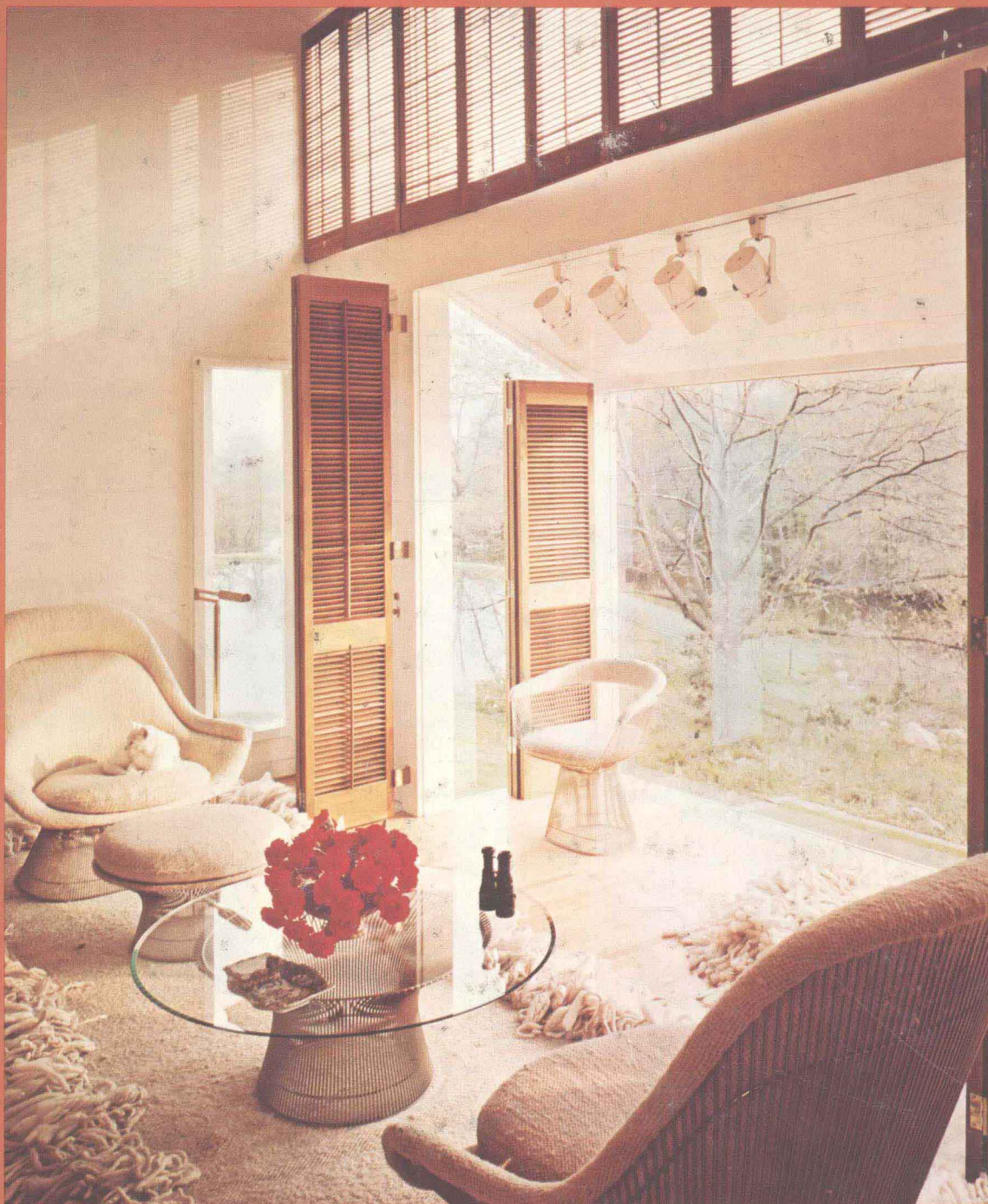


# Interior Design and Decoration

Fourth Edition



# *and Decoration*

*Sherrill Whiton*

J. B. Lippincott Company

NEW YORK HAGERSTOWN PHILADELPHIA SAN FRANCISCO

## **INTERIOR DESIGN AND DECORATION, Fourth Edition**

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EDITOR'S NOTE: *The following preface was prepared by Sherrill Whiton, Jr., a short time before his death cut short his participation in the work on this edition.*

# Preface

The fourth edition of *Elements of Interior Design and Decoration* represents a more extensive revision than any since the original publication in 1937. The acceleration of change in world events and in the arts has made it essential to adopt a more radical approach to the material in the text.

The value of studying the arts is not limited to the stimulation of creativity or the development of the imagination. The cultural awareness that is acquired in the process is also a significant benefit. The roots of the arts entwine themselves around nearly all branches of human thought and activity, and an understanding of them will aid greatly in the development of one's ability to analyze and judge human affairs. Even if no professional career is anticipated, an acquaintance with these subjects will enhance the enjoyment of life and open vistas which have previously been obscured.

Period decoration as a profession has existed for 20,000 years, since early artists painted the murals in the caves at Altamira and Lascaux. The Pre-Renaissance and Renaissance artists Giotto, Masaccio, and many others decorated chapels throughout Italy many years after these structures were built. And what marvelous work they did! The Sistine chapel is not especially noted for the beauty of its architecture but for the decorations by Perugino, Ghirlandaio, Botticelli, and the overwhelming achievement of Michelangelo's ceiling.

The role of the decorator is one of an artist striving for beauty. But time does not stand still. Today the interior designer may often be a partner of the architect and must have a fund of architectural knowledge upon which he can readily rely. New art concepts have developed through inevitable changes in our environmental patterns. New materials and the distribution of space for modern living are two of the factors which are here reconsidered and analyzed. These changes have brought about a growing integration between the work of the various types of designers who contribute toward our total ecology. Furthermore, as the architect becomes more and more involved with industrial building and town planning, the interior designer should look ahead to the day when he will qualify for the role of residential architect.

We have therefore divided the book broadly into two parts. Part one is a description of the dominant influences and characteristics of historical interiors, furniture, ornamental design, and architecture. Since the decorative arts were in the past a branch of architecture, and architectural styles have been fundamentally an outgrowth of changes in structure, it is essential to trace briefly what these changes have been. The serious student should be aware of the elements of period design because they are an essential background to the contemporary scene. This section of the book remains largely unchanged from previous editions.



The remainder of the text has been updated, reorganized, and focuses primarily on the interior design and architecture of our times and their close relationship. Chapter 22, *Socio-Psychological Aspects of Design*, is entirely new. The decisions people make in selecting their interior and exterior environments are too often taken for granted. Why people like or become disenchanted by the surroundings in which they live and grow has complex psychological implications. Chapters 10 and 11 were first included in the third edition, but they have been revised and brought up to date.

Ideas about color have changed in the past decade to the extent that we are more willing than we once were to accept brighter, stronger colors and striking contrasts. Traditional interiors often presented curved lines and paneling, and colors were generally muted. Because of a stronger linear feeling in contemporary interiors, bolder colors are usually required to achieve a desired impact. A new chapter on this subject was therefore essential.

The chapter on Furniture Arrangement has been combined with the chapter on Space Planning since both relate to the allocation and distribution of areas which function for specific purposes. This chapter also attempts to explain the most recent changes and newest concepts in the use of space.

A bibliography of textual and illustrative material has been added to each chapter for those who desire to do further reading in particular areas.

The book may be considered a compendium of information that has been gleaned from many authorities over a long period of time. In the preparation of the original text the editor would like to acknowledge the generous contributions of Marcel Breuer, William Breger, Inez Croom, Curt Hasenclever, Richard Neutra, Jens Risom, Edward Wormley, and Frank Lloyd Wright.

This edition has been made possible by the contributions of several co-authors and the assistance of others whose professional skills and knowledge are evident throughout the book. The editor is especially grateful to Gilbert Werlé and Arthur Satz for their continuous help and advice. He is grateful also to the authors of chapters new to this edition, all authorities in their specialties: to Sheila Chapline and Olga San Giuliano Menaker for the chapter on Color, James L. Nuckolls for the chapter on Lighting, John Winters for the chapter on Window Treatments, Susan and Stanley Salzman and Marjorie Helsel for the chapter on Space Planning and Furniture Arrangement, and Ann Ferebee for the final chapter on *Socio-Psychological Aspects of Design*.

Chapters 1 through 7 and 9 were revised by Alvin Ross; Stanley and Susan Salzman assisted with the revision of chapters 10 and 11; Louis Tregre contributed to chapters 12 and 16; John La Marre revised chapters 8, 19 and 20; and Jeanne Weeks and Curt Hasenclever brought chapter 17 up to date. Jeanne Weeks, together with Berkley Urie, also contributed to chapter 15.

The authors have made every effort to represent the most significant points of view commensurate with the overall objectives of the text. If there are errors or omissions, these were not intentional, but rather reflect the imperfections inherent in most large endeavors.

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PART ONE

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*Period Decoration and Furniture*



Photo Researchers

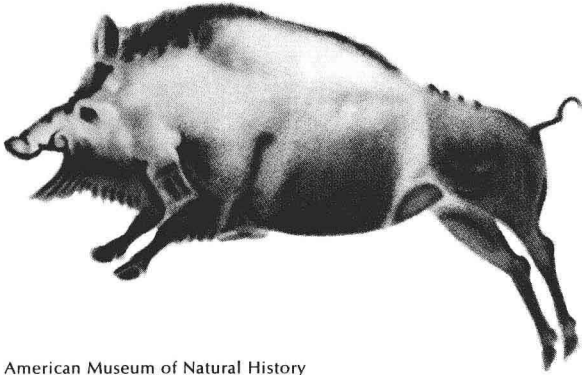
*A view of the Sphinx and Pyramid of Menkure at Gizeh near Cairo, Egypt.*

## CHAPTER 1

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# *The Styles of Antiquity*





American Museum of Natural History

*Prehistoric painting of a wild boar, found on the walls of the cave of Altamira, Spain. The action and anatomy of the animal were well understood by the artist and realistically portrayed.*

## PREHISTORIC ART

Anthropologists have discovered remains of fossil man that are hypothetically stated to be 1,000,000 years old. Other fossils are supposed to have lived 500,000 and 100,000 years ago. These relics have been found in Java, China, Africa, and other locations. Practically nothing is known of the living conditions or developments of these early creatures. It is perhaps not even entirely wise to associate them with the human race. There is only one point of importance to the art student in mentioning them. In fossils belonging to late eras, there is a larger cranial capacity. One may conclude that as the brain enlarged, intelligence gradually increased, and during each millennium descendants learned from their predecessors. Although this theory is not supported by all scientists, it would appear that the aggregate of all knowledge and experience at any one time benefited future generations.

The term *civilization* implies an organized state of existence. However primitive its character, there must be a sense of reciprocity, justice, and consideration of others in the same group or tribe. Some form of production of ob-

jects and materials useful to man's existence is also assumed. There is a long gap between the early prehuman life and the beginnings of civilized man, but there must have been a gradual progress in intelligence. There are abundant records of prehistoric human existence in Europe that date from approximately 25,000 B.C., and there have been other discoveries indicating sequences of development of men who have lived at later periods but long before history commences.

Cro-Magnon man, the first civilized ancestor of the modern European, is supposed to have made his entrance into Europe from Asia or Africa about 25 millenniums ago. The infiltration was slow and probably extended over thousands of years. He was over six feet tall and physically strong. He set up elaborate house-keeping in caves and decorated the walls of his home with sculpture and painting. He had heat, light, and clothing, developed efficient tools and was an expert technician in cutting and decorating stone and ivory. He had superstitions and some form of religion. The birth of religion probably is closely interwoven with the origins of art. He buried his ancestors with the greatest of care, surrounding their bodies with personal belongings, indicating a belief in the existence of



Natural History  
Museum, Vienna

*The Venus of Willendorf found in Austria in 1909 dating from 30,000 B.C.*

the soul after death. He invented eating utensils such as spoons, knives, and two-pronged forks, which he made from bone and wood. He lived on the wild vegetation of his locality and hunted the bison, horse, stag, boar, reindeer, mammoth, and other animals that roamed the plains of Europe. He may have been a cannibal. There is no evidence that he domesticated any animals, nor did he cultivate the land. He knew nothing about the making of pottery or the value of metals, but he modeled both the human figure and animals in stone, ivory, and clay. Evidences of feminine glamour and appeal have been proved by the discovery of shell necklaces and of cosmetics. Trade was carried on by using beads, amulets, pendants, and ivory buttons as a medium of exchange. The existence of needles would indicate that he knew how to sew, and possibly embroider and weave.

The earliest discovered evidences of artistic effort date from about 25,000 to 10,000 B.C. and show a highly developed achievement.

The Cro-Magnon people, whose records are found mainly in France and Spain, were neither childlike nor savage in their art conceptions. They boldly and accurately depicted in line drawings and paint, on the walls and ceilings of their caves and on their tools and other *artifacts*, human, animal, and plant forms, the drawing of which must have demanded a high mental concentration and much preliminary training. The different classifications of animals are realistically drawn, with thorough understanding of their anatomy and action. The earliest drawings show profiles only, but simple perspective and foreshortening were attempted later, and there is some evidence of a conception of composition in grouping. Undecipherable motifs have also been found which may have been the earliest attempts of hieroglyphic inscriptions.

The purpose of these drawings is not yet fully understood. Undoubtedly they had decorative value, but they may also have had religious significance or been intended to bring good luck

in hunting. A symbolism would seem proved in an analysis of the clay sculpture of the human form, most of which was limited to the representation of the female. Conventionalization rather than realism was here indicated. The head, hands, and feet were either omitted or only slightly indicated, while the parts related to reproduction were greatly enlarged, possibly as a divine appeal for progeny.

Art as indicated by these discoveries is then millenniums older than history and may be stated to have commenced as man evolved from the animal to the human state. Creative expression in art can therefore be claimed to be instinctive. The origin of the art of interior design can be dated from the dawn of human civilization and is an integrated part of human needs. While the discoveries of the early civilizations have to date been found mainly in Europe, it is probable that man also existed and developed at the same time in Asia, Africa, and, possibly, America. History does not begin until a record of events was kept by man in some sort of written form. The earliest readable inscriptions probably do not predate the thirty-seventh century B.C.

## THE HISTORIC PERIODS

**Mesopotamia and Palestine.** Just as there are long mysterious lapses in the records of prehistoric civilizations, so the steps that lead from them to historical periods are unknown. The dawn of history about 4000 B.C. finds a highly developed culture in many parts of the Near East, particularly in Iraq on the borders of the Tigris and Euphrates and on the shore of the Persian Gulf, usually considered the locality from which all Western civilization has sprung. It is self-evident that there must have been an evolutionary development. The enormous advances in the cultures of these early historical groups over the prehistoric types could not have been spontaneous.

It was these Near Eastern civilizations that



Scala

*Prehistoric painting of animals in action in the caves at Lascaux, France.*

have given us some of the earliest needs of orderly existence. They developed agriculture; the domestication of animals; the principles of trade and coinage; legal government; principles of justice; the potter's wheel; the wagon wheel; the alphabet; the arts of architecture, decoration, sculpture, music, literature, and dancing; the sciences of mathematics and astronomy; and the philosophical standards of monotheism and monogamy.

Authorities differ as to the primogeniture of early civilizations, but it is not a matter of great importance. Perhaps future discoveries of the archaeologist will clarify many points. All the countries of the East were constantly trading

with each other, so that in the exchange of ideas, contemporary civilizations often had similar features. Various authorities claim the Caucasus, Mesopotamia, Persia, and Egypt as the birthplace of Western thought, but a civilization known as Sumerian existed along the deltas of the Euphrates River in Mesopotamia at a very early date—perhaps 6000 B.C. From where the Sumerians came and the causes of their disintegration and diffusion are not known, but their records inscribed in *cuneiform* characters on clay are extensive and have been transcribed. They have left us tales of the creation and those of a deluge that correspond closely to Old Testament descriptions. They have related the class struggles,

the inequality of men, the wealth and luxury enjoyed by the strong and intelligent, and the subservience and labor required of the masses and their interminable demand for betterment that invariably ended in economic paralysis. Thus, from the very beginnings of our culture, was established the basic theme of political history.

Although none of the Sumerian buildings has endured, there are descriptions of palaces treated with colored tiles and enriched with semiprecious stones, with interiors treated in exotic woods and inlaid with alabaster, onyx, lapis lazuli, agate, and gold, and decorated with the statues of gods, heroes, and animals. Architecture, beauty, and luxury commence with explosive violence and our complete ignorance of their immediate origins.

The Sumerian civilization was superseded by those of Babylonia and Chaldea that date from as early as 4000 B.C. The buildings of these nations were constructed in sun-dried brick, but later surfaced with delicately carved translucent alabaster and bas-reliefs; interiors often were hung with magnificent fabrics. Arches were first used in these countries to span openings for important entrance gates, probably because the lack of large stones precluded the use of the beam and the column.

The great palace of Nebuchadnezzar with its "hanging gardens" was in New Babylon, and it was from here he marched with his hosts to Jerusalem about 585 B.C. to destroy the temple of Solomon. There is nothing left of old Babylon, the site of the famous Tower of Babel. Its name has become synonymous with splendor, vice, and luxury, and the city passed to its downfall as described in the Bible. Its ruins became a quarry for the construction of Bagdad. Only mounds now indicate its site. The Babylonians were an agricultural, material-minded people who built rambling palaces in sun-dried brick constructed on arch and vault principles. The many rooms of the buildings were brightened with colorful glazed tiles in designs show-

ing the *tree of life*, lotus, rosette, palmette, winged bulls, genii, and animal motifs. Low-reliefs in color depicted hunting activities and court scenes.

The Assyrians from the north of Mesopotamia dominated the valley from about 700 B.C. The ruins of the Palace of Sargon in Khorsabad near Nineveh give some conception of the magnificence associated with their buildings in which are found some of the early decorative and structural uses of the arch form. The entrance portals were flanked by great towers and with man-headed winged bulls carved in stone, which in turn supported a semicircular arch covered with brilliantly colored tile.\* The rooms were lined with alabaster sculptured *dadoes*. Domed forms are shown as motifs in some of the relief decorations, although no actual structures of this type have remained.

The Assyrians were the great military power of the Near East; they were fighters and huntsmen, and their incised wall sculptures portray their vigor if not cruelty. They were great builders, engineers, scientists, musicians, poets, and astronomers. Their wall tablets show the use of chairs, couches, and tables.

While these great nations of the Mesopotamian plains were maintaining a civilization for three thousand years, farther west along the banks of the Mediterranean Sea, the Hebrews

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\* The earliest arches were the "stepped" form, appearing like inverted stone stairways. The origin of the true arch form built with wedge-shaped stones or bricks is clouded. It is probable that the Babylonians used the principle in the construction of drains as early as 3000 B.C. In the Assyrian Palace of Sargon at Khorsabad, the entrance consisted of arched gateways. The Etruscans of northern Italy used the arch for drains, tombs, and gateways about 500 B.C., and the Romans developed the arch and dome, as they are used today, after the Etruscan invasions. This form became the most important structural and decorative feature of Roman architectural design. In such buildings as the Colosseum it saved an immense amount of labor and material in supporting the rows of seats.

were building in an architectural style borrowed from Babylon, Egypt, and Phoenicia. Little is left of their structures, long since obliterated by Romans, Christians, Moslems, and Crusaders.

The Bible gives a description of the great temple of Solomon, built in Jerusalem about 1012 B.C. The author of the Book of Kings seems to have been impressed by the ostentation and great expense involved rather than by any practical or aesthetic values. He describes the dimensions of the building, which was not large, although it was surrounded by enormous colonnaded courtyards. The roof beams rested on projecting wall brackets; the windows were narrow. The stone used for the walls was cut at the quarry so that no hammer or axe or any tool of iron would be heard at the place of construction. The temple was apparently three stories high, the floors connected by stairways. The entire interior was lined with cedar. The doors were made of olive wood carved with ornament. The interior walls were decorated with carved cherubim, palm tree motifs, and open flowers. The floor was made of fir. Walls, doors, trim, and floor were overlaid with gold. Cedar, olive, and fir must have been rare woods in Palestine at the time of Solomon.

**Egypt.** The art of ancient Egypt was her most momentous contribution to world culture. Here at the very beginning of history is found a quite vigorous and matured civilization that had developed from prehistoric eras, the details of which are hidden in the mists of antiquity. Here were constructed colossal engineering works and majestic buildings, designed according to the most ingenious and honest aesthetic standards. Few other peoples, ancient or modern, have conceived of structures on such a vast scale, so grandiose and yet so sublime.\* Egypt developed

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\* Herodotus the Greek historian, who visited Egypt in the fifth century B.C., stated "that there is no country that possesses so many wonders, nor any that has such a number of works that defy description."



Metropolitan Museum of Art

*Statue of Harmhab, 1355 B.C.*

a native art independent of preceding foreign cultures that satisfied and uniquely reflected the character of its own people. It was one of the greatest, most powerful, and yet most refined cultures in history.

The land of Egypt is a gift of the Nile. It consists geographically of a stretch of territory approximately thirty miles wide and eight hundred miles long, entirely dependent upon the river for its vegetation and subsistence. Bordered



by deserts and the sea, its inaccessibility served as a protection against invading hordes and gave the Egyptian people an unusual opportunity for a continuous and unadulterated racial and cultural development. This isolation, however, contributed to a constant repetition of art forms during the whole period of Egyptian history, and this unchanging character is one of the most pronounced features of Egyptian art.\* The Egyptians devoted themselves more than any other people in the world to the preservation of the memory of past actions. Changes in thought, custom, habit, and art were extraordinarily slow in spite of occasional invasions and social upheavals. Egyptian art followed rises and declines. New ideas were introduced, but the basic forms were constantly revived, and, in comparison to styles of other nations, their style is considered immutable.

The climate of the valley of the Nile was peculiarly delightful, the sky serene, and the atmosphere gently tempered, almost without rain; thus nature contributed to the preservation of its monuments. Social conditions permitted the development of a wealthy and highly cultured ruling class and a middle class, both of which were supported by vast numbers of slaves, who were either native-born or the captured inhabitants of conquered nations. Wealth was concentrated in the hands of the few, and labor was excessively cheap; even the artists and craftsmen were often of the slave classes.

Nature had endowed the land with large quantities of hard and durable building stones such as *granite*, *basalt*, and *diorite*. Limestone, a much softer and more easily cut material, was

also available for use in protected places. A limited lumber supply necessitated the use of the palm tree and the papyrus reed where wood was needed for structural purposes. The acacia and sycamore fig tree were also used to some extent, and heavy lumber was occasionally imported from Syria. The leaves and branches of these trees and the wild flowers from the banks of the Nile became the principal inspiration for ornamental design.

Religion played an important part in the life of every inhabitant. The Egyptian believed that life on earth was but temporary and that one's duty, while here, was to prepare for an eternal existence in the hereafter.<sup>†</sup> It was, therefore, the habit of the upper classes to build resting places or tombs for their bodies after death. This explains the existence of the many pyramids and *mastaba* tombs which were constructed with the idea that they would exist for eternity. The future life was believed to be spiritual in its character, but material objects were needed to sustain the body of the spirit. When an Egyptian of rank was buried, his mummified body was surrounded with household goods, clothing, food, and mummified animals. The discoveries of many of these tombs, such as that of Tut-ankh-Amen in 1922, has given a very complete knowledge of the daily life of the royal families.

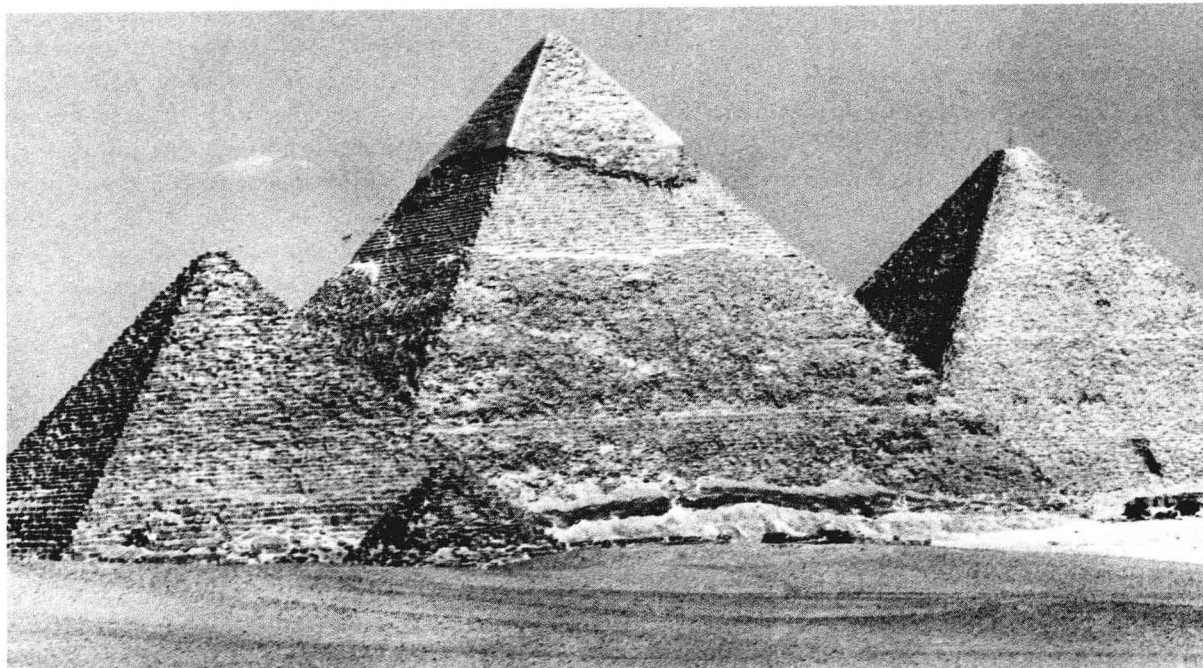
The culture of Egypt was so firmly established that, in the few foreign invasions that occurred during a long history, the culture of the conquerors was always completely submerged. Even Alexander in the fourth century B.C. was politically and socially snubbed by the Egyptians, and was forced to found his own city. Alexandria later became one of the greatest of commercial ports, a center of learning, and a luxurious playground for all Mediterranean peo-

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\* The Egyptians were the superconservatives of history. With long intervals of peace, and wars principally conducted in foreign lands, their power and success developed a feeling of both security and superiority, which, though contributing greatly to their arts, eventually acted as an opiate to their national consciousness and military vigor.

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<sup>†</sup> The Egyptians were the first to claim that the soul was immortal. According to Herodotus, they believed that after a transmigration of three thousand years, it would return to the human body.



Magnum

*The Great Pyramids of Gizeh: Menkure, Khafre, and Khufu.*

ple, but, in spite of the Greek culture which it represented, the Egyptians refused to accept the foreign influences, and elsewhere continued the philosophy and customs of their ancestors. The palaces at Edfu and Philae, partly built during the Alexandrian Era, retained the style of the Pharaohs in their design.

The Egyptians were mighty navigators and sent their ships to all the ports of the Mediterranean Sea. The early tribes of Greece, the inhabitants of the islands of the Aegean Sea, even the primitive occupants of the Spanish and Italian peninsulas, all felt the influence of the Egyptian traders, and Egyptian motifs and trends are to be seen in their early arts.

THE MAIN DIVISIONS OF EGYPTIAN HISTORY. The history of Egypt is derived from the Bible, from Greek and Roman authors, and from a history written in Greek about the year 300 B.C. by Manetho, an Egyptian priest. Leading authorities differ greatly upon many of the early dates,

but the generally accepted divisions are as follows:

1. ANCIENT KINGDOM, Dynasties I-VIII (4500–2445 B.C.)

During this period the capital was at Memphis, and the great pyramids of Gizeh were built.

2. MIDDLE KINGDOM, Dynasties IX-XVII (2445–1580 B.C.)

During this period the capital was at Thebes, and in the latter portion of this period Egyptian art history was interrupted by the invasions of the Shepherd Kings, known as the "Hyksos."

3. NEW EMPIRE, Dynasties XVIII-XXV (1580–633 B.C.)

During this period the capital was again at Thebes, and many of the great temples, such as those at Luxor and Karnak, were erected. This was the most prolific period of Egyptian history, known politically as "The Age of

Conquest." The reigns of Thotmes I, Hatshepsu, Rameses I, Rameses II, Nefertiti, Tut-ankh-a-men, and others.

4. SAITIC AND PERSIAN PERIODS, Dynasties XXVI-XXXI (663-332 B.C.)

Period of decline in art, with constant foreign invasion, barren of important monuments.

5. GRECO-ROMAN PERIOD (332 B.C.-A.D. 640)

a. Alexander the Great and the Ptolemaic period (332-30 B.C.). Construction of the palaces at Edfu and Philae.

b. Roman period (30 B.C.-A.D. 395). The age of Caesar, Antony and Cleopatra, and Constantine.

c. Byzantine or Coptic period (395-640 A.D.). Christianized Egypt.

d. Arab domination. Egypt becomes Moham-medan.

THE PYRAMIDS. The oldest and mightiest extant examples of architecture are the pyramids of Gizeh near Cairo. These were built about 3700 B.C.,\* and were the production of experienced designers and engineers. The purpose of the buildings was religious rather than architectural. They were the tombs of the kings of the early dynasties, and their form was probably inspired by prehistoric burial mounds. The engineering methods employed in their construction are still the subject of speculation. Much of the granite of which they are built was quarried 700 miles away. It is difficult to conceive of the labor or the toll in human lives required for their erection.

\* Some Egyptologists claim that the pyramids do not predate 2700 B.C.

*Model of the hypostyle hall in the temple at Karnak, Upper Nile, showing the interior columns supporting the lintels that in turn support the roof. Notice the conventionalized papyrus capital.*

Metropolitan Museum of Art



## CHARACTER OF THE EGYPTIAN BUILDINGS.

The extant buildings of ancient Egypt consist of colossal palaces, temples, and tombs. The first builders of the historic period unquestionably inspired themselves from two prehistoric types of structure, one of which was the wall built of clay or sun-dried brick. These were soft materials that necessitated making the lower portion of a wall thicker than the upper portion, resulting in slanting sides. The other type was an enclosure built of a row of vertical tree trunks that supported wooden beams, which, in turn, were covered with branches and clay.

With the invention of stonecutting tools, the slanting form of the brick walls was imitated in granite. This is a typical example of the perpetuation of tradition in Egyptian design. With the use of granite, the strongest of stones, the walls could have been carried to great heights at the same thickness. Stone pillars or columns were substituted for tree trunks. These stone supports were either round or polygonal, very sturdy in appearance, and were carved to imitate a cluster of papyrus reeds or palm tree trunks that in wooden construction had been tied together for greater strength. This treatment produced an effect of vertical convex ribs, which was the prototype of the flutings or grooves cut in later columns. The branches at the top of the tree were also frequently conventionalized in the stone column, and formed an ornamental feature, bell-shaped in appearance and known as a campaniform capital. Other capitals were inspired from palm branches, from single or clustered lotus buds, and from the curling leaves of the papyrus. Granite was used for the exterior walls of buildings. Because of the primitive nature of the tools that were available, simple forms and few moldings were used in Egyptian architecture and decoration. The tops of walls were usually crowned with a hollow roll molding, concave in shape, sometimes known as a bird's beak or *cavetto*. Limestone, a much softer material, was often used to line the

interior walls, as it was easier to cut into ornamental patterns.

Rectangular forms and straight lines dominated Egyptian architecture. Massiveness, solidity, and the effect of perpetuity were the principal characteristics expressed. Walls were excessively thick, and supports were proportionately heavy and sturdy. The Egyptians had little knowledge of the principles of arch construction, so that vaulted ceilings and arched doors or window openings were not used. The columns were spanned by heavy stone beams or lintels that were of enormous size and of great weight, and, due to the material, the length of the span was extremely limited, and frequent supports were necessary. Lines of lintels were set close together so that stone roof slabs could be in turn placed upon them. In wide rooms, numerous columns had to be placed in the interior to support the short stone beams. These interior columns were arranged in long rows and richly decorated with carving and color. Many of the rooms appeared to be a forest of columns, as the desire for permanence precluded the use of wooden beams which would have spanned greater distances. This system of column and lintel is known as *trabeated construction* and is the most characteristic feature of Egyptian design. Many of the temples and palaces were of vast size. In spite of the fact that they were considered as temporary abodes, great wealth was lavished upon them, and they were decorated with luxury and splendor. Over the entrance door was carved a welcoming sentence. Courtyards were treated with colorful decorations, and awnings screened the noonday sun.

## CHARACTER OF EGYPTIAN WALL DECORATION AND ORNAMENT.

The exterior walls were often treated with brilliant color applied to incised wall carvings. These decorations were made by first drawing outline sketches on the wall with charcoal. A groove was then chiseled around the outline of each motif. The figure or pattern was slightly modeled, but did not project beyond the