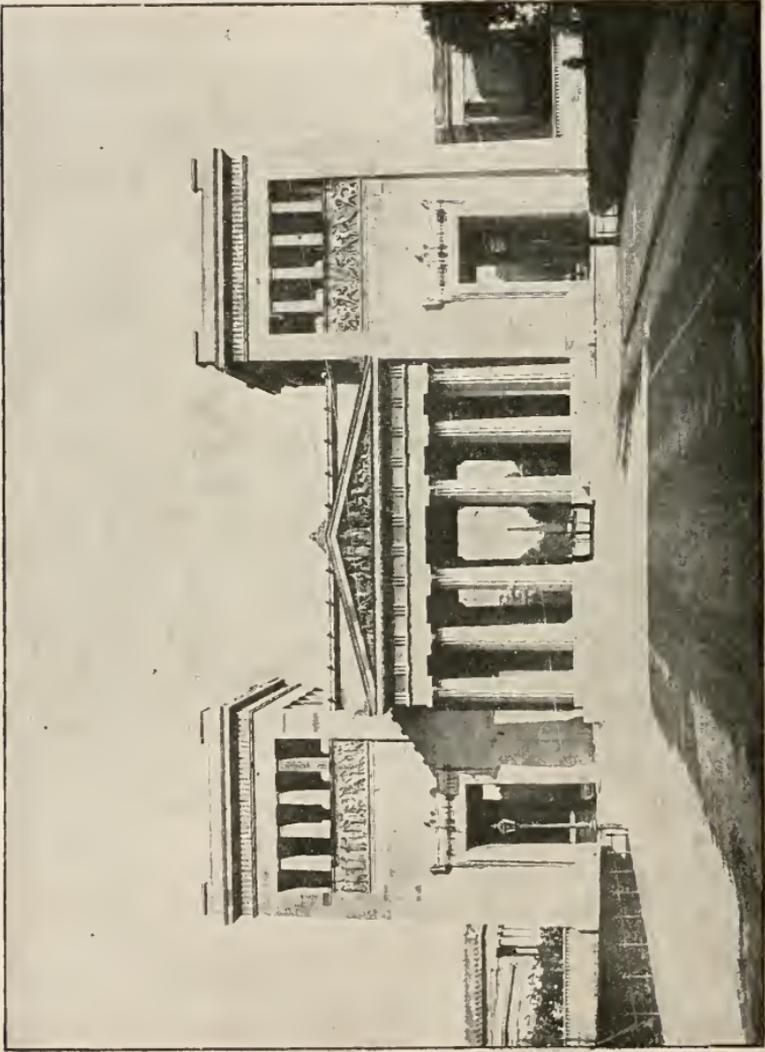
Characteristics of the Colonial home



SUB-TREASURY, NEW YORK.

“ Buildings which more closely follow the Greek manner.”

Ionic or Corinthian capitals at the corners. Above a prominent cornice rose a hip, or else a pyramidal roof, crowned with an edging of spindle work. The entrance doors were usually in the center, well-designed porches or decorated doors were much in evidence, and a general air of dignity pre-



THE PROPYLEA, MUNICH.

“Lintel types, the columns are used structurally and if removed the building would certainly fall.”

NINETEENTH CENTURY ARCHITECTURE.

vailed. The home of the poet Longfellow in Cambridge, Mass., is a fine type of such a structure, although many a modern home in the suburbs of our cities would indicate the same character, so closely have we been glad to follow this type in our more recent work.

Colonial examples.

The examples of the Greek revival in Europe, from which our American effort took its rise, followed closely upon those Roman copies with which the attempt was sought to counteract the uninteresting examples of the late Renaissance.

Greek revival.

As examples of the Roman copies might be cited the Church of the Madeleine, the Pantheon, and the Arc de Triomphe in Paris, or a building of Girard College in Philadelphia.

Roman copies.

The buildings which more closely follow the Greek manner are, for instance, the British Museum, or St. George's Hall in Liverpool, the Museums at Berlin, the Glyptothek or the Propylæa at Munich; the Sub-Treasury, New York, the Custom Houses of New York and Boston, and certain of the government buildings at Washington, as for instance the Treasury or Patent Office. Study of these examples will quickly show their characteristics. They are lintel types, the columns are used structurally, and if removed the building would certainly fall.

Greek examples.

Characteristics.

Cornices and pediments fashioned as in Greek or Roman days complete the upper portions of these structures, which usually rest upon solid basement stories or else are approached by a flight of steps.



ST. PATRICK'S CATHEDRAL, NEW YORK.
"The Gothic revival type can never be mistaken"

NINETEENTH CENTURY ARCHITECTURE.

Trinity Church, Grace Church, and St. Patrick's Cathedral in New York are interesting examples of the Gothic revival on American soil, while the Votive Church at Vienna is one of the finest modern examples of this type in Europe. Like

Gothic
revival.

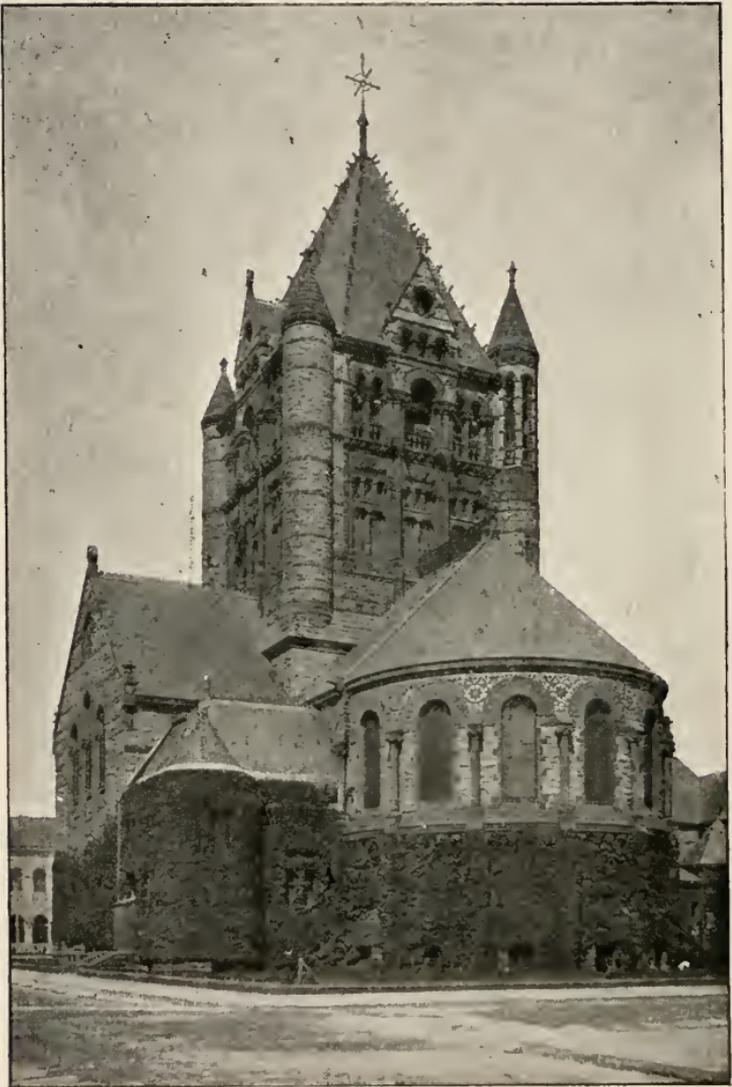
Examples.



HOUSES OF PARLIAMENT, LONDON.

the Gothic cathedrals which they suggest they have the markedly upward moving lines, the western towers or tower, well-designed façades, pointed openings, high, sharply pointed roofs, nave story higher than aisles, supporting buttresses and pinnacles. The Gothic revival type can never be mistaken by one interested in architectural study.

Characteris-
tics.



TRINITY CHURCH, BOSTON.
"Mr. Richardson's masterpiece."

NINETEENTH CENTURY ARCHITECTURE.

In the last twenty-five years among the names of men who have profoundly influenced architecture stand those of Hunt and Richardson. Both revived and applied architectural types — Mr. Richardson, the Romanesque, which he made so much his own that it might easily be termed Richardsonesque, and Mr. Hunt, the Renaissance. Trinity Church, in Boston, will always stand as Mr. Richardson's masterpiece, and truly a master was he who could simplify his design into that stately structure. Nothing shows more clearly the dawning of the great artistic awakening than the structures of these two men. They expressed the results of foreign study by broad-minded architects and were prophetic of the days of American schools of architecture. This awakening followed the Centennial Exposition at Philadelphia, and its results showed clearly at Chicago twenty-three years later.

Messrs Hunt
and Richard-
son.

What their
work typified.



CENTRAL CHURCH, BOSTON.



Examples of this type of building may be found in all our large cities. The structures shown are from New York, Chicago and Philadelphia.

SOME AMERICAN "SKY-SCRAPERS."

Commercial structures.

The American commercial structure certainly deserves a word as does the American home. The first has come about as a necessity. The need of a vast number of business offices within exceedingly narrow areas, together with the great value of land induced the builders to carry their structures in the only direction possible,—upward, until they have become veritable "sky-scrapers." Fortunately we do not live in a land of earthquakes. These buildings, entirely unique in the



WALDORF-ASTORIA HOTEL, NEW YORK

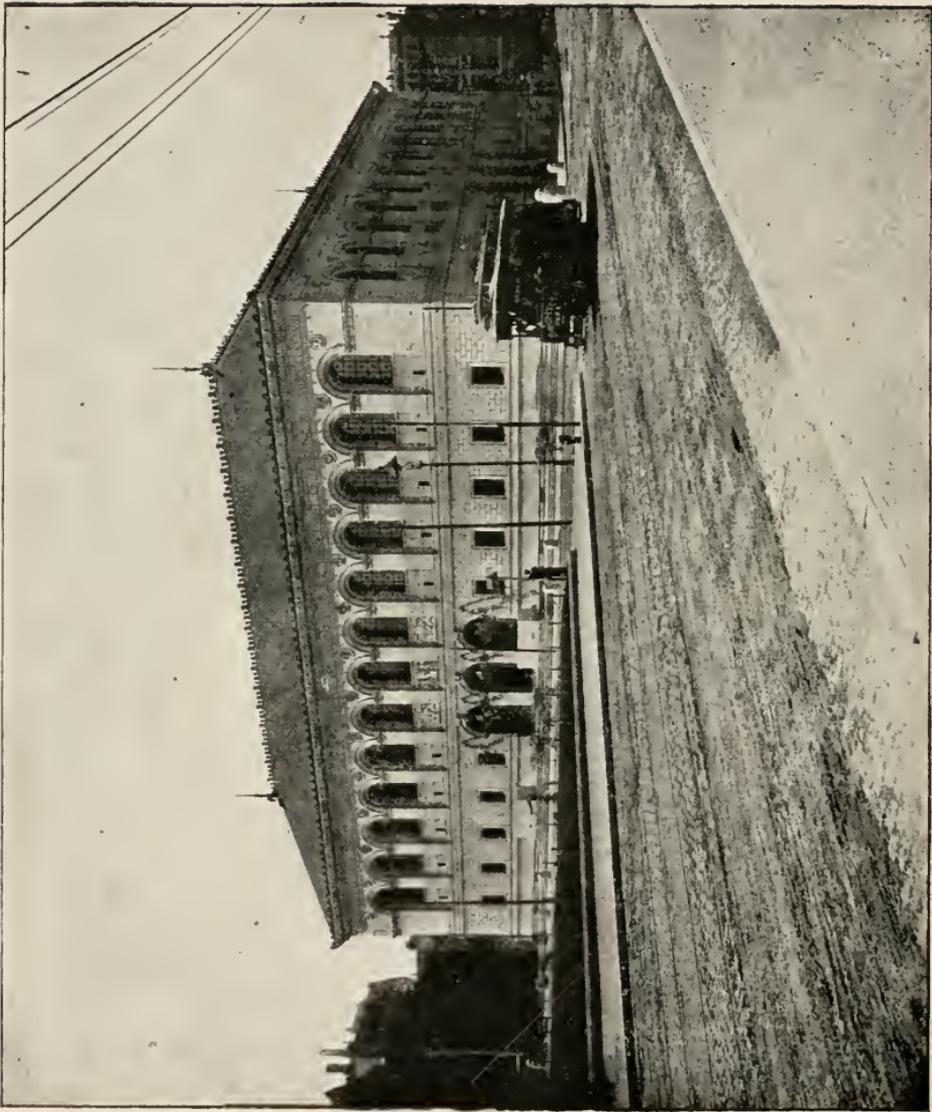
"Fortunately we do not live in a land of earthquakes."

history of the world, were made possible by a fine elevator service and a steel construction of post and girder style, inclosed by a shell wall which is not thick enough even to support its towering weight. Most of these structures claim to be fireproof, but it is questionable whether a real fireproof building really exists under the conditions of city life.

Construction of the "Skyscraper."

The American home is something just as expressive as the commercial structure. Flexible,

American homes.



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"This palace is the peoples' own."

NINETEENTH CENTURY ARCHITECTURE.

practical, unique, it tells its interior construction upon the outside so plainly that the stranger might say, there is the parlor, there the stairway in the reception hall, or there the dining room, and guess correctly nine cases out of ten.

Characteristics.

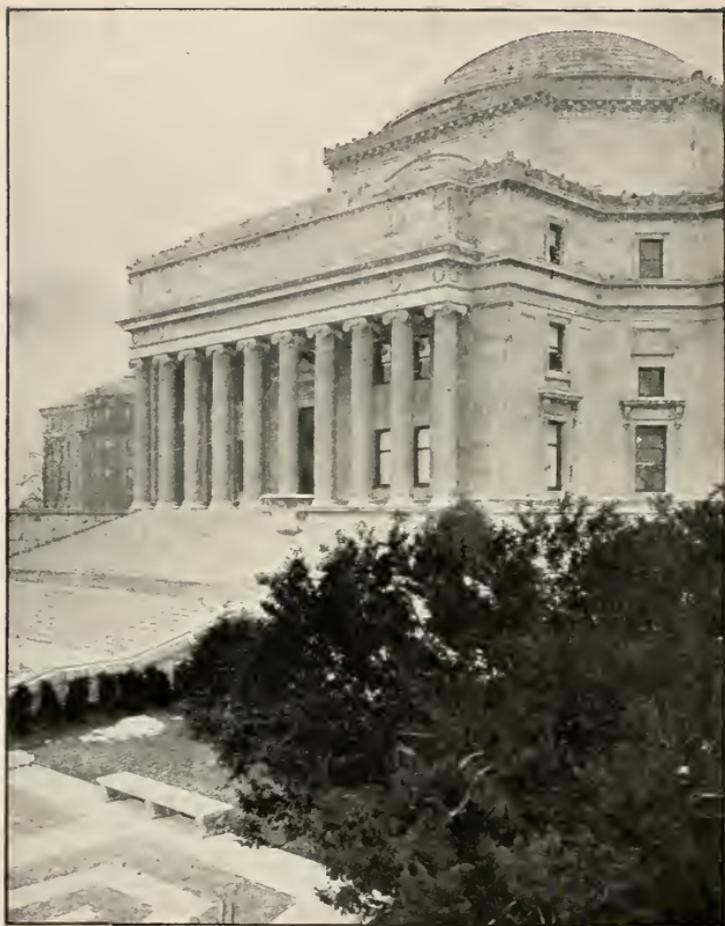


AN AMERICAN HOME.

"The Americans are a home-loving people."

Since the impetus to art development which came with the Columbian Exposition we have seen many public buildings dedicated, many of which were started before the Exposition period, but are more or less indicative of our advancing position upon the high road of architectural progress. Chief among these examples

Growth of Public Libraries.



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" Libraries so richly endowed by citizens."

of civic architecture are the Public Libraries so richly endowed by the citizens or the nation. Truly, the spirit which once crystallized in the great cathedral as the one example of civic pride now goes out joyfully in the construction of the library erected by the people.



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We have tried to picture in these chapters which now come to a close a slightly different standpoint for architectural study than those most often presented. Succession of developing styles have not interested us so much as the people who gave them being as the best expression of their daily lives. We have tried to read the monuments with the eyes of the boys and girls who are with us to-day, and who will make, utilize, and appreciate the architecture of the future. Theory and constructive details belong to older readers, the piecing together of an elementary, artistic history is the opportunity of the boys and girls.

Review of
purpose.

Thus we have recreated the ancient Egyptian by what he has told us in his monuments. From the

Results of
study.



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open book of the Parthenon has been read the story of an ideal people proud of their country and race. Rome has told us of her conquests, her imperialism, and her soldier pride; while beneath the fervor of a Christian development we have seen the Byzantine Empire flower again. With the sword of the prophet we have traveled Spain; and trowel and plumb-line in hand have been "Free-Masons" in the guild of monastic builders. In imagination we have sat in the work-yards of Gothic France and seen the cathedrals grow stone on stone as "votes for God." Florence has known our pilgrimage,

Giotto, Brunelleschi, Angelo, and the rest have been our leaders in Italy's sunny Renaissance. We have crossed the Alps at the bridle rein of Charles and Francis, and have seen the dark cities blossom with the methods of the south. Now we

NINETEENTH CENTURY ARCHITECTURE.

come to our own land with its hints of many workers, its thriving civic life and the opportunities which come to the youngest daughter of the world.

Suppose it were a land of the past which lay before us instead of that of our daily lives. Suppose our present civilization lay in ruins as that of Egypt, Greece, and Pompeii, what would the two centuries of progress tell to those who explored the architectural world?

Could they say this of us? The Americans were a home-loving, Christian people, energetic in commercial affairs, generous in philanthropy, wide travelers, extensive readers, and a people growing in the love and development of a national art.

Characteristics of the American nation as read in our Architecture.

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