

THE USE OF METAL IN FURNITURE DESIGN

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SUE SANDERS LOEW, B.S.

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PREFACE.

The writer wishes to express her sincere appreciation to Miss Thetis Lemmon, thesis director, and to Miss Mary Marshall, the Director of the Fine Arts Department, for their constructive and helpful criticism during the writing of this thesis.

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CHAPTER I

INTRODUCTION

In this study an attempt has been made to present the use of metal in furniture design. The ornamental and structural designs, as found in the furniture from the countries of ancient times, to the completely functional forms of modern Europe and America, have been considered.

Until the early twentieth century metal was used for ornamentation on some types of furniture strictly utilitarian in character. The modern trend in the use of metal for furniture design is towards simplicity in order to accentuate its special adaptation for utility and function. Both the period using ornamentation and the modern period incorporate their own ideas of suitability, dignity, decoration, and comfort.

Metal has always been used in furniture design. Molded and cast bronze and iron were utilized for the entire piece of furniture by the ancients. The metal surfaces were often further ornamented by chased lines or by repoussé. Gold and silver ornamentation has also long been associated with the past.

Gothic furniture had beautiful iron fittings. Originally they were intended to strengthen the heavy board construction of chests and cupboards but these fittings early became decorative features. In this same period, straps, corners, hinges, locks, hasps, and keys were made of hammered metal.

The use of iron was continued in the 16th and 17th centuries in Spain and Italy because of its weight, its structural strength and for the way it lent itself to decoration. In France, during this period, brass and bronze replaced iron. Delicately wrought and chased keys, escutcheons, handles and pulls were employed both ornamentally and structurally. Metal marquetry and inlay were common. In France and England exquisite wrought silver was used. Decorative mounts of ormolu formed a distinctive style in the France of this period.

In the 18th and 19th centuries, brass galleries were applied to tables, commodes and bookcases; delicate brass and gilt moldings framed drawers. Iron, brass, and bronze were used for metal mountings.

In furniture design since the last World War, steel has been more extensively used than other metals. Aluminum, bronze, brass, copper, pewter, stainless steel, cast iron, monel metal, nickel, and other metals have all been used for decorative or structural purposes.

The metal work shows the style of the piece of furniture with which it is intended to be used and expresses the characteristics of the period.

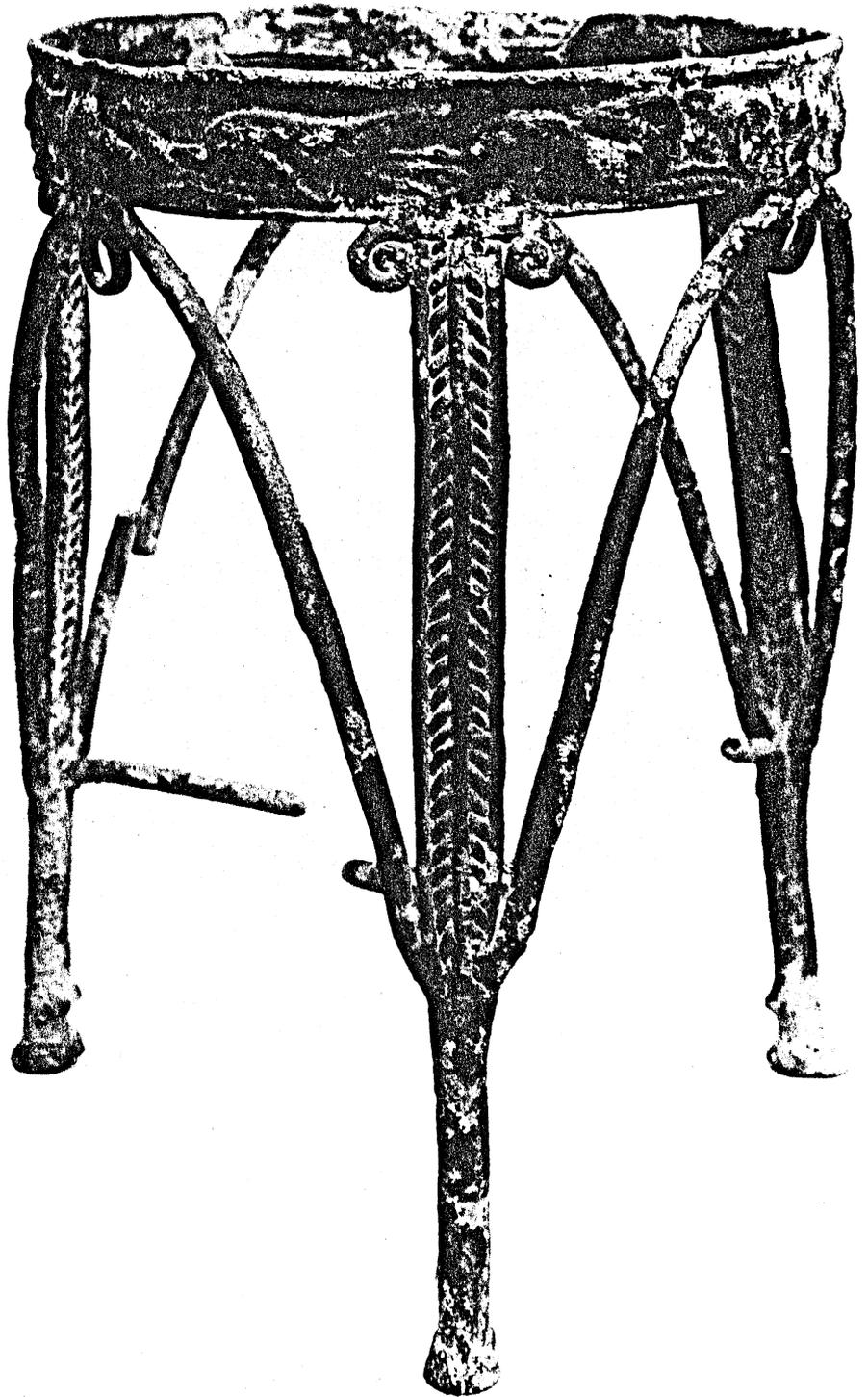
No effort to cover each period of furniture in an exhaustive manner has been made, but there has been an attempt to describe the styles from the point of view of design and craftsmanship of metal.

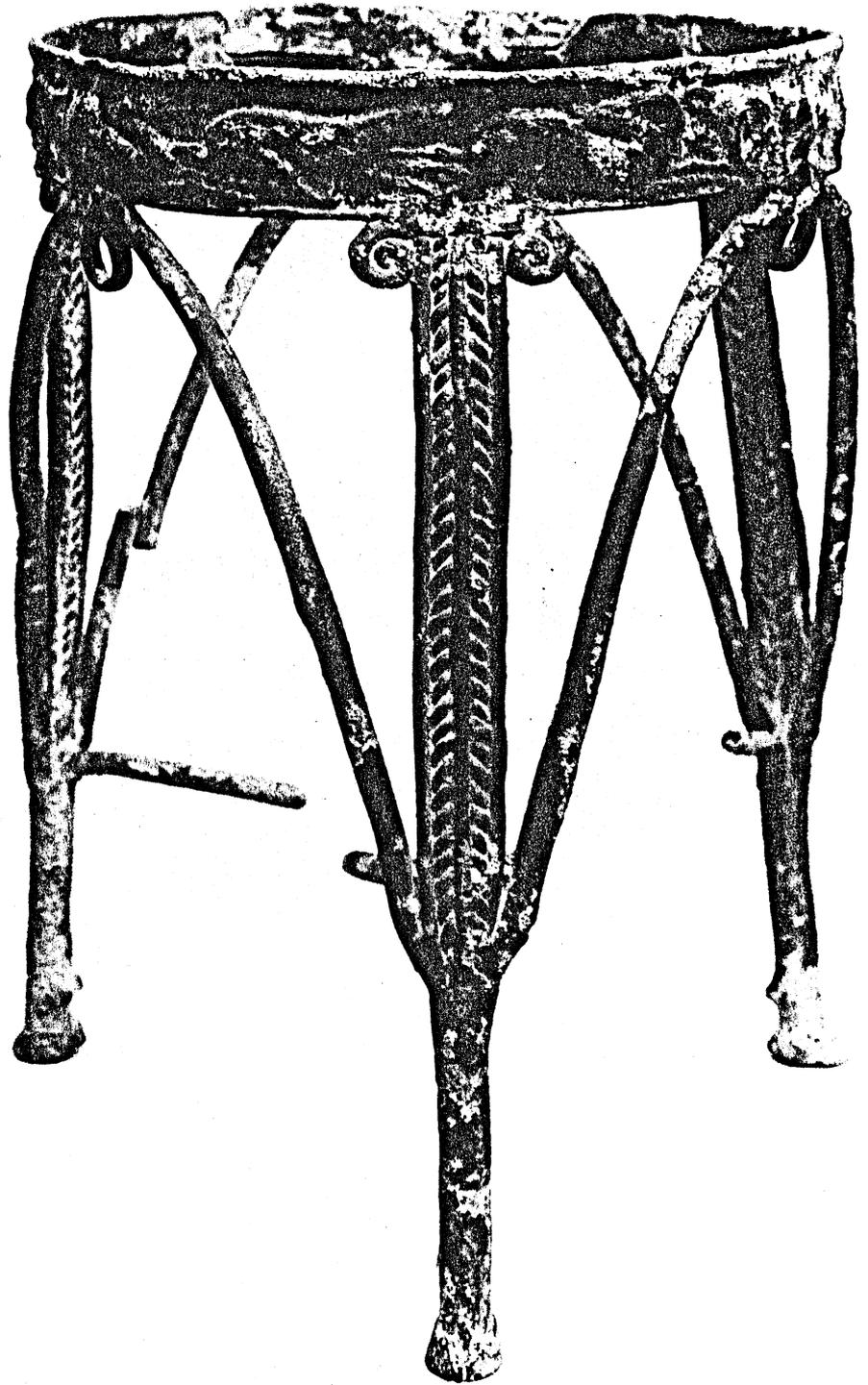
PLATE I.

Bronze Tripod Stand.

Greek-Mycean Age.

The Metropolitan Museum of Art, New York.





CHAPTER II

PERIODS OF ANTIQUITY

Because the climate and land of the Egyptians was dry and because the people buried models or actual pieces of furniture with the dead, this civilization preserved more records and specimens of furniture than some civilizations which came many centuries later. Compared with Egyptian, all other ancient furniture is modern. Preserved in the tombs, it survived to tell that centuries before Helen of Troy had eloped with Paris, and that more than a millennium before Alexander the Great had conquered the world, and that three millennia before the Florentine Renaissance, Egypt had already been creating furniture forms.¹

The ancients left remains of much furniture in cast bronze and wrought iron. The greater durability rather than preference, also the scarcity of timber, may have accounted for the excess of metal over wood.² Among

¹George Leland Hunter, Decorative Furniture (Grand Rapids: The Good Furniture Magazine Press, 1923), p. 1.

²Alexander Speltz, Styles of Ornament (New York: E. Weyhe, 1910), p. 13.

PLATE II

Bronze Ornament.

Roman

The Metropolitan Museum of Art, New York.



the best evidences of the style and craftsmanship were table bases, chairs, and couches. Plate I shows a Greek-Lycenean Age (1300-1200 B. C.) tripod stand or base. The circular rim is supported on three legs and the rim has a design in relief of lions chasing stags.

The origin of bronze was lost in the remoteness of antiquity. This metal played a much more important role in ancient times than it does today, since it was used for a large variety of objects which today are made of different metals. A vivid picture of the life of the Greeks and Romans is shown by the bronze implements with which they surrounded themselves to perform their daily work.¹

Bronze occupies an important place historically. In the ancient world there was a Bronze Age, which succeeded a Stone Age and preceded an Iron Age. In Egypt, though copper was used in the Old Kingdom, bronze was used in the Middle Kingdom. Bronze, an alloy of copper and tin, is adaptable for casting. Plate II shows a cast bronze ornament of the Augustus Period (31 B.C.-14 A.D.) An increased hardness was to be gained by making this alloy. The composition of ancient bronzes varied. Bronze is not only harder than copper, but it is more fusible and better suited for casting.

¹Paul N. Hasluck, Metal Working (New York: Cassell and Company, 1914), p. 2.

²Gisela M. A. Richter, Greek, Etruscan and Roman Bronzes (New York: The Gilliss Press, 1915), p. xviii.

Casting and hammering were the two methods used by the ancients in fashioning bronze. Both in solid and in hollow casting the so-called *cire-perdue* process was used and is still employed, in a modified form, at the present time, giving better results than the method of casting from sand moulds. The article to be cast was first modelled in wax, and then surrounded with a mixture of clay and sand which formed a mantle. This mixture was allowed to dry thoroughly, then an opening was made at an appropriate place and the whole was heated until all the wax melted away. The molten metal was then poured in, a few vent holes having previously been made in the mantle to allow for the escape of air. After cooling the mantle was broken away and the bronze was ready for the finishing touches. Bronze cast solid used up a great amount of material; however, solid casting was simpler and quicker than hollow casting.¹

In hollow casting a core of clay or plaster was surrounded with a layer of wax which was modelled in the shape of the article to be cast and made the same thickness that the bronze was to be made. Before the outer mantle was applied, wax rods (to serve as future gates and vents) were attached to the figure in the same way that they

¹Ibid., p. xviv.

are today. Bronze cools quickly and therefore has to be conveyed to the various cavities through several channels at the same time and this is the purpose the wax rods served. Moreover, in order to keep the interior core from becoming displaced on the disappearance of the wax, metal rods were inserted, which pierced through the wax and joined the core to the mantle. After the outer mantle had been added, the whole was treated as in solid casting; that is, it was heated in a furnace until the wax all disappeared, then the liquid bronze was poured in the spaces left vacant by the molten wax. The mantle, the inside core, and the gates and vents were finally removed to leave the completed cast and bronze article.¹

Lamb, in his book on Greek and Roman bronzes, gives the following method for casting: the metal was first melted and final casting was done in a stone mould. Several such moulds have been found, many of which were repaired by a strip of bronze being passed round it and tightened with wedges. The moulds were brick-shaped blocks of stone with hollows on all sides, shaped for moulding various articles. Holes for rivets were made by a piece of wood or other

²Ibid., p. xix.

material being inserted into the mould, and the liquid bronze allowed to flow around the inserted pieces.¹

The process of hammering bronze into thin plates was known as far back as the third millennium B. C. The hammering was done either freehand or over a model. In the freehand method the metal was worked from the inside; in the use of a model it was worked from the outside.² Repousse' work is the art of hammering and raising the design on a sheet of metal. Repousse reliefs were much used in the decoration of furniture. Often furniture made of wood would be sheathed with bronze repousse plates. In this decoration the metal to be worked was flat and the ornamental pattern was formed from the back side by using hammers and punches. The metal was heated and placed over lead or pitch for the working process of hammering and punching.³ In some of the decorative repousse, the reliefs were so high and the bronze so thin that great skill was required to attain this result without breaking through the metal.⁴

¹Winifred Lamb, Greek and Roman Bronzes (London: Methuen & Co., 1929), p. 6.

²Richter, op. cit., p. xxi.

³Hasluck, op. cit., pp. 329-330

⁴Richter, op. cit., p. xxi.

For joining various pieces of metal one to another, the ancients used two methods, riveting and soldering. Both hard solder and soft solder were used. Hard soldering was done by using a copper alloy and the soft soldering by using tin.¹

The bronze tool of the engraver has left its mark on the bulk of the better worked bronzes. Engraving decorated the metal after the forms were finished. In the earlier works the artisans had only inadequate bronze tools which were not of sufficient hardness to serve well as cutting instruments. In the 7th century B. C. the discovery had been made of producing iron tools of steel-like hardness. With the introduction of iron tools the art of engraving received a great impulse. A chisel with a sharp point was the most important instrument.² In incised or engraved work the outline of the design (pattern) is actually cut away and removed.

The examples in decorative pattern of inlay work date chiefly from the Hellenistic and Roman times but it is possible that such decoration is hidden on earlier decorations by patina. (Patina was caused by various atmospheric effects and chemical combinations which produced a film on the surface of the metal). The

¹Ibid., p. xxii.

²Ibid., pp. xxii, xxiii.

substances used for inlays consisted of such metals as gold, silver, and copper; niello (a blackish substance produced by a mixture of silver, lead, and copper with sulphur); glass paste; precious or semi-precious stones; ivory; and, occasionally, alabaster. One method of metal inlay widely used was damaskeening, a process by which the design was cut very deeply into the bronze, then small strips of metal were inserted in the cut grooves and hammered in. The incisions had to be slightly undercut, so that the metal pieces to be inlaid would be kept in place by the protruding edges.¹

The niello technique was more complicated. After the silver, copper, lead, and sulphur had been melted together in the required proportions, and the blackish niello formed, this was ground up, mixed with borax, and applied not only to the incised grooves but over the whole surface of the bronze. The whole was heated over a fire, so that the niello mixture would adhere to the metal. After cooling, the niello was carefully scraped from the surface of the bronze and was retained only in the incised design, which then appeared a dull, black color.²

¹Ibid., p. xxiv.

²Ibid., p. xxv.

Bronzes were frequently gilded or silvered. The gold or silver was applied in two ways: one, by actually hammering the gold or silver plates on the object in order to assume the design; the other, by using mercury to fix the forms of gold or silver leaf. There were two ways by which the mercury process might have been done. The mercury and silver (or gold) could have been melted together thus forming a pasty ingredient with which the bronze would have been smeared; or the bronze could have been merely rubbed with mercury and then covered with the silver (or gold) leaf. By the application of heat the mercury was caused to be melted and to combine with the metal leaf decoration to the bronze.¹

By 600 B. C. furniture was often constructed of wood inlaid with metal.² Gold ornamentation in symbolical motifs was applied to the woodwork.³

In her book, Art through the Ages, Helen Gardner describes two metal ornamental Egyptian chairs:

¹Ibid., p. xxvi.

²C. R. Clifford, Period Furnishings, An Encyclopedia of Historic Decorations and Furnishings (New York: Clifford & Lawton, 1927), p. 21.

³Sherrill Whiton, Elements of Interior Decoration, (New York: J. B. Lippincott Co., 1937), p. 28.

PLATE III.

Egyptian Cedar Wood Chair.
Carvings and Ornaments of Gold.

Sir E. Denison Ross, (ed.), The Art of Egypt through
the Ages (London: The Studio, Ltd., 1931), p. 212.

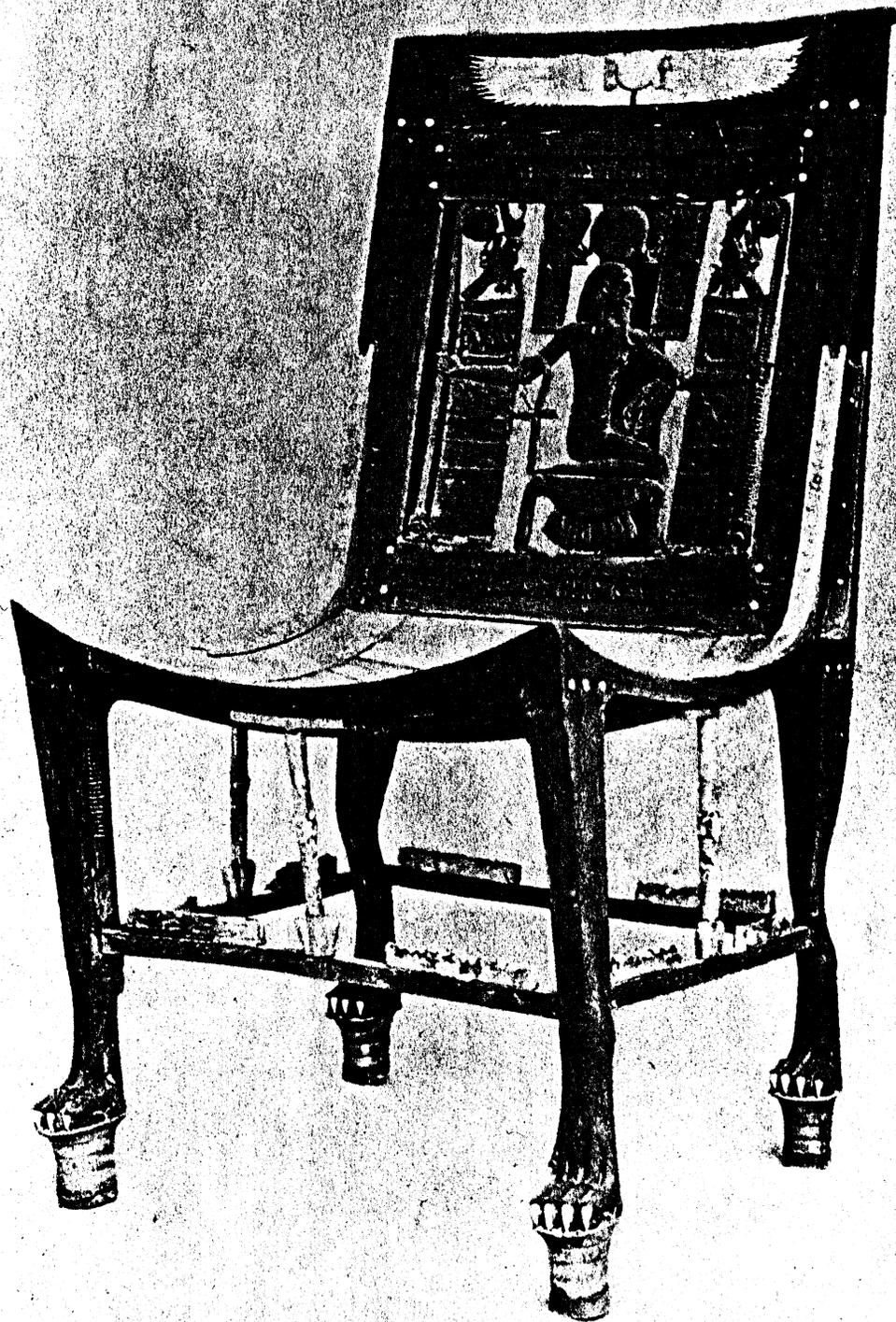
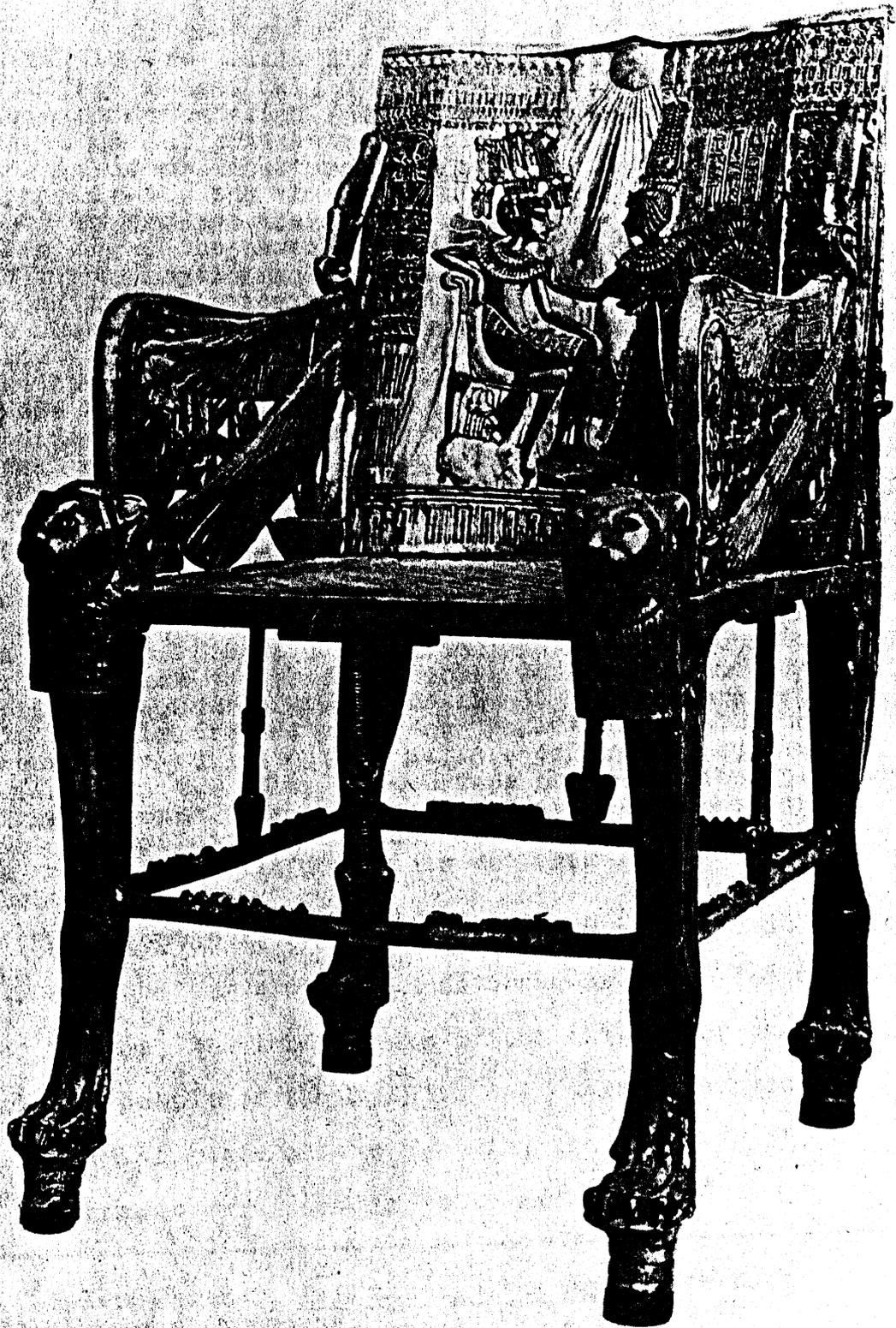


PLATE IV.

Egyptian Royal Armchair.
Overlaid with Sheet Gold.

Ross: The Art of Egypt through the Ages, p. 211.



Of the chairs from the Tomb of Tutenkhamon, a simple one (Plate III) illustrates particularly well the functional, structural, and esthetic excellence of the design. It is made of cedar wood with carvings and ornaments of gold which combine into a design of architectural quality inscriptions and symbols--the sun disk, the uraeus, royal birds with the two crowns, the figure of millions of years, the life sign, the names of the pharaoh. A second (Plate IV) is a royal armchair, which displays the ostentatious magnificence of the times. Its wooden frame is sheathed in gold; the front legs terminate in gold lions' heads, symbols of the powers of the pharaoh; and the arms are made of serpents in gold and faience, whose heads, as they join in the back, terminate in the double crown of Upper and Lower Egypt. The back panel shows a domestic scene in which the Queen is placing some ointment from a jar in her hand upon the collar-necklace of the King; while through a break in the upper border the Sun sends forth rays terminating in hands--the symbol of Aton--to envelop the two. The young wife here represented was the daughter of Ikhnaton; and early in their reign Tutenkhamon and his Queen appear to have remained loyal to Aton only to be brought back to the traditional worship of Amon by the political power of the priesthood. The figures of the elaborately dressed pair and the details of the background are worked out in silver, colored glass, and faience in the gold. The effect is a brilliant picture, a magnificent tour de force, but at the expense of that satisfaction felt when ornament functions both in material and in design as one element in a unified whole.¹

The Egyptians, who were great navigators, sent their ships to all the parts of the Mediterranean Sea. The early clans of Greece, the inhabitants of the islands of the Aegean Sea, and the people of the Spanish and Italian peninsulas, all felt the influence of the Egyptian traders. Egyptian motifs and trends were seen in their early arts.²

¹Helen Gardner, Art through the Ages (New York: Harcourt, Brace and Company, Inc., 1936), pp. 64-65.

²Whiton, op. cit., p. 28.

No complete pieces of furniture, representative of the Babylonians or their conquerors, the Assyrians, have been found. One reason for this lack of examples is that the climate was not as favorable for the preservation of furniture as was that of Egypt. Besides the Babylonians and Assyrians did not practice the custom of burying worldly goods with the dead as the Egyptians did.¹ From the pictures formed by sculptors it may be judged a reasonable illation that the Assyrians adopted the Babylonian furniture. Their style was approximately coincident with the middle Egyptian Empire. Ornamental metal motifs adopting the lotus and other natural forms were borrowed from the Egyptians. The wood structure had disappeared so that the forms of the once metal-decorated furniture had to be surmised; only the bronze, ivory, and gold ornamentation remained.²

The statue of Gudea, King of Babylon, some 2500 years B. C., shows the ruler seated on a throne or chair. Foley stated that the designs of the chairs appeared less

¹Edwin Foley, The Book of Decorative Furniture (New York: G. P. Putnam's Sons, 1911), Vol. I. p. 17.

²Joseph Aronson, The Encyclopedia of Furniture (New York: Crown Publishers, 1938), p. 11

suitable for wood than bronze, therefore, he concluded that the throne was made of bronze, which material the Babylonians were proficient in working.¹

The Golden Age of Greece, 1200-300 B. C., has left few remains of furniture, but pictures on vases and sculpture show the character of beds or couches, chairs, and tables. The form often implies bronze rather than wood. An Egyptian origin is suggested in the elongated couches.

According to Homer (9th century B. C.) beds, tripods and chairs were made of chased bronze.²

After the siege of Plataea in the 5th century B. C., beds were made of bronze and iron and dedicated to Hera. The earliest Greek bed is one found in Crimea, dating from about the middle of the third century B. C. The legs and the curved uprights of the headrest are of bronze.³

Pausanias, in the second century, discusses a cedar wood coffer ornamented with bas-reliefs of gold and ivory, which was offered by Cypselus, King of Corinth, to the Treasury of Olympia.⁴

¹Foley, op. cit., pp. 17-18.

²Louis Hourticq, Harper's Encyclopedia of Art, (New York: New Harper and Brothers, 1937), Vol. 7 I, p. 138.

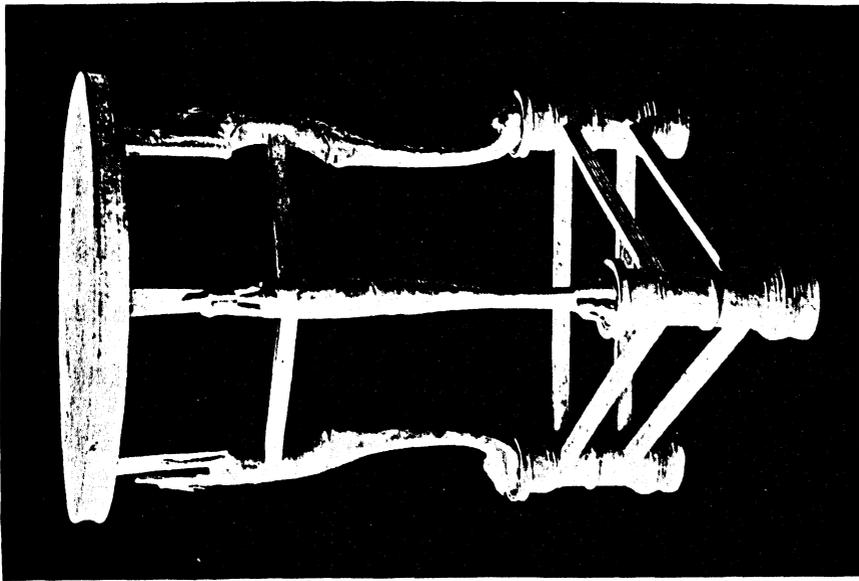
³Caroline L. Ransom, Studies in Ancient Furniture (Chicago: University of Chicago Press, 1905), p. 39.

⁴Harper, op. cit., p. 138.

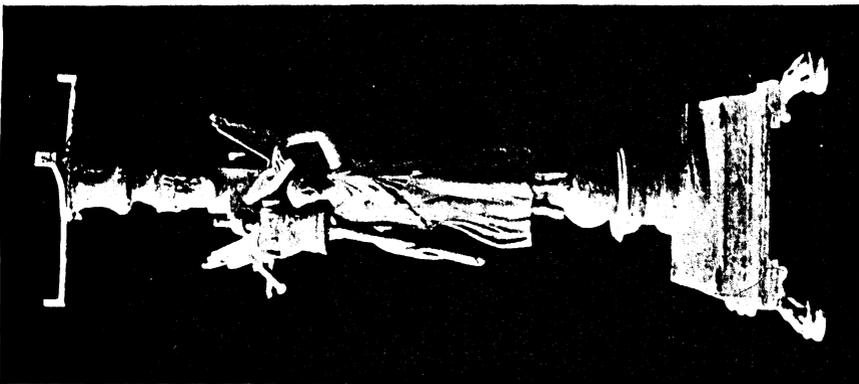
PLATE V.

Reproductions of Roman Furniture in Cast Bronze

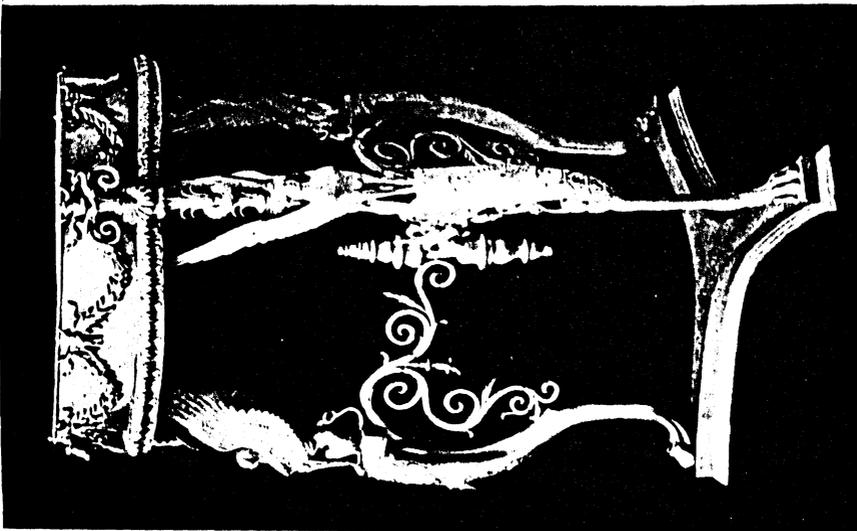
Hunter, Decorative Furniture, p. 1.



19.



2.



1.

Of equal importancē with the Greek and Roman marble furniture are the Roman bronze models. Much of the bronze furniture in the Naples Museum is from Pompeii and Herculaneum.

Well preserved beds were found in the excavations of Pompeii. The frames were made of wood and wooden strips or copper thongs formed the support. The beds were decorated with inlays of silver on a bronze field. Some bronze chairs have been discovered which were backless and probably not very comfortable. Some metal table supports, delicately chased have also been found. Judging by the fact that the tops of such tables had disappeared one may assume they were made of less durable material, such as wood.¹

Marble grave stone reliefs, many of which are found in Athens as they were originally erected, and several of which are in the Metropolitan Museum of Art, picture chairs of the Age of Pericles (5th century B. C.) and of the Age of Alexander the Great (4th century B. C.). The reliefs are apparently of the actual wooden or bronze furniture. Most of the furniture has the concave legs and the curved back so commonly appropriated by the designers in the French Empire.²

¹Ibid., pp. 138-139.

²Hunter, op. cit., p. 21.

Reproductions in the Field Museum of Natural History in Chicago, (though secondary in importance to the originals in the Naples Museum) record exquisite examples of Roman furniture in metal. In the collection in the Field Museum there is a cast bronze table (Plate V Figure 1) supported by three floral stems carried by sphinxes who sit on slenderized lion legs. The upper part of the lion legs are elaborately ornamented with scrolls, wings, palmettes, and an archaistic bearded head of Hercules in relief. Slender and graceful hounds are shown arising from the legs of another table (Plate V Figure 3) found at the Museum. Still another Museum reproduction is a stand (Plate V Figure 2) which shows Victory supporting a bearded Hermes and standing upon a globe of the world. Probably the stand once had a small, square, marble top.¹

After the Second Century B. C. the finest furniture in Rome was largely constructed by Greek craftsmen or by Roman craftsmen with the Greek tradition.²

Ancient Roman life did not demand the quantity and variety of furniture later seen in Europe and America. The dining room or triclinium was an especially prominent part

¹Ibid., pp.31, 56.

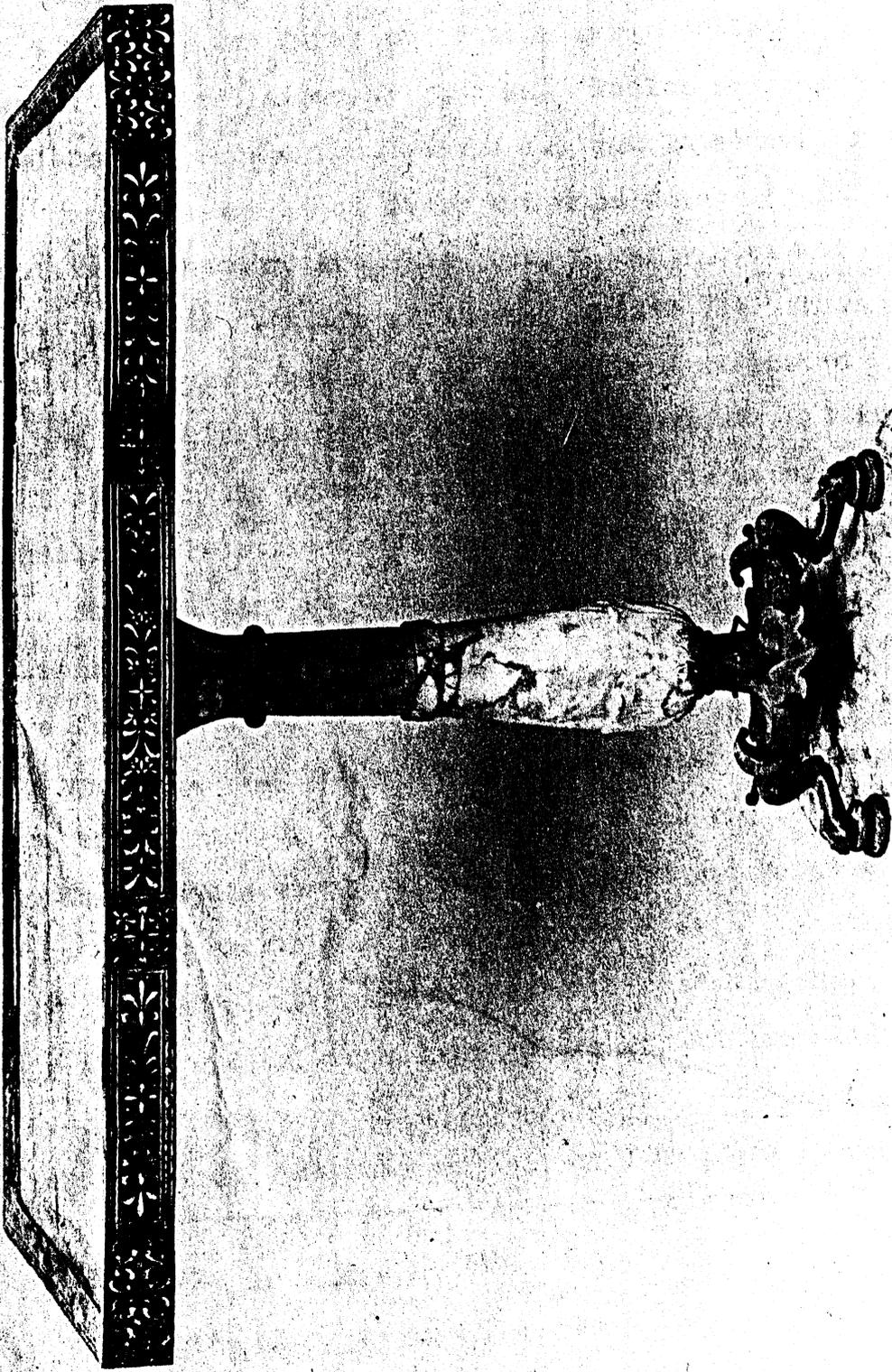
²Ibid., p. 36.

PLATE VI.

Table with Bronze Fittings.

Roman.

The Metropolitan Museum of Art, New York.



of the house and was furnished with a large table surrounded on three sides by couches. Tables were made of marble, bronze, or precious metals and decorated with rich mosaic, tortoise-shell and ivory and wood inlays.¹ In the Metropolitan Museum of Art, New York, a variegated marble table with bronze fittings is shown. (Plate VI). This table has been put together from a number of reclaimed pieces and the missing parts restored. Therefore, it is doubtful whether the present reconstruction is correct in all details. The style is different from the table legs found in Pompeii in that the table is mounted on one leg. Three bronze feet ending in claws with an ivy leaf at each juncture form an intervening member between the marble leg and marble base. The table top is rectangular in form and around this marble top is a bronze rim. The rim is decorated on three sides with beautiful palmette and rosette ornaments which are inlaid in silver and niello. In the original condition, when the bronze still had the golden color, the dull black and bright silver colors of the decorations must have stood out very effectively.²

The bed was the only article of furniture in the

¹Whiton, op. cit., p. 88.

²Richter, op. cit., p. 355.

bedroom; and, like the dining table, was made of wood, marble, bronze, or precious metal.¹ While there are a few references in literature to bronze beds, the many bronze affixments, which still last, of beds are better affirmation to the wide use of metal in this way. The bed was usually adorned with silver inlays, but often copper inlays were used. Sometimes both copper and silver were used for inlay in the same piece of furniture.²

Hunter describes a Roman chest of wood which is partially covered with iron and trimmed with bronze. Across the lower front of the chest in a row are three bronze heads, this design shows an ivy-covered nymph head between two cupid heads.

There are a few remains of early Celtic furniture though the old romances in literature tell that the Celts were intelligent craftsmen in metal work and in making chests for their clothes.³

This early history of decoration of furniture and of decorative design is interesting chiefly as a study of the origin of motifs, or, of the way in which the designs

¹Whiton, op. cit., p. 88.

²Ransom, op. cit., p. 56.

³Foley, op. cit., Vol. II., p. 26.

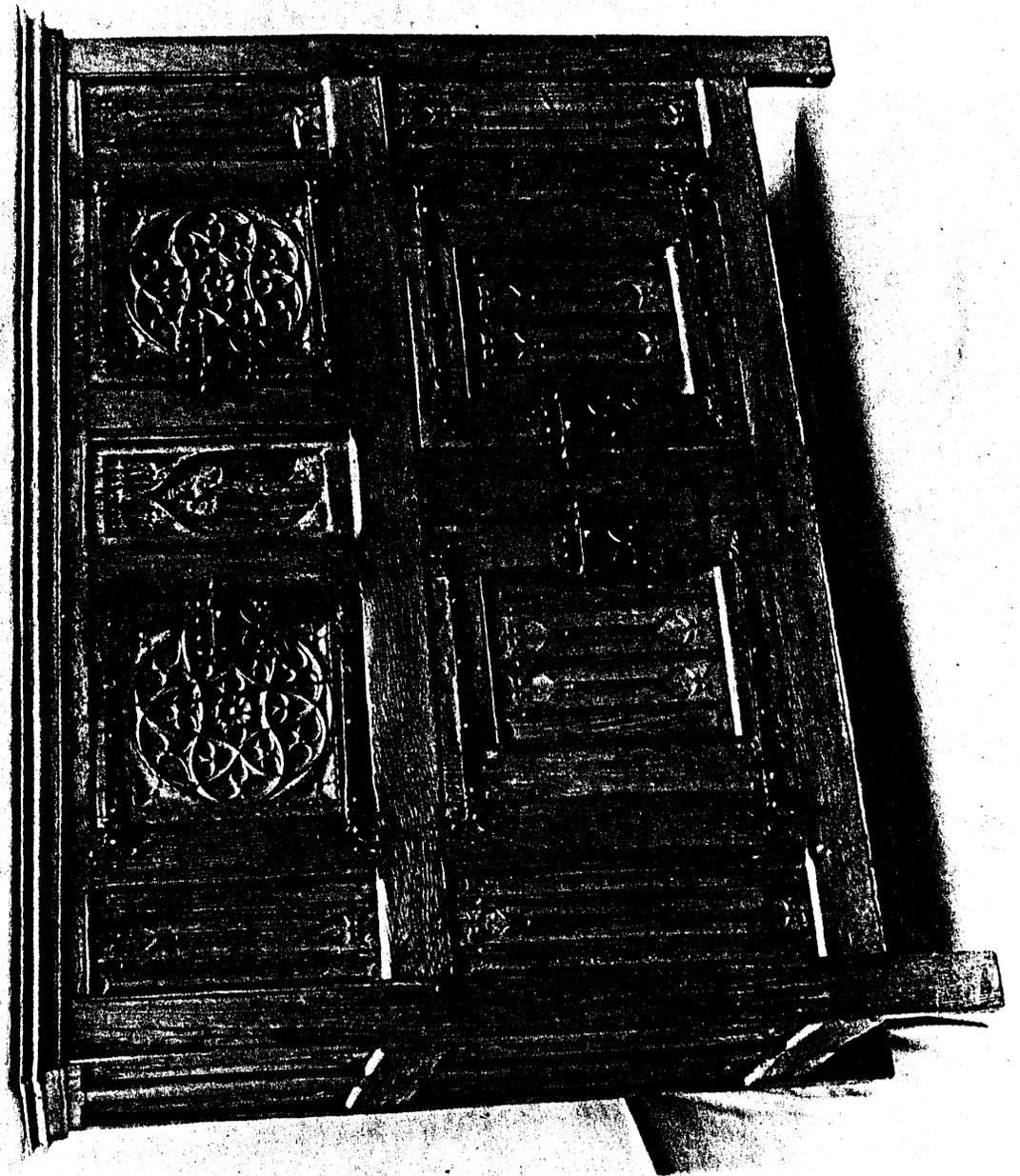
influenced the later styles. The classic Roman style became simplified into the primitive Romanesque pattern, in which form it spread north to the French, German, and English people.

PLATE VII.

Oak Cupboard.

Flemish--Fifteenth Century.

The Metropolitan Museum of Art, New York.



CHAPTER III.

GOTHIC PERIOD.

The church was the stable power of Gothic times; therefore, the chief artistic expressions were ecclesiastical. Gothic art grew from the Romanesque which was the style of Christian Europe from 800 to 1200 A. D.¹

The domestic furniture of the Gothic period was subordinate in quantity and ineartistic design to that of the church. The furniture which was considered in this study was found mainly in the castles of the feudal barons. The state of semi-continuous warfare kept the feudal lords moving about. Their furnishings were taken with them from castle to castle. Chests and coffers were the most vital articles of furniture since this mobility was forced upon them. The chests could be used to hold clothing, bedding, and valuables, or they could be used as beds or seats. As conditions became more settled and life became more stable the chests were made larger and deviations from the former styles were produced in the fashioning of chests of drawers, credences, cupboards, and sideboards. Plate VII illustrates an oak cupboard with iron lock plates, pulls and hinges.

¹Joseph Aronson, The Book of Furniture and Decoration, Period and Modern (New York: Crown Publishers, 1941), p. 21.

The chairs of this period were for the use of dignitaries and they were almost a royal prerogative. Gothic chairs were of the folding type because the people were constantly moving.¹

The Gothic style in furniture was predominant in Western Europe and England from the 13th through the 15th centuries. Gothic influence is traced into Italy in the 14th century. In the centuries of Gothic art, the name for Gothic styles was "Opus Francigenum" (meaning French work). This style came to England, Germany, Spain, and Italy after it had come to France.²

Most Gothic furniture was made of oak, with superbly wrought mounts of iron. This ancient metal work is far superior to any than can be copied or originated today, except, perhaps, by some of the Spanish smiths whose traditions of art and craftsmanship have been inherited from centuries of Spanish excellence in iron work.³

The strength, durability, comparative cheapness, and decorative qualities of wrought iron have made it one

¹Aronson, The Encyclopedia of Furniture, op. cit., p. 98.

²Hunter, op. cit., p. 67.

³Ibid., p. 69.

of the most useful metals in furniture design. Certainly it was the most used metal for making the hammered and chiselled hinges and lock plates of the Gothic chests.¹ Its fibrous texture made it easy to bend without breaking and cracking. Its malleability allowed it to be drawn out or flattened into various forms. Its ductility allowed it to be drawn out in thin wire or rolled into thin sheets. Lastly, its quality of welding, or its property of uniting together at a temperature below melting point, gave the possibility for ornamental effects.²

These qualities of fibrous texture, malleability, ductility, and welding enable the production of ornamentation or structural effects which would be impossible in any other metal. Wrought iron may be fastened together with straps of heated iron, with bolts and screws or may be soldered together with brass or silver solder. Thus it can be used for practically any purpose from the strongest and most massive to the finest and most delicate work.³

Since the decorative character of the furniture was borrowed from church art, which used unpolished oak of heavy proportions and dimensions, it, too, used heavy,

¹Richard Glazier, A Manual of Historic Ornament (New York: Charles Scribners Sons, 1914), p. 129.

²Hasluck, op. cit., p. 2.

³Ibid., p. 4.

large dimensioned oak. The wood pieces of the furniture were ornamented and reinforced with an extraordinary amount of wrought iron in the form of elaborate straps and bands, hinges, corners, locks, and handles, some of which were covered with scroll and foliage designs. This Gothic period hardware was hammered and was always placed on the surface of the woodwork. The decorative metal work was also fashioned into dolphin heads, cock's heads, loops, butterflies, and H-hinges.¹

The Teutonic peoples derived their first ideas of furniture from Rome. The chests which are on high legs, and which have sloping lids like a gable roof, display both the Celtic and the Byzantine ornamentation. These chests were embellished with many iron bands in true Gothic decoration.²

Iron, as an ornamental motif, took a prominent place in Scandinavia about the 12th century. Chests of great elegance and artistry were made. They were decorated with either simple reinforcing metal bands or elaborately patterned scrolls, together with attractive hinges or locks. In addition, some coffers were adorned with spirited hunting scenes. Mythological stories, adventure, and hero tales were the delight of the people of that time, and to

¹Whiton, op. cit., pp. 85-86.

²Aronson, Encyclopedia of Furniture, p. 92.

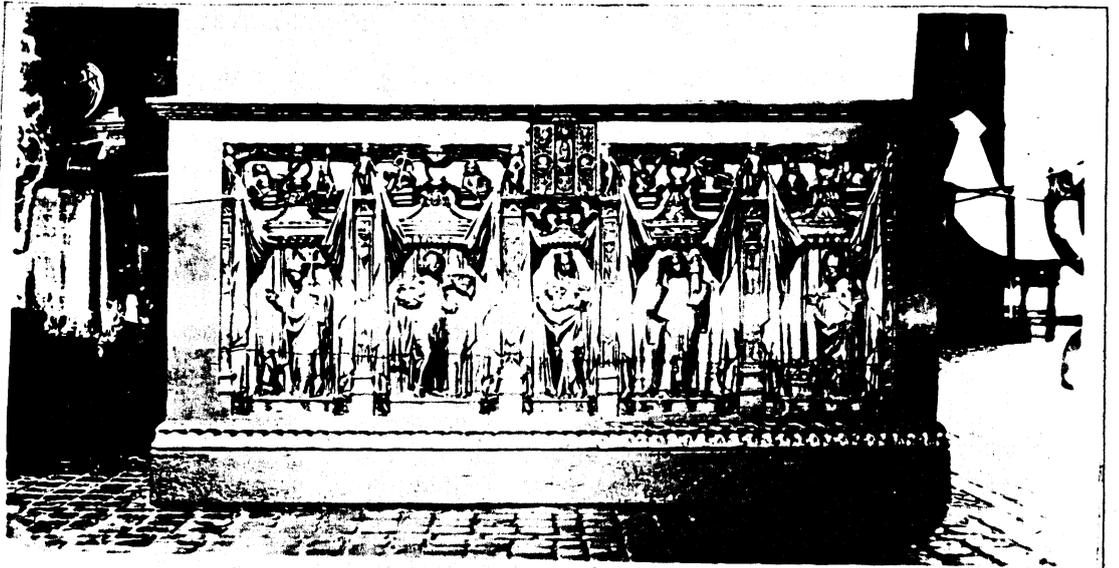
PLATE VIII.

Chests--Fifteenth and Sixteenth Centuries.

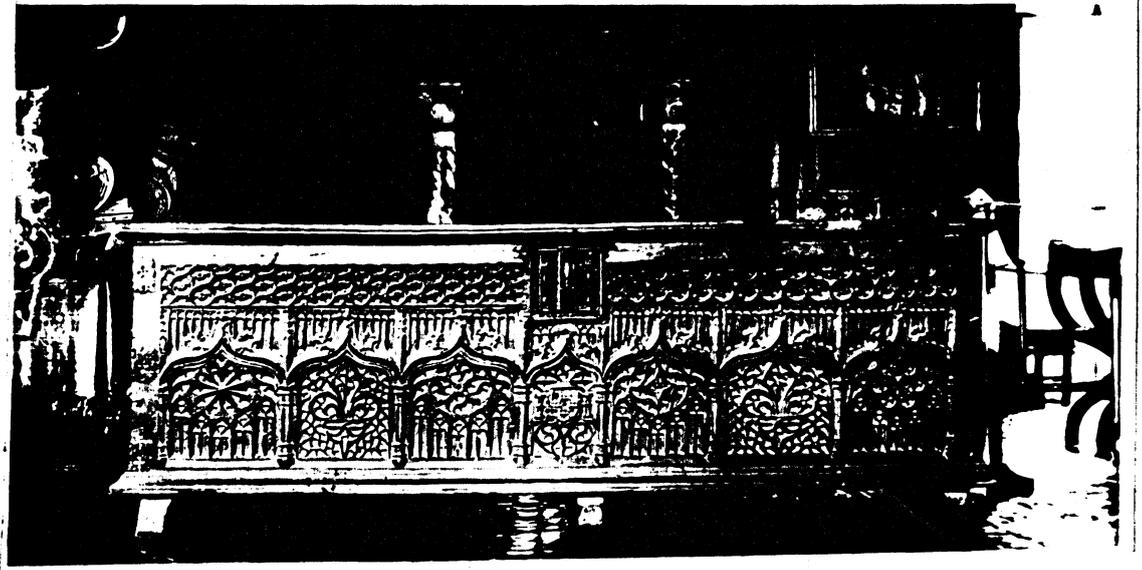
Figure 1. Spanish Chest.

Figure 2. French Chest.

Isabella Stewart Gardner Museum, Boston.



2.



1.

render them in woodcarving, loom-weaving, or wrought iron was the aspiration of every skilled craftsman. The ornamentation was designed by the architect, draftsman, or engraver, yet, the smith himself showed that he was a sympathetic interpreter of the designs furnished him. Great strength and structural impressiveness are given by the architectural treatment of iron-bound corners, nail-studded straps, lock plates, hinges, and handles.¹

Plate VIII Figure 1 shows a Spanish chest of the 15th century from the Isabella Stewart Gardner Museum in Boston. This is an excellent example of the late Gothic period. The rectangular wrought iron lock is enriched with pierced plates. Each end of the chest is fitted with a long, straight, wrought-iron carrying handle.

By the end of the 15th century the metal workers of Austria and the Netherlands, had taken their art as seriously as their Spanish and French colleagues had taken theirs, and, indeed at times surpassed them in the consistent enrichment of their metal decorative fittings.²

The carved French chest (Plate VIII Figure 2) of the early 16th century is also from the Gardner Museum. The

¹Mary Lois Kissell, "Medieval Craftsmen of the North," International Studio, November, 1928, pp.43-47.

²Foley, op. cit., p. 28

proportions of the figures reflect the late Italian Renaissance but the Gothic traits are in the linenfold side panels. In general, the detail is of a transitional type that had worked its way northward from Italy. The original wrought iron lock is divided into three panels with each side panel pierced and underlaid with red leather. On the center panel is a hasp decorated with the miniature statue of the Virgin and child under a Gothic canopy. Below the hasp is a flap which conceals the keyhole. This flap bears a shield ornamented with three fleurs-de-lis. Each side panel has the figure of an angel at the top. In the center of each panel is a profile portrait medallion which has a woman on the left and a man on the right. At the bottom may be seen a half length figure.¹

The smithy of Gothic times required of its craftsmen three fundamental qualities: They must be master of their tools, they must have a knowledge of materials, and they must have the skill to weld and shape iron.

¹William Sutherland, Director Gardner Museum, Boston, personal letter to writer, July, 1943.

CHAPTER IV.

SIXTEENTH AND SEVENTEENTH CENTURIES.

In the Gothic period life had been insecure and the mode of living required only the articles of furniture needed for a nomadic life. The Renaissance period brought many changes. Due to economic improvement and security a new social life triumphed. Furniture became essential and an outburst of decorative fervor fostered the creation of new furniture ideas in the 16th century. Italy led the world in furniture styles in this century.¹

During the first half of the 17th century, Italy continued to lead, but less forcibly. France, Spain, England and other countries grew in importance in the developing of the Baroque Renaissance out of the Classic Renaissance.²

The whole trend of European design in the 17th century was towards extravagance. This movement was a natural sequence of the decorative Renaissance style. In earlier Baroque designs surface treatment became more lavish. Gilded and damascened metals further added to the decorative resources from which the woodwork designer could draw.³

¹Aronson, Encyclopedia of Furniture, p. 156.

²Hunter, op. cit., p. 147.

³Foley, op. cit., Vol. I, p. 292.

The versatility of the artist was a result of an apprenticeship system of education in a shop where many kinds of work were always in progress. The demands upon an artist's shop were many. Carving, tapestries, elaborate furniture, velvets for costumes, and jewelry were in demand. Metal--bronze, iron, gold, and silver--was an important medium, and it was necessary for the artisan to be skilled in the casting, molding, chasing, and engraving of these metals.¹

The Early Renaissance in Italy embraced the late 14th, the 15th, and the opening years of the 16th centuries; the High Renaissance, overlapping and emerging from the Early Renaissance, covered the first half of the 16th century; and the Late Renaissance covered the last half of the 16th century and part of the 17th century.

The capital city of Italian Renaissance in the 15th century was Florence; the capital city of the 16th century was Rome. The Florentine Renaissance is therefore the Italian Renaissance of the 15th century and the Roman Renaissance is the Italian Renaissance of the 16th century.²

In keeping with the Italian houses with their great expanses of plain walls, Italian furniture was large and

¹Gardner, op. cit., p. 371.

²Hunter, op. cit., p. 116.

richly carved. Chairs, seats, chests, tables, cabinets, and beds, were the chief pieces of furniture.

The marriage chest, or cassone, formed a very important part of the furnishing of every household. Because these chests were large and heavy, they were not so easily broken as the chairs and tables; consequently, there are more examples of them. Like those of northern Europe, they were strongly bound with strips of wrought iron cut in ornamental design. The owner's coat-of-arms sometimes were added for ornamentation and as a means of identification.¹

In some of the furniture designs, such functional details, as hinges and locks, were reduced in size largely through technical improvements. Butt hinges were used and these were concealed like the countersunk lock. Keys and key plates, handles, mounts, bandings, and grilles were left as decorative members. Handles and pulls were usually knobs or drop handles and were of wrought iron or bronze. Sometimes the iron was beautifully wrought and then enriched with gilding.²

The chairs of the Italian Renaissance were more beautiful than comfortable. There was the straight chair

¹Arthur de Bles, Genuine Antique Furniture (New York: Thomas Y. Crowell Co., 1929), p. 77.

²Aronson, Encyclopedia of Furniture, p. 102.

and the X chair that was developed from the ancient Roman folding stool. These chairs were often upholstered in velvet or another textile with fringes, tassels and further adornment by use of large gold and bronze nailheads. Brass mounts with deliberately decorative intent were used for chair coverings.¹

In the 16th century, the chests and cupboards, were box forms; during the 17th century, they had added bases, pilasters, and cornices, scaled down from architecture. Their bases were solid pedestals to the floor. The "Cassapanca" was a settee formed from a cassone with the addition of a back and sides.

Also in the 17th century was to be found the "Credenza", a low sideboard with doors and drawers. Lavish carving of the wood work is typical. Simple panelling and brass studding were more apt to be found in the earlier designs of this period.²

The old Moorish and native Spanish characteristics remained dominant in Spanish furniture for a long time after 1500; however, later Italian Renaissance influences were seen in the Spanish domestic furnishings. Spanish Renaissance

¹Hunter, op. cit., p. 117.

²Aronson, Encyclopedia of Furniture, p. 102.

furniture did not take up the architectural qualities that the Italians used. It lacked the decorative pilasters, capitals, plinths, cornices, friezes, and entablatures as used by Italian furniture designers. Spanish furniture of the 16th and 17th centuries was characterized by its strength and stability of structure and splendor of decoration.¹

The Spanish culture of the early Renaissance is referred to as the Plateresque--a term derived from the "platero"--silversmith, suggesting the excellence of the metal work of the period.²

Spain has always been rich in the production of silver, gold, lead, iron, and tin. The supply of precious metals in Spain was greatly increased after the conquest of Mexico and Peru in the early 16th century.³

A characteristic peculiar to Spain was the relatively small variety of pieces of furniture that was found sufficient for ordinary needs. There was not, however, a lack of variety among the few pieces they had. There was

¹Harold Donaldson Eberlain and Roger Weaver Ramsdell, The Practical Book of Italian, Spanish and Portuguese Furniture (Philadelphia: J. B. Lippincott Co., 1927), pp. 175-177.

²Aronson, Encyclopedia of Furniture, p. 174.

³Whiton, op. cit., p. 137.

an endless variety in every piece. For example, some of the chests were so high and so long that they could also be used for sideboards or credenzas.

The Renaissance brought Spanish influence to its peak. Spanish furniture relied to a great extent upon the beauty and decoration of wrought iron structure for its distinction. Along with the iron mounts and ornaments, and just as characteristic of the period, are pierced brass and silver mounts, rosettes, scallops, shells, and stars. Red or green velvet is often fastened under the ornamental metal plaque and sets off the metal design by its coloring. The plaques are shaped oblong, square, diamond (lozenge) or oval with bold outline of conventionalized foliage, elaborately pierced foliage, or delicately and elaborately pierced arabesque, under which the red or green velvet is fastened. Large circular nailheads, chattones, or oblong openwork ones were typical.¹

Spanish chests and cabinets continued to be made in portable form long after the furniture designs of other countries had discarded that feature. As in other countries these cabinets were equipped with heavy iron handles for moving them around more easily and to provide sturdy protection for transportation. Climatic conditions caused it to

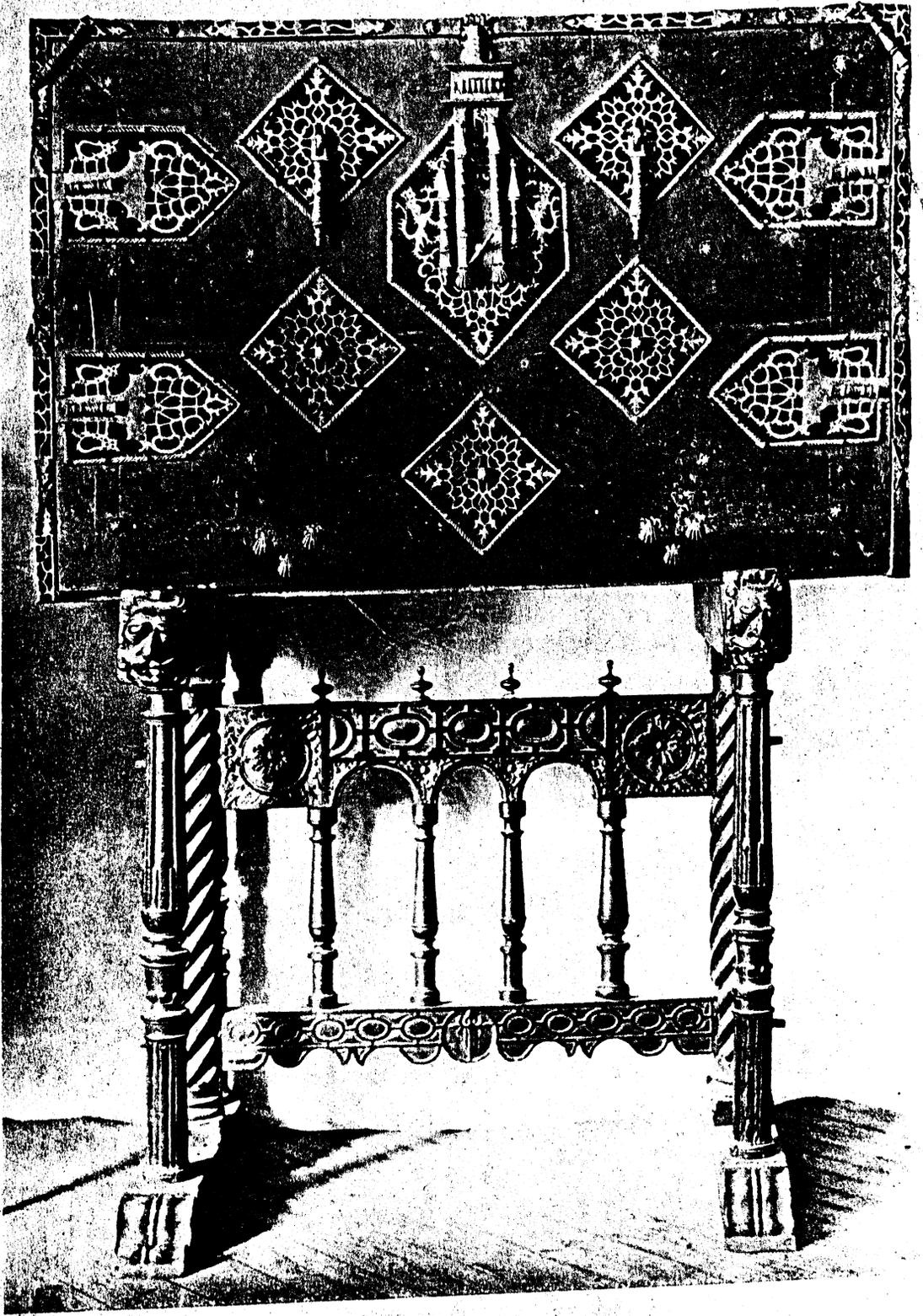
¹Mr. and Mrs. G. Glen Gould, The Period Furniture Handbook (New York: Dodd-Mead and Co., 1928), p. 39.

PLATE IX.

Spanish Renaissance.

Vargueño.

Schmitz, The Encyclopedia of Furniture, p. 160.



be a universal custom in Spain to live on the ground floor in winter.¹

The most universal piece of furniture was the *varguena*, Plate IX. It was a development from the chest and is essentially a chest on a stand. The *vargueno* is more commonly than not elaborately decorated. The outside of the lid or fall down front, hinged or sliding flap and other flat surfaces carry pierced iron or silver plaques, the beauty of which is enhanced by a velvet background. The front encloses a many-drawer interior, gay with gilding, ivory, or bone columns.² The *vargueño* is largely indebted to the smith's art for its metal decoration. It has been assumed that the *vargueño* cabinet gained its name from the small town of Vargas, near Toledo.³

Abundance of iron work in bracings and fancy supports ornaments the table stand of the *vargueño*. One type of supporting table or box stand for the *vargueño* glorifies the art of the wood carver. Originally all tables were merely loose boards placed upon trestles or horses. The trestle table (with trestle attached) as distinguished from the four

¹Walter Randell Storey, Period Influences in Interior Decoration (New York: Harper and Brothers, Publishers, 1937), p. 141.

²Hunter, op. cit., p. 265.

³Foley, op. cit., Vol. I, p. 159.

legged or pedestal table survive. These table stands had arcaded braces and stretchers of either carved wood or of gracefully curved wrought iron. Another type had four legs with wrought iron braces. A third kind of stand was a solid cabinet with drawers or cupboards with doors.¹

Byne, in his book of Spanish Interiors, shows a variety of decorated chests and varguēnos. One, a walnut vargueno with iron mountings underlaid by old yellow velvet and a solid or closed lower piece, is paneled and studded with iron rosettes.²

Leather covered chests are pictured; one with iron mountings and the other with nail head decoration. A 17th century chest from Madrid is velvet covered and ornamented with brass mountings.³

Many of the chairs of the Spanish Renaissance were copies of Italian chairs, not only of the X type, but also of the skeletonized straight line form arm and side chair. The benches and tables were less Italian and often had the distinctively Spanish iron braces which added to the strength and stability of the piece. Carved details, especially brass,

¹Eberlain and Ramsdell, op. cit., pp.192-193.

²Arthur Byne and Mildred Stapley, Spanish Interiors and Furniture (New York: William Helborn, Inc., 1928) p. 250.

³Ibid.

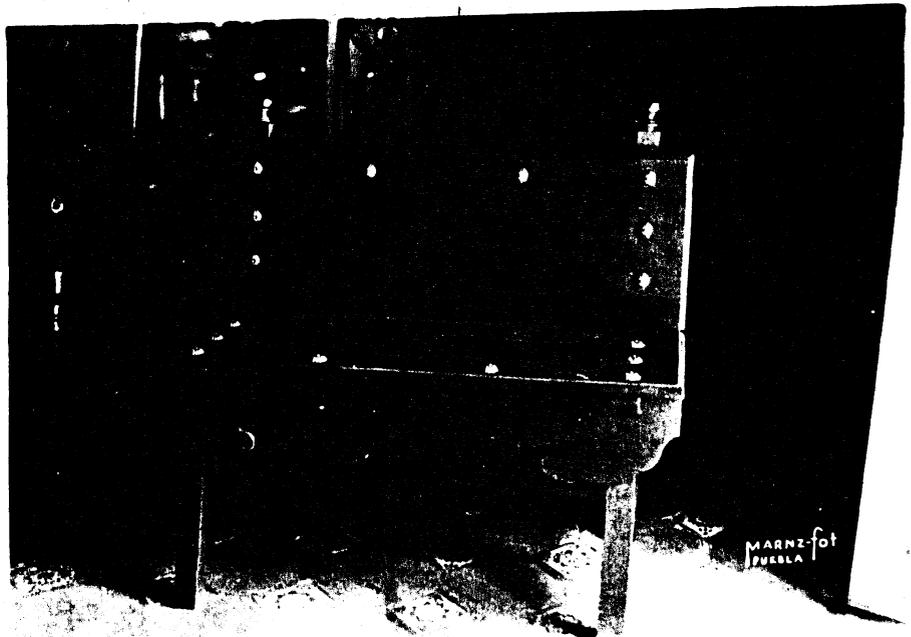
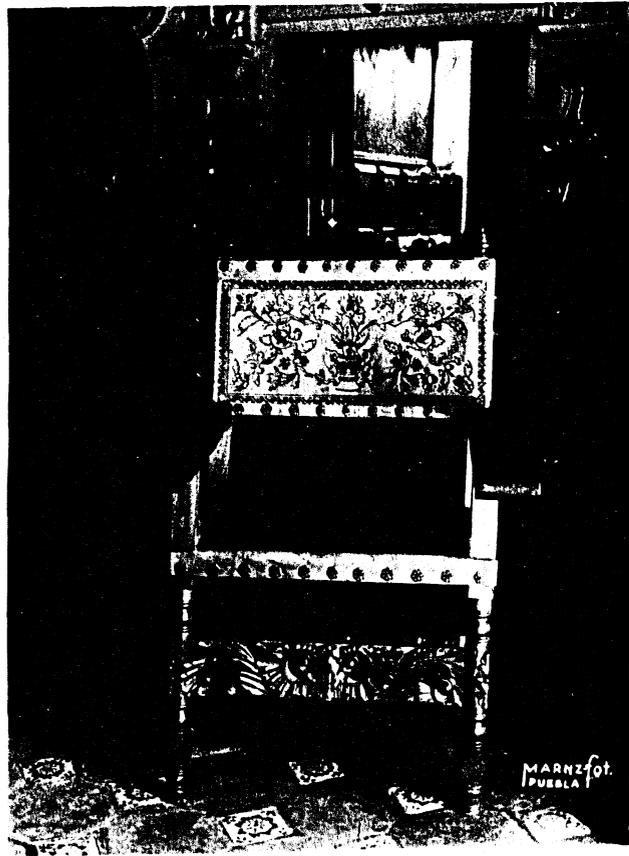
PLATE X.

Sixteenth Century, Spanish.

Figure 1. Chair with Brass Nail Heads.

Figure 2. Bench with Raised Brass Mounts.

Museum, Puebla, Pueblo, Mexico.



were typical chair ornaments. The upholstery was garnished by heavy nails and bandings. Plate X, Figure 1, shows a chair of the 16th century style with brass nailheads used both ornamentally and structurally on the leather upholstery of the chair. The backs of the chairs of this style were seldom as high as the backs of the corresponding type of Italian chairs. The broad decorated front stretcher and the broad arms were also characteristic of Spanish furniture. This walnut armchair or frailerero was known as the monk's chair, a type brought by the monks who established the Mexican and California missions.¹

Plate X, Figure 2 is a bench of Renaissance style with raised brass mounts that served as a decorative feature and perhaps to conceal structural nailheads.

Another chair which was used in Spain in the Renaissance period, and which was known as the "Portuguese Type", had a richly tooled leather back and seat. Both the seat, and back were fastened to the wooden framework with large brass-headed nails. The back was high and arched. The origin of this chair was in Portugal.²

The background of the 17th century in Spain is essentially the same as in the 16th century; however, there

¹Eberlain and Ramsdell, op. cit., p. 210.

²Ibid., p. 212

PLATE XI.

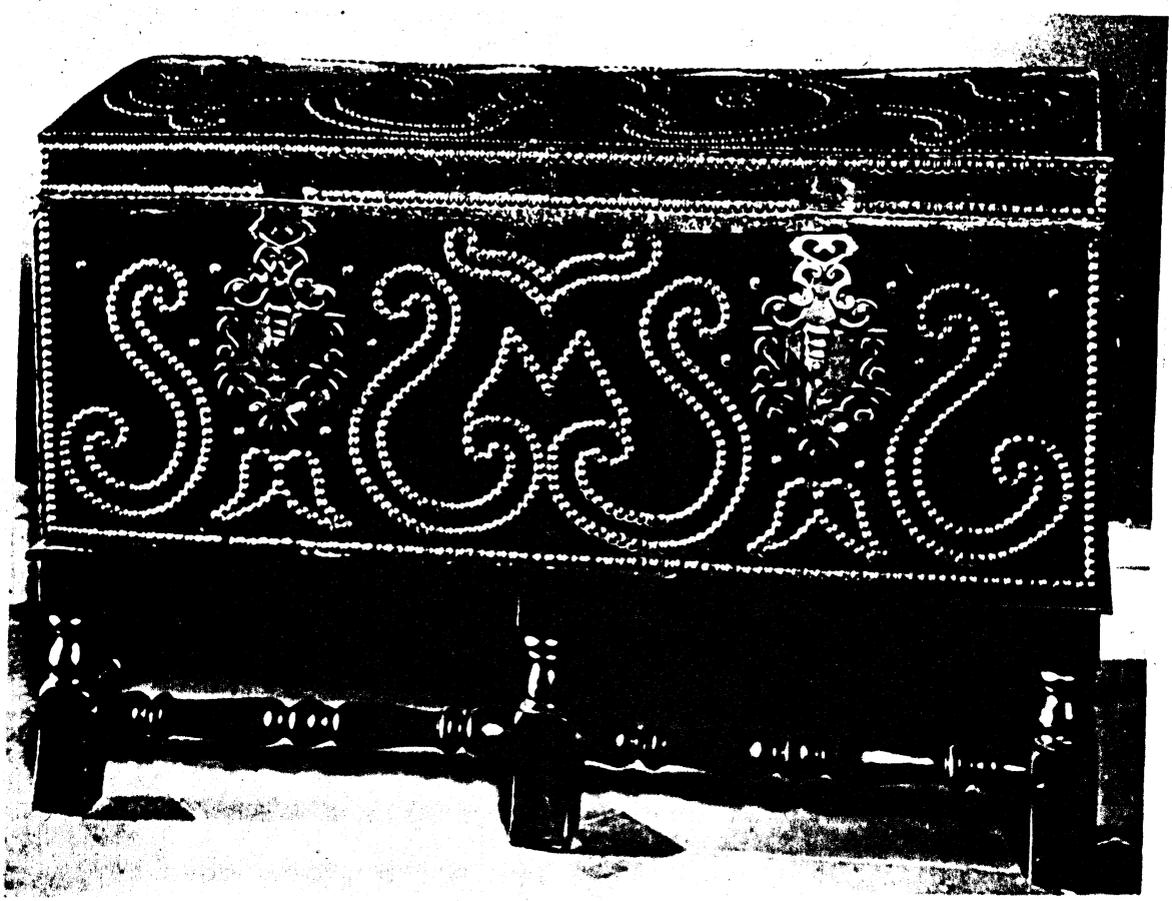
Chests.

Figure 1. Bahu.

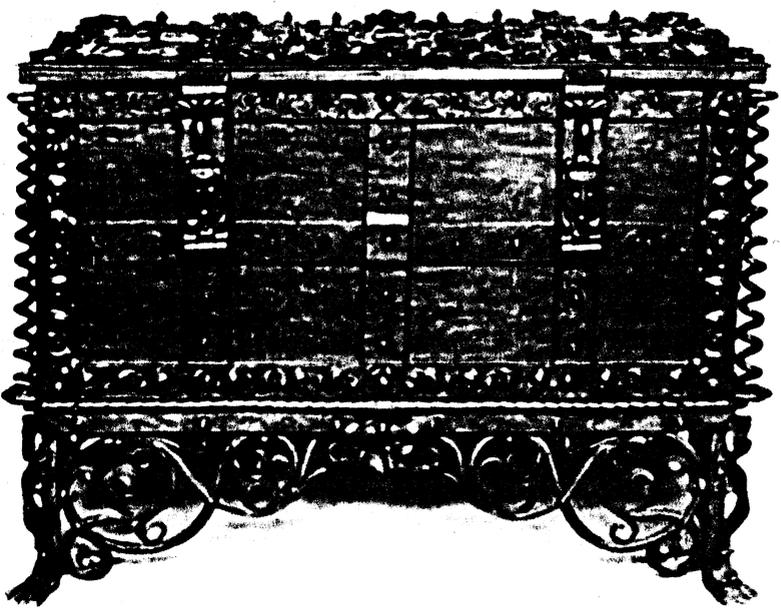
Figure 2. Treasure Chest.

Figure 1. International Studio, Vol. 96, July, 1930, p.39.

Figure 2. Connoisseur, Vol. 75, May, 1926, p. 16.



1.



2.

The very high-backed chair, upholstered in leather and studded with large brass nailheads, can be ascribed to a Portuguese introduction into Europe.¹

One of the principal articles of furniture in the 17th century Portugal was the arca in which clothing and many household possessions were stored. It ranged in size from the great coffer of Brazil wood, decorated with heavy metal, to the casket of silver-mounted stamped leather (or more precious materials) which was only large enough to hold silver or jewels. The arca was so important an item of furniture that there existed in Lisbon, before the great earthquake, a street called the Rua da Arcas, which was given over entirely to the makers of these chests.²

Another chest-like trunk of the period, the bahu, Plate XI, Figure 1, was often used for traveling. While in the household, the bahu was used as a chest and rested on various kinds of stands. Red, brown, or black leather was used to cover the bahu. The whole was studded with nails and was very decorated with bold designs, great clasps, escutcheons and handles of metal.³

¹Bertha M. Collin, "The Development of Portuguese Furniture," International Studio, July, 1930, pp. 39-43.

²Ibid.

³Ibid.

The Portuguese 17th century bed was of Moorish design. It had delicate spindle turnings and ornaments of pierced brass. The head of the bed was reminiscent of Moorish window grilles.¹

The dominant character of Portuguese furniture seems to have been elaborate embellishment. At times decoration was used to excess.

Pierced gilded copper mounts decorated the inlaid cabinets of Portugal. They were further ornamented with delicate ebony and ivory foliage patterns inlaid in solid wood of reddish hue.²

With the ascension of Francis I in 1515, the Renaissance came into its own in France. Francis was a great patron of art and letters, and under his sponsorship the people had new luxuries and new comforts.³

The king held the balance of power in France during this period. This was a noticeable change from the church dominated Gothic times. The art of the church was replaced in order to glorify the state and to compliment the monarchs. It was a great epoch with individuality as its leading spirit,

¹Ibid..

²Schmitz, op. cit., p. 29.

³Garner, op. cit., pp. 506-507.

led by the inspiration of the artists brought from Italy and molded by the genius of France. Although great numbers of Italian artists came to France these artists did not wield all the influence, for national characteristics entered into the art of the times. The French learned quickly and adapted what they learned to their own needs. The delicate and graceful decorations brought from Italy were developed by the French into conventional and period forms so characteristic of their art.¹

German and Flemish details were brought in from the north by craftsmen. Spanish marquetry (derived from the Moors) was also in evidence.²

Florentine Catherine de Medici was the mother of Henry II, Charles IX, and Henry III. Italian influence was not lacking in the furnishings at court and the rich merchant and the burgher built smaller imitations of the court styles. The court was wealthy and had a yearning for the grandeur of the Italian magnificoes.

The palacé rooms were large, impressive, and magnificent; costly materials were used; inlays of ivory, metals, and stone enhanced the regality.³

¹Aronson, Encyclopedia of Furniture, pp. 78-79.

²Ibid.

³Aronson, The Book of Furniture and Decoration, pp. 40-42

The Provincial French style developed from the local versions of the regal furniture. That was the interpretation the merchants and burghers placed on it for their needs. This simple style of furniture continued to be used by the middle class through the 17th century while the upper classes were saturated with new styles and influences according to the taste of the current monarch. The peasants had no furniture at all with the exception of the fortunate few who served the nobility.¹

During the reign of Louis XIII (1610-1643) tables were richly carved and gilded, often ornamented with bronze and copper. Chairbacks were generally low, possibly to accommodate the current style of headdress and ruffs. Leather was used for upholstery and silver or gilt nailheads were applied. As life had become less mobile, the cabinet replaced the portable coffer among the wealthier people. Beds were hidden under an inconceivable amount of draperies, fringes, gold tassels, cords and costly embroideries.²

In the time of Henry III the assimilative phase of the French Renaissance ended, and the Baroque phase continued as a matter of local exaggeration. It was a time of magnificence and shadowed forth the coming glory of Louis XIV.

¹Ibid., The Book of the French Renaissance, p. 1.

²Aronson, Encyclopedia of Furniture, p. 79.

Louis XIV was a man of great will. His ideal was splendor and he encouraged artists of the time to do their work well in order to shed their glory on the time. Huge pieces of furniture were built in magnificent manner to please the taste of the Grand Monarch.¹

One of the great elements towards achieving the stupendous results of this reign was the establishment of the "Manufacture Royale Des Meubles De La Courone" and the workshop of the Gobelins. Artists of all kinds were given apartments in the Louvre. Their shops in the Louvre produced tapestries, fabrics, metalwork, carved wood, silver work and frescoes. The work was in the style preferred by the King, not by the people.² These foreign craftsmen had to be protected against popular dislike. This, however, subsided and the mingling of different national tendencies influenced the styles of Louis Quatorze and his successors.³

Colbert, Louis Quatorze's minister, secured for him the world's best artisans and artists: Domenico Cucci, a cabinet maker that specialized in ornaments of

¹Ibid.

²Clifford, op. cit., p. 148.

³Foley, op. cit., p. 308.

gold, bronze, colored stones, and figures; Andre Charles Boulle; Oppenord and Le Brun. The work shops were under the direction of Le Brun.¹

Le Brun had the same taste and love of magnificence as Louis. He also had executive ability and a talent for gathering about him the best artists of the time.²

Andre Charles Boulle was the most illustrious cabinet maker of this period. He was appointed by the guild of cabinet makers maître-ébeniste (ebeniste, a cabinet maker of masterful skill) to the king. The cabinet makers were directed by the king to create more magnificent, more beautiful, and more novel furniture. Boulle had the ability to carry out such an order and to leave a lasting influence upon cabinet makers of all Europe.³

Two new types of furniture embellishment were developed by Boulle. Ormolu (gilded bronze) motifs and mouldings were used as applied ornaments. Panels were decorated with marquetry patterns made from sheets of

¹Aronson, Furniture and Decoration, op.cit., p. 49.

²Ibid.

³Whiton, op. cit., p. 154.

tortoise shell, in which were inlaid arabesques, scrolls, and foliage of thin brass, German silver, or other metal.¹

Metal marquetry, as produced by Boulle, was usually called Boulle work. The process consisted of veneering a surface of wood with transparent tortoise shell. This shell veneer was further adorned with an inlay of delicate and elaborate metal tracery. As a means of economy, to prevent a waste of precious material the reverse of this process was often practiced. That is, an inlay of tortoise shell was put in metal ground. The name of Counter Boulle was given this process. In Boulle work all parts of the marquetry were held down by glue to the base which was usually of oak.² However, occasionally the metal was fastened down by small brass nails, which were hammered flat and chased over in order not to be visible.³

In this period metal mounts were used not only for functional purposes such as knobs, drawer pulls, hinges, key-plates, and escutcheons, but were also employed extensively for purely decorative purposes. Brass ormolu and

¹Whiton, op. cit., p. 156

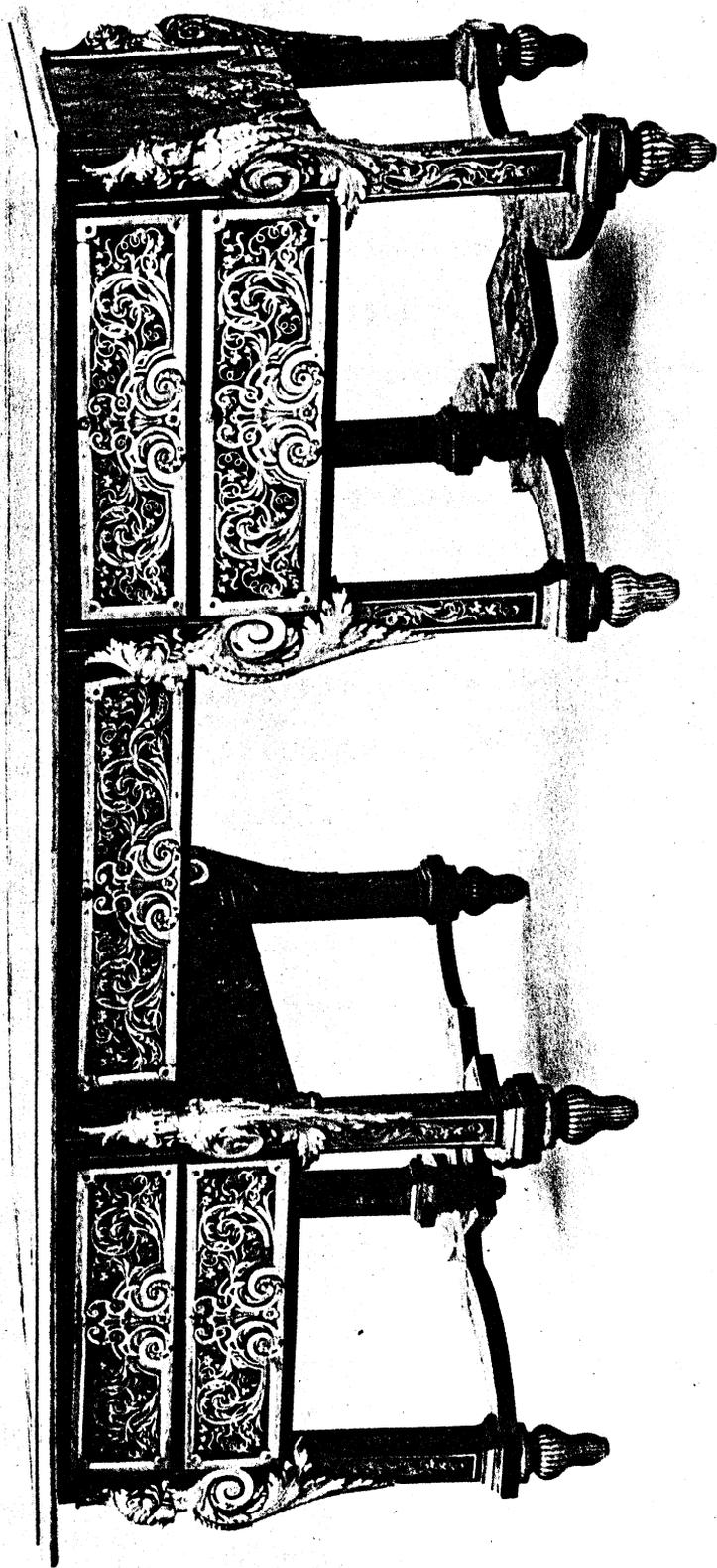
²Ibid.

³Arthur Hayden, Chats on Old Furniture (London: T. Fisher Unwin, 1913), p. 161.

PLATE XII

Desk--Style: Louis XIV.
French Late Seventeenth Century.

The Metropolitan Museum of Art, New York.



other metal mounts were designed in accord with the general scheme of decorative motifs used for the special piece of furniture. Ormolu mounts were of gilded metal made by the mercury process. The gilding was rich and brilliant. After they had been cast they were carved and polished until they were worthy ornaments for inlaid tables and cabinets. Currie dore-gilded copper, and bronze dore-gilded bronze, were also used for ormolu mounts. The designs of the ormolu mounts were in masks or natural faces, heads, busts, or half figures.¹

Boullé made numerous pieces of furniture for the royal residences. Among other pieces that he made were: a marquetry chest for the Dauphin, two commodes of brass marquetry and tortoise shell in the Bibliothèque Mazarin, and a desk in the same style for the castle Fontainebleau. In the Metropolitan Museum of Art (Plate XIII), this table-desk is attributed to Boullé. It had been constructed of ebony, with brass and tortoise shell inlay and bronze gilt mounts.²

Other cabinet makers in the time of Boullé were Pierre Poitou, Jacques Sommett, Jean Normant, Jean Oppenardt, Martin Du Fause, and Claude Bergerot.³

¹Gould, op. cit., p. 67.

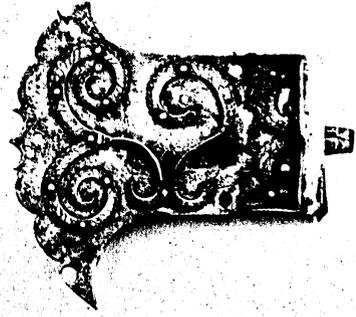
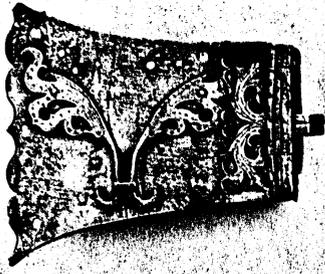
²Hourticq, op. cit., p. 139

³Gould, op. cit., p. 67.

PLATE XIII.

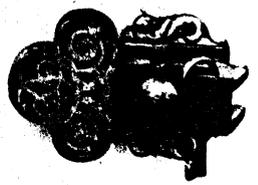
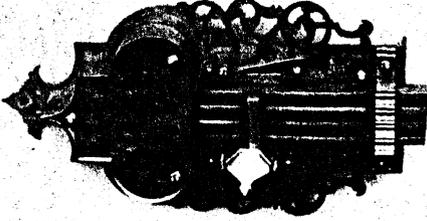
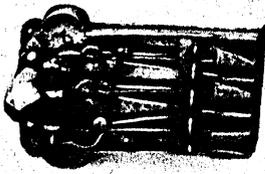
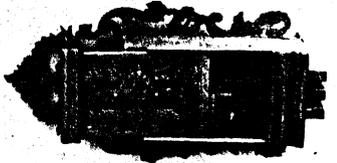
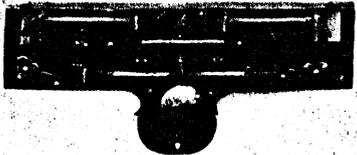
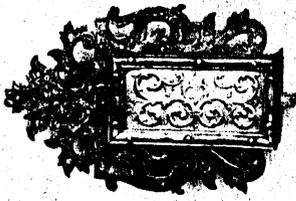
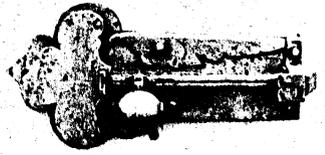
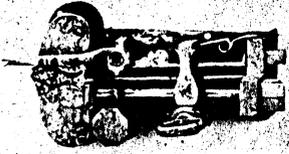
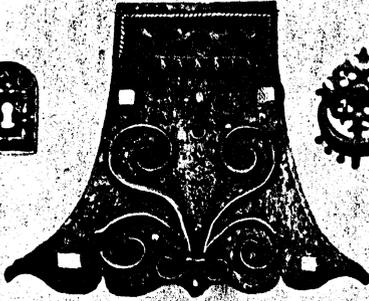
Examples of Ironwork.
German, XV-XVII Centuries.

The Metropolitan Museum of Art, New York.



GOTHIC
BY [unreadable]

GOTHIC
BY [unreadable]



Pewter, an alloy of tin and lead, was frequently used instead of silver, for the engraved plaques that were inset as decorative features on furniture in this 17th century style.¹

The expressions of brilliancy and splendor formed a beautiful and fitting background for the proud king, Louis XIV and for the people of France who played their brilliant, selfish parts in the midst of its splendor.

Smiths of Germany were their own designers and showed their skill in executing intricate devices. They recognized no limits to their powers. They were foremost in Europe in handcraft and in mechanical skill. In spite of their clever workmanship, their designs frequently showed a lack of strength and had a tendency to run riot.² Plate XIII shows examples of German iron work in the fifteenth through the seventeenth centuries.

Augsburg was the center for producing decorative cabinets and box bases or stands. These German cabinets developed after the designs of the Italian Florentine and Mantuan writing cabinets. One of the very early cabinets was made in Augsburg, in 1555, for the Emperor Charles V.

¹Gould, op. cit., p. 67.

²Encyclopedia Britannica, 14th edition, Vol. 12, p. 677.

Matthaeus Wallbaum was outstanding among the first artistic silversmiths who had combined their abilities in producing these cabinets.¹

These decorated cabinets were skillfully made and were particularly interesting for the treatment of ebony, for the delicate boxwood carvings, and for the ivory, marble, and metal inlays. Of further interest were the silver and gold plated reliefs and the glass covered silver platings and paintings.²

Pl Plate XI, Figure 2, shows a German treasure chest that bore the date 1716, but was made in a much earlier style. It had a wrought iron stand with spirals at the corners and was richly ornamented with scrolls and engraved strapwork in wrought iron, fastened to the body of the chest by rivets. The hinged hasps are formed by cast demi-figures.³

A wrought steel chair (supposedly presented by the city of Augsburg to the Emperor of Germany, Rudolphus II) is probably the most minutely elaborated example of decorative furniture in existence. In the design of this chair the German love of detail had given itself full scope and

¹Schmitz, op. cit., p. 21.

²Ibid.

³Major C. T. P. Bailey, "Treasure Chests," Connoisseur Magazine, May, 1926, pp. 16-18.

with the exception of the mouldings scarcely a quarter of an inch was left plain. Foley says of this chair,

Each of the one hundred and thirty-six cartouches or panels, which decorate the four sides of the angle-set posts contains some half dozen minute figures: each cartouche is supported by two figures. The large pediment panel (depicting a Caesarian triumphal procession) holds nearly forty horse and foot soldiers. . . . Only a series of full-size drawings could present the whole of the details. . . .

The artist's name, Thomas Parker, is signed on a plaque under the seat, and dated 1574.¹

Chairs for the people of high rank were inlaid with ivory and silver, for those people of less rank only wood elaborately carved and turned was used.²

Flemish and Dutch Renaissance furniture was influenced by the Italian, Spanish, and German designers. Gilt bronze mounts that were highly elaborate were used on cabinets. Marquetry in large floral patterns and of costly inlays of silver, marble, painted glass and stones were used as an additional decorative motif.³

The Flemish and Dutch exported large quantities of decorative furniture to England. The leather-covered nail

¹Foley, op. cit., Vol. I., p. 175.

²Aronson, The Encyclopedia of Furniture, p. 934

³Gould, op. cit., p. 45.

studded "Flemish" or "Cromwell" chairs were among their exportations.¹

The style of English furniture of all periods follows the style of continental Europe. The copies and adaptations, however, show sufficient English traditions to create a distinctive English style. The best examples of English furniture have been placed in the Victoria and Albert Museum in London.²

In the opening years of the 16th century, the oak chest had become a **settle** with a high back and arms. The credence, or buffet, had developed into a sideboard.³

The royal palaces at Windsor and Richmond were filled with costly foreign furniture. Foreign artists and craftsmen taught the English woodcarver.⁴

Great manor houses or mansions gradually took the place of the old feudal castles. The manor houses show all the characteristics of the Gothic, Renaissance, Tudor, and Jacobean periods.

The reign of the Tudors--Henry VIII, 1509-1547, Edward VI, 1547-1553, and Mary, 1553-1558--covers the last

¹ Foley, op. cit. Vol. I, p. 295.

² Hunter, op. cit., p. 315.

³ Hayden, op. cit., p. 60.

⁴ Ibid., p. 63.

phase of the Gothic style and the beginning of the Renaissance. Since secular power displaced that of the church, domestic furniture developed in the reign of Henry VIII. Oak was used almost exclusively for furnishings. The Italian architects brought in Italian influences, but Gothic styles remained except for details of ornamentation.¹

By the time of Elizabeth in 1558 to 1603, the Spanish and Italian Renaissance began to affect the Gothic style in furniture and a sumptuous Court set the fashion in a greater luxury of living.²

The Jacobean Period began with James in 1603-1625 and lasted through the reigns of Charles I, 1625-1649, Commonwealth and Protectorate (Cromwell) 1649-1660, Charles II, 1660-1685, and James II, 1685-1688. In the early part there was still a strong Tudor feeling, but toward the end, a foreign influence made itself felt. The Dutch, under William, became paramount.³

In the reign of William and Mary, 1689-1702, Dutch influence was naturally very pronounced, as William disliked

¹Aronson, Encyclopedia of Furniture, op. cit., p. 62.

²Hayden, op. cit., p. 67.

³Clifford, op. cit., p. 126.

everything English. The Dutch influence was largely Spanish modified by northern European characteristics. Walnut replaced the oak that so long had been the fashion. William and Mary had a chance to introduce a new style after the burning of Whitehall Palace. The domestic style gained over the regal and architectural. Furniture was developed from the standpoint of comfort and use. It was a lighter style than had previously characterized English furniture.¹

As these periods of furniture--Tudor, Elizabethan, Jacobean, and William and Mary--were essentially periods of oak and walnut furniture, metal was sparingly used. Mounts of Jacobean furniture were not conspicuous. Escutcheons, of iron and brass, for keyholes were for the most part either very small or entirely lacking. Sometimes a metal V-shaped flange was used under the keyhole of chests as a guide for the key. Later after the influence of the continental cabinet makers was felt, gracefully shaped brass escutcheons, either chased or fretted, were used.²

The handles of drawers and cabinet doors, in the earlier part of the period, were simple knobs of either

¹Aronson, The Book of Furniture and Decoration, p. 89.

²Harold Donaldson Eberlain and Abbot McClure, The Practical Book of Period Furniture (Philadelphia: J. B. Lippincott Co., 1914), p. 68.

wood or metal and later drop loops were used. As furniture became more refined, pendant drops of brass, sometimes hanging from chased and fretted mounts were used.¹ Another form of drop handle dating from the reign of Charles II was of brass. It was either made in solid form, or hollowed out at the back. They were fixed by looped wires with ends passing through a hole made in the wood and bent on the inside of the drawer or door.²

Conspicuous hinges were not seen until a later period. They were either small iron or brass straps or were perfectly concealed. Even the more elaborate ones were only occasionally embossed with circular scallops and skillful fretting.³

In the period of Charles II and William and Mary, the wealthy nobles had magnificent square, black, red, or gold, lacquer cabinets with large, pierced hardware. These cabinets were usually on a gilded or silvered stand in the style of Grinling Gibbons, a carver and designer of superior woodwork.⁴

¹Ibid.

²Edwin Foley, The Book of Decorative Furniture, Vol. II (New York: G. P. Putnam's Sons, 1912), p. 358.

³Ibid.

⁴de Bles, op. cit., p. 171.

Only one important introduction in furniture design was made during the reign of James II (1685-1688). This was the use of the eagle as a decorative motif. The second marriage of King James II, in 1673, was to an Italian princess of the ancient house of Este, Mary Modena-Este. A black spreading Eagle was the coat of arms of the Estensi; consequently, the eagle was produced, not only in the round but conventionalized, as key and handle plates on both English and American furniture.¹

Perhaps because the local smith was behind in matters of stock patterns, the ironwork on a piece of furniture was frequently of an earlier date in relation to the style of the woodwork. The ornamental hinges that were found during the reign of Henry VIII were those imported by the Hanseatic League, a medieval league of merchants of free Germanic towns dealing abroad.²

Foley states in his book on decorative furniture that in England silver furniture did not reach the height that it did on the continent, however, the vogue was brought in by Charles II. Several silver pieces were to be found in England in private collections--as at Knole, Ham House and

¹Ibid., pp. 174-175.

²Foley, op. cit., Vol. III, p. 57.

Penshurst--as well as in the King's collection. Many French craftsmen left their native land in a desire for religious freedom and established themselves in England several years before the revocation of the Edict of Nantes. It was likely that these Huguenot silversmiths introduced the actual manufacturing of silver furniture into England. The larger pieces of silver furniture were constructed of well seasoned oak and plaques or plates of silver cover the surface of the wood. The plates were of silver repousse in very high relief.¹

Eberlein, in writing of furniture during this English period, states that silver and ebony were used for furniture among the wealthy; however, he added, that it was only included in the list of decorative furniture for the sake of completeness.²

American Colonial furniture (of the 16th and 17th centuries) was not of a consistent style. This inconsistency arose from the fact that each colony had been settled by people recruited from different social classes who kept a contact with their several native countries but associated very little with each other.³ A great part of the early

¹Ibid., Vol. I, pp. 283,284.

²Eberlein and McClure, op. cit., p. 30.

³Aronson, Furniture and Decoration, p. 129.

American furniture, especially that of New England was of English inheritance. The styles that were brought to America were from provincial England rather than from London.¹

In the early Colonial period the decorative features of furniture were excluded for reasons of religious principle, of economy, and, possibly, of lack of skill. The colonists used the materials that were the closest at hand. These materials were pine, oak, birch, and maple--all woods that acquired color, depth, and polish through simple friction and natural darkening. The wood workers had little time, during those early periods of settling, to spend on finishing the materials.²

The early American cabinet maker emphasized stability in his furniture making. He used the strong mortise-and-tenon joining which was held securely in place with square wooden pegs.³

In this 16th and 17th centuries furniture brass and wrought iron were used for drawer pulls. Engraved escutcheons

¹Hunter, op. cit., p. 387.

²Aronson, Encyclopedia of Furniture, p. 4.

³Marta K. Sironen, A History of American Furniture (New York: The Towse Publishing Co., 1936), p. 2.

were also used, and because of the fine workmanship of some of the pieces, it may be judged that they were imported.¹

Colonial American iron hinges show little of the over-decoration that characterized European hinges of the same period. The busy pioneers had little time for decorative motifs and their sense of thrift forbade their using sufficient materials to imitate examples of the iron ornamentation found in Europe.²

It was not until the beginning of the 18th century that separate style centers for various furniture designs became established in a number of cities.³

Furniture styles grew concurrently over Europe. In this investigation of the 16th century and 17th century styles, it was found that Italy, Spain, France, and England motivated the decorative trends, while Germany, the Netherlands, Portugal and America were of secondary importance since they had not reached the peak of their development of furniture styling.

¹Ibid., p. 4.

²Philip Meredith Allen, "Old Iron," The Antiquarian, March, 1927, pp. 42-46.

³Sironen, op. cit., p. 4.

CHAPTER V.
EIGHTEENTH CENTURY.

The eighteenth century French furniture makers-- the so-called ébenistes--protected themselves against non-qualified workers. The statutes of 1741 required each master to register his own mark and to stamp each piece of furniture with his name and the jme (Jurés-Menuisiers-Ébenistes), the monogram of the artist association. These marks are unfortunately in no one indicated place because they were placed where the blow of the mallet, making the mark in relief, would not damage the furniture.¹

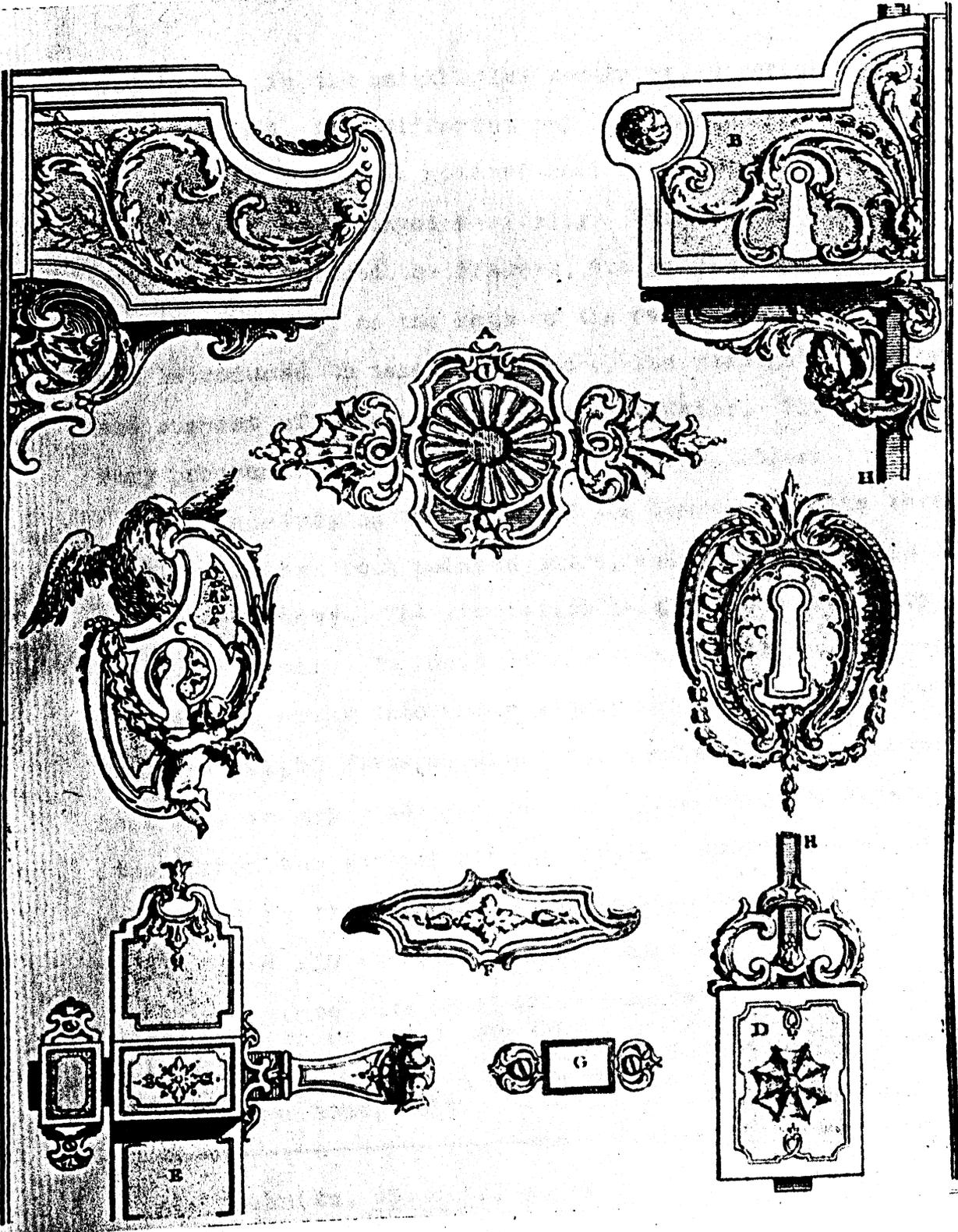
The Regency style in France was so-called after the Regency of Philip, Duke of Orleans. Louis XV became King of France when he was five years old and Philip was regent until the youthful monarch ascended the throne. A new influence, demanding that everything must be curves, came into French design. This new style was a revolt against the stiff and uncomfortable lines of the Louis XIV period in the latter part of the seventeenth century. It marked the transition from the Baroque to Rococo and was equally

¹The Bulletin of the Cleveland Museum of Art, No. 4 (Cleveland: The Cleveland Museum of Art, April, 1942), p. 51.

PLATE XIV

Design for Escutcheons

Strange, An Historical Guide to French Interiors, p. 290.



noticeable in the neighboring countries, especially in Germany, and, in a different way, in England also.¹

The change is noticed most in ornamentation. Furniture forms changed basically. Thin bronze moldings and frames enclosed the drawers, the panels, the edges and corners, as well as the legs of the furniture. The curve was introduced to take the place of the straight legs for the support of cupboards, tables and chairs. The curve was very pronounced in Boullé's later writing tables.

In In studying the style of the commodes of the three Louis', it has been pointed out already that the Louis XIV styles are heavy. The decorative metal mounts are heavy and symmetrical. In Louis XV's period, the front and sides of the case break into bombe waves; the sides instead of coming straight forward, slant in; the marble top changes from gray to gay reads and yellows. The hardware detaches itself from the general composition and spots against the background in the form of pulls, escutcheons, circles and keys. Plate XIV shows some escutcheons of locks.

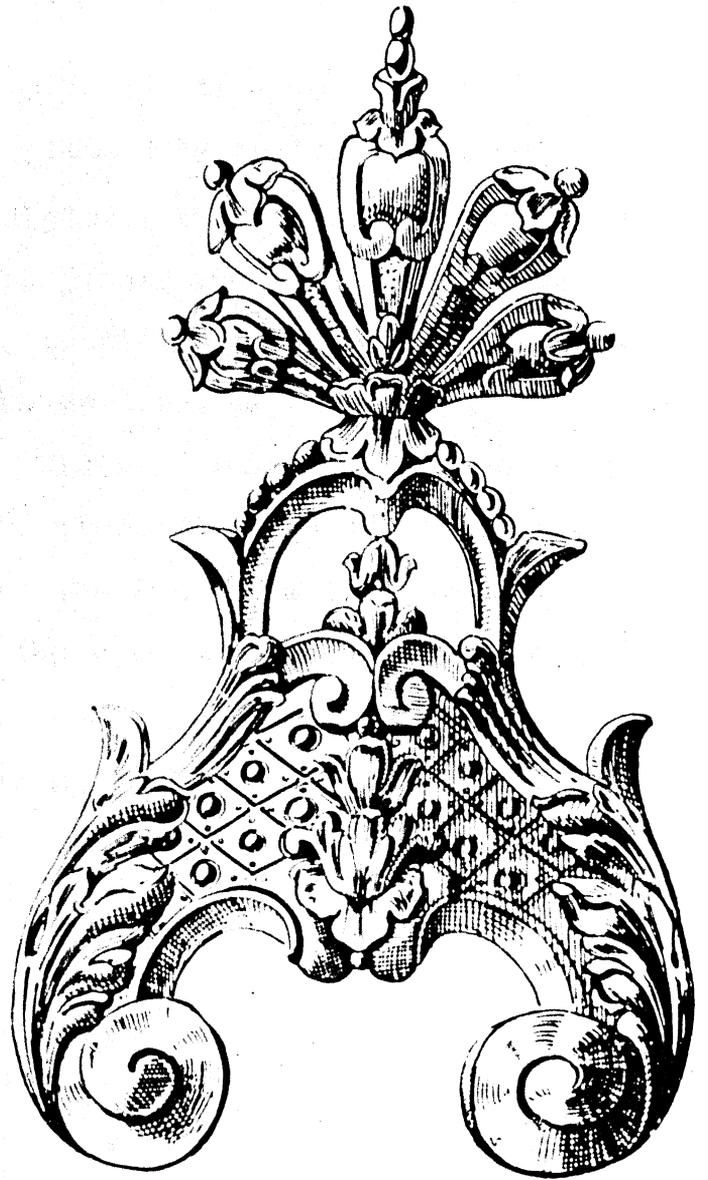
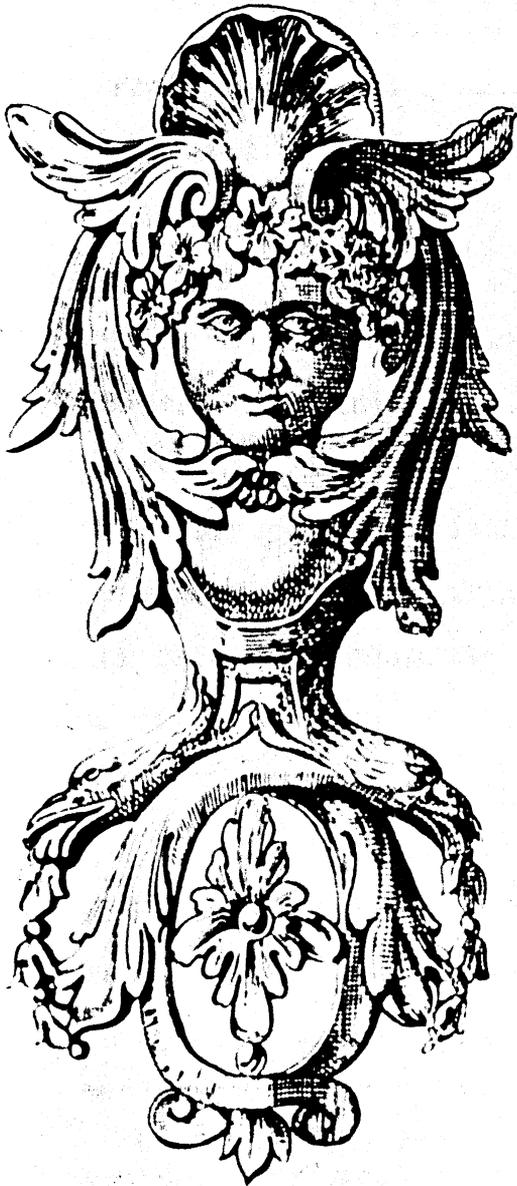
A is a plate with rosette to receive the button. B, keybits of locks, supported by ornaments underneath, which help to redeem the projection. C, keyholes of locks. D, a plate which forms the underpart of a swing bolt. E, a little bolt for cupboards

¹Schmitz, op. cit., p. 44.

PLATE XV

Ornolu Mounts
Early Eighteenth Century

Strange, A Historical Guide to French Interiors, p. 243.



or for windows. F, button to raise latch of the doors. G, conduit to receive the rod of the swing locks. H, rod which with only one turn opens or shuts the door.¹

The more modest pieces use metal strictly for functional purposes. The costliest pieces, by their beauty, metallic tones and a very real sculptural charm, distract attention from the wood of which the pieces are mainly composed.² Here, too, the fire-gilt, modelled-bronze ornament is concentrated at single points in contrast to the heavy mounts of the Louis XIV furniture. Plate XV shows ormolu mounts of this period. Particularly characteristic of these applications of ornamentation are the female busts which are used as terminal ornaments of the upper curves on posts of cabinets. They are usually arranged on the upper curves of volutes and are called espagnolettes.³

The combination of the writing-table with drawers and a superimposed cabinet produced the writing cabinet about 1720. The cabinets were decorated with inlaid work in various woods, ivory, and brass.⁴ In the latter half

¹Thomas Arthur Strange, An Historical Guide to French Interiors, Furniture, Decoration, during the 17th and 18th Centuries (London: McCorquodale and Co., 1903), p. 290.

²Foley, op. cit., Vol. II. p. 218.

³Schmitz, op. cit., p. 44.

⁴Ibid., p. 45

of the eighteenth century the French cabinet craftsmen found it necessary to construct a large number of pieces of writing furniture, since the king had some nine hundred secretaires who paid highly for the honor of being appointed to the post.

Charles Cressent (1685-1768) was as versatile an artist as any man of the eighteenth century. He was cabinet-maker to Philippe d'Orleans, Regent of France. He was a designer, sculptor and craftsman in wood and bronze. He was a pupil of Boulle. He cast and chiselled exquisite female heads for the corners of his pieces of furniture. On his bronze covered cabinets he worked vigorous and original designs in relief. The forms used were foliage, strings of pearls, recailles (rock and shell), roses, seaweed, ovals, wings, and clouds grouped with exquisite taste.¹ Cressent studied the Boulle methods, so in his work, not only bronze and ormolu decorations, but tortoise-shell and marquetricie may be seen. His bronze ornaments were, no doubt, often inspired by the engraver, Gillot.²

Probably the Rococo spirit was carried to its best expression by Jules Auréle Meissonniér who was born at

¹Foley, op. cit., Vol. II., p. 213.

²deBles, op. cit., pp. 232-233.

PLATE XVI.

Commode Louis XV Period.

Ormolu Mounts by Jacques Caffieri.

The Cleveland Museum of Art.

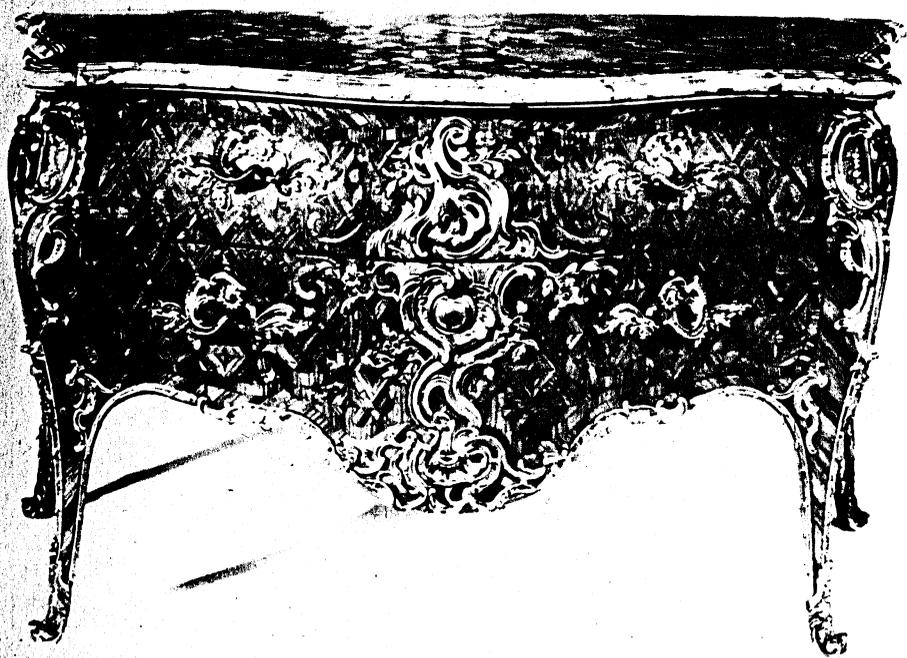


PLATE XVIII.

Commode.

French XVIII Century.

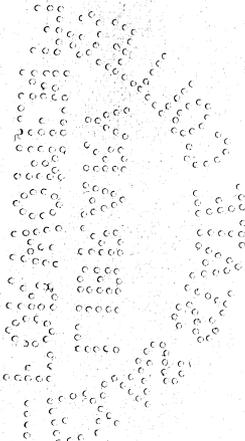
The Metropolitan Museum of Art, New York.



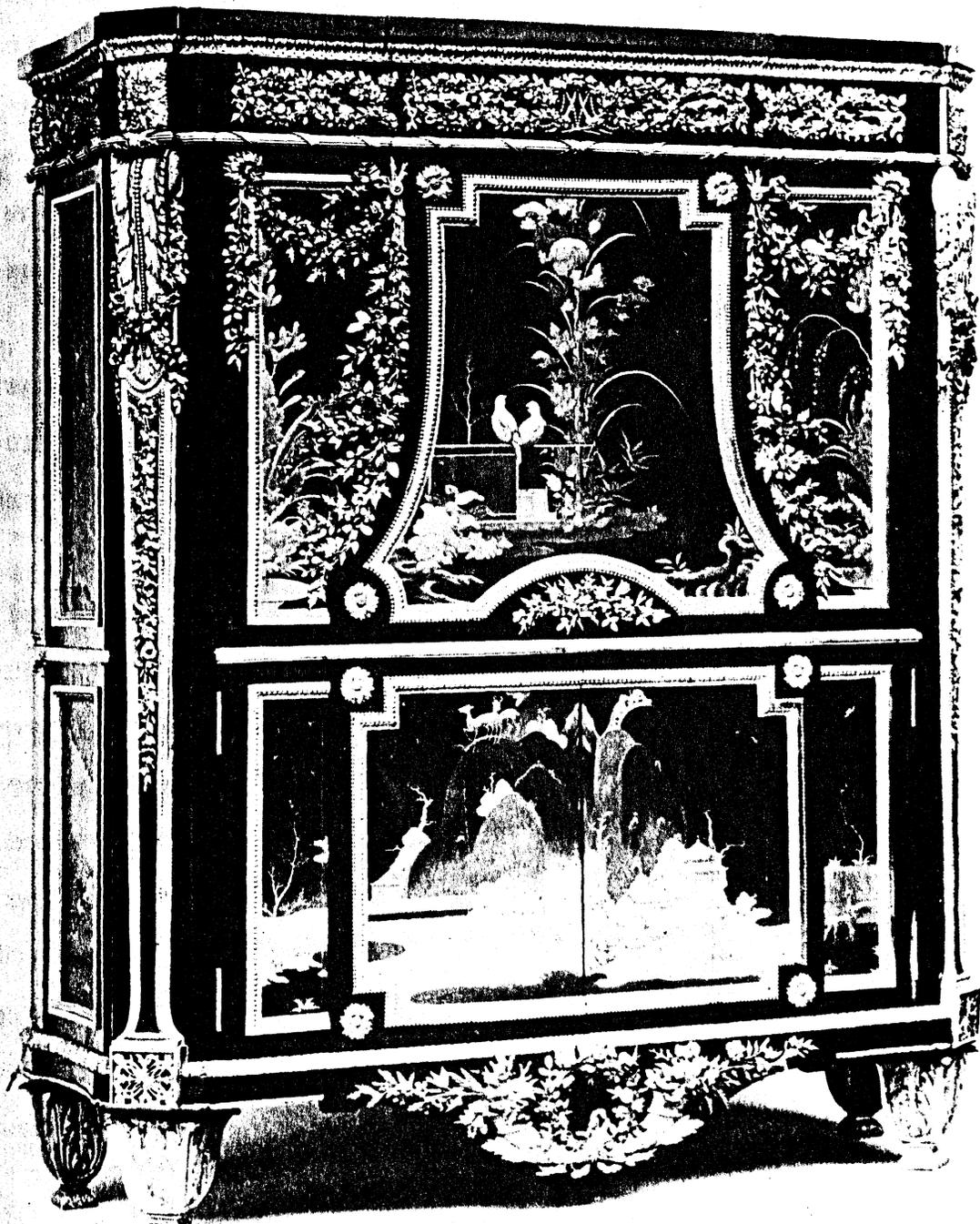
PLATE XVIII.

Secretarie.

French 1780-1790.



The Metropolitan Museum of Art, New York.



Turin in 1695. He was a designer to Louis XV and to the royal houses of Germany, Portugal and Poland.¹ He was Director of the Royal Factories from 1723 to 1750. Because he designed a great amount of goldsmith's work, his designs lend themselves more to this kind of work than to metal used as furniture ornamentation.²

Jacques Caffieri designed many of the ormolu mountings of the earlier Louis XV style. Plate XVI shows a tulipwood marquetry bombe commode with ormolu mounts by this artist. It is now in the Cleveland Museum of Art.

Another cabinet maker of the period was Jean Henri Riessener, a German by birth. His furniture is exquisitely proportioned. He worked for Marie Antoinette who adored roses. Even though roses were one of his chief motifs of decoration, some of his pieces have a masculine strength. The commode (Plate XVII) is of bronze, lacquer, and ormolu. The cabinet work is attributed to Riessener. The cipher "M. A." of Marie Antoinette appears in the frieze. On the back is the brand of the garde-meuble of the queens and an inventory number of the royal chateau. This piece of furniture is now in the Metropolitan Museum of Art.

¹Strange, op. cit., pp. 257-258.

²Foley, op. cit., Vol. III., pp. 220-221.

Riesener collaborated with Pierre Gouthiers, a French bronze worker, who was famous for unsurpassed metal mounts for cabinets. Both the commode in Plate XVII and another piece of Riesener's works, the secretaire in Plate XVIII, show the remarkable skill in the execution of ormolu mounts--the monogram in metal work, the sharply cut ribbons and flower garlands in bronze.

After the French Revolution (1789-1795), France wanted nothing of Royalty. Although the Directorate was overthrown in 1799, the term Directorate is often applied to that period of nine years after the French Revolution and before Napoleon Bonaparte became Emperor of France. Directoire was essentially Louis XVI, but simpler, and adorned with the symbolism of the Revolution. The furniture was of mahogany, rosewood and ebony with brass mountings.

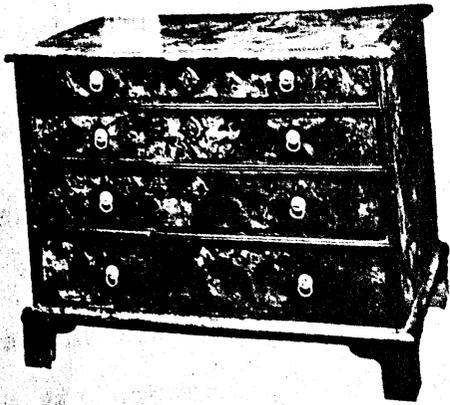
In the early part of the eighteenth century Queen Anne reigned in England. Her name has been associated with the style of furniture of that period; however, she was neither interested nor influential in its development. Queen Anne furniture was a combination of the late Stuarts, as expressed in the days of William and Mary, and of contemporary Louis XIV of France. On the one side was seen the traditional simplicity and the remnant of severity of

PLATE XIX.

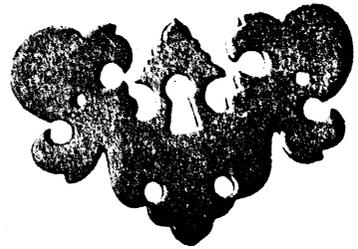
Furniture and Metal of the Early Georgian Period.

- Figure 1. Queen Anne Chest of Drawers.
- Figure 2. Queen Anne Chest on Stand.
- Figure 3. Queen Anne Handles and Lock Plate.
- Figure 4. Queen Anne Bureau.

- 1 Connoisseur, November, 1938, p. xliii.
- 2 Connoisseur, September, 1936, p. xvi.
- 3 Brass Furniture Mounts (Grand Rapids: Keeler Brass Company), pp.33-113.
- 4 Connoisseur, January, 1939, p. v.



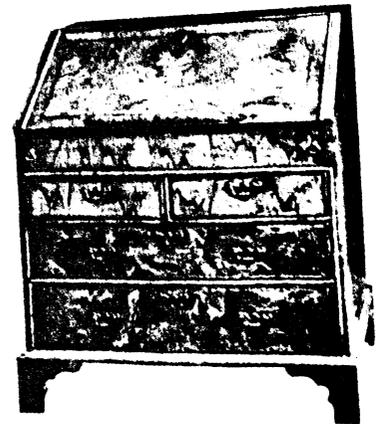
1.



3.



2.



4.

English trends; on the other, the frivolous expressions of French ornamentation. This period in England was known as Early Georgian.¹

The elaborate pierced and chased mounts of the lacquer cabinets of the William and Mary period were replaced in the early Georgian period by plainer brass work. The escutcheons were, more often than not, plain; however, it was not uncommon to find them sometimes pierced and sometimes slightly chased. Handles were usually of the bail pattern.² Plate XIX shows furniture and metal of the Early Georgian period. A typical handle was the circular drop with a rose or star back plate. Silver escutcheons, designed with cupids, were occasionally found on very fine pieces.³

The name Chippendale was associated with the furniture that was in fashion in England and her colonies from about 1750-1779. There were three members of the Chippendale family engaged in cabinet making and of the three, the youngest, Thomas Chippendale, was most important. They worked during the reigns of the Georges. Their special fame was wood carving in many woods. They used brass

¹Esther Singleton, The Collecting of Antiques (New York: Macmillan Co., 1937), pp. 188-189.

²Eberlain and McClure, op. cit., p. 100.

³Gould, op. cit., p. 169.

mounts on their furniture. The handles were either a simple ring shaped bail with back plate or a bail with back plate of detailed Rococo design with shell, flower, ribbon, drapery, torch, flags and trumpets. The most elaborate and fanciful Rococo pattern, equalled in intricacy the ormolu mounts of contemporary French furniture. The keyplates were not large enough to be conspicuous. The metal lent a decorative effect to the general appearance of the piece of furniture. On a very few pieces of fretwork, mounts of brass were used solely for ornamentation.

During Chippendale's last years, his workshop was given over to making, in cooperation with the Adam Brothers, furniture of a more classic form. "This is the period contemporary with the Classic Revival of Louis XVI of France, but, owing largely to the individuality of Adam, the influence of English furniture of this period upon French was considerable.¹

The sideboard was developed in the Early Georgian period. Its individuality was marked by pedestals of corresponding design which flanked either side. A wine cooler, or cellaret, was often placed underneath the sideboard. At the back of the sideboard, against the wall, was added a metal--usually brass--rail, or rails, supported by uprights.

¹Hunter, op. cit., p. 354.

Sometimes the sideboard was further adorned with attached metal candle sticks.

J. Swarbrick, in his book, Robert Adam and His Brothers, describes a wine cooler: "This is of massive character and has been executed in mahogany and enriched with carefully chased ormolu mounts."¹ He says of the fine Adam sideboard, pedestals and wine cooler:

Comparatively few examples of contemporary work were prepared with so much care and so admirably finished. In this case the work was not only enriched with an inlaid veneer, as in the case of the two side tables in the music room, but it was further adorned by the use of chased brass mountings which were worked so excellently as to rival the work of Gouthiere himself.²

The metal mounts for Adam furniture were designed with the distinctive delicacy and care that mark the works of the Adam Brothers. Plate XV shows an oval wine cooler of the Adam period, with chased gilt metal mounts. The patterns varied with the individually designed pieces. There were ring plates designed with medallions, acanthus scrolls, garlands, pendants or bow knots.

Both Hepplewhite and Sheraton drew inspiration from the Adam brothers. Hepplewhite's style was identified by the square, straight, tapering leg of the furniture pieces; the concave front corners of the sideboards; and the interlaced shield chair backs. The brass mounts were

¹J. Swarbrick, Robert Adam and His Brothers (London: B. T. Batsford, Ltd., 1915), p. 181.

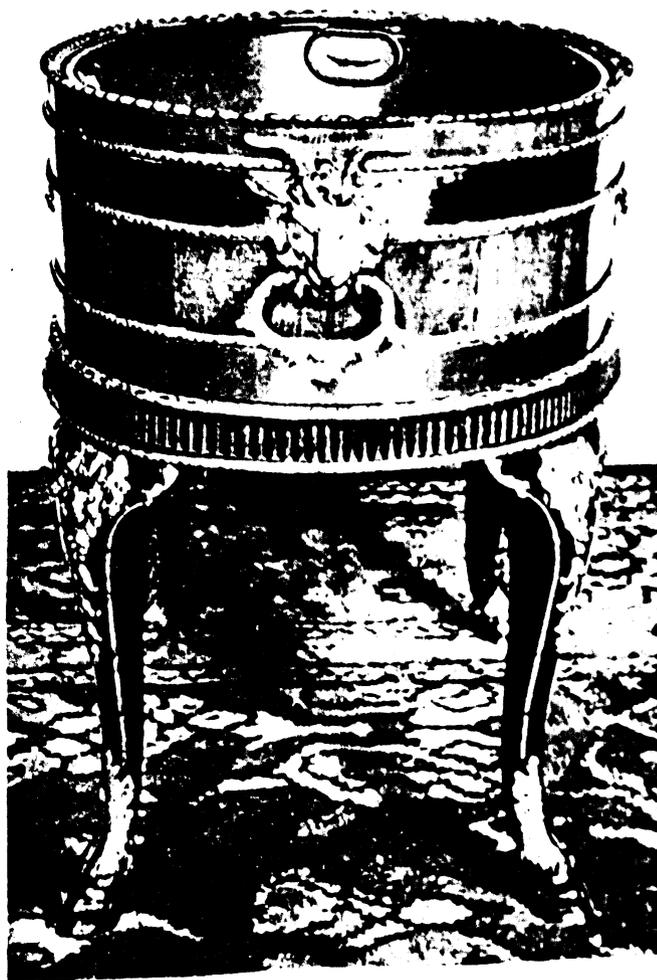
²Ibid., p. 202. *reclure*, op. cit., p. 225.

PLATE XX.

Oval Wine Cooler.

Adam Period.

Connoisseur, September, 1936, p. 157.



simple in design using round, oval and octagonal back-plates to handles, and knobs either chased or engraved. Sometimes the central portion of the metal back plates for handles had a medallion embossed with a classic scene.¹ Hepplewhite handles were often dainty and of small design and it was often said that they sometimes lacked sufficient strength. The metal gallery or rail was also found at the back of the Sheraton sideboards and sometimes metal candelabra were added. Besides the usual eighteenth century handle, handles of lion-head design, with rings suspended from the lion's mouth, were often used. Sheraton liked the fashion of inlaying with strips of brass.

Oval or octagonal cellarets were found throughout the eighteenth century English furniture. They were most generally made of mahogany and hooped with brass hoops. The inner part was divided with partitions and lined with lead for the purpose of holding bottles.²

American furniture in the eighteenth century was referred to as Colonial, although the term has no particular meaning as to style. Hunter defines Colonial furniture as that furniture made and used by European colonists in

¹Eberlein and McClure, op. cit., p. 223.

²A. E. Reveirs-Hopkins, The Sheraton Period (London: William Heinemann, 1922), p. 32.

America before 1776. He states that he would include under the title "Colonial" furniture made in America as late as 1840 since there was little change in design until that time. The furniture of this period is naturally of English inheritance. Much of the English furniture was brought from provincial England rather than from London.¹

Before the American Revolution, Dutch inheritance was strong in New York, the German in Pennsylvania and the French inheritance in the South and Louisiana. There was no inter-communication between the colonies that might have consolidated and intermingled their furniture of various designs. The communication with the home country was slow and, consequently, knowledge of the changing styles of the homeland was retarded.

Since the eighteenth century in America did not express an independent style of furniture, but was, instead, a mere reflection of European styles of the century, there is no need to discuss the metal of this period in America. However, Wallace Nutting in his book, Furniture of the Pilgrim Country, states: "The best period of wrought iron was not, strangely enough, the seventeenth century, nor even

¹Hunter, op. cit., p. 387.

the early eighteenth century, although we have many remarkable pieces included within these dates from the time of the Revolution to the end of the eighteenth century was the best period."¹

The French style of Louis XV dominates Dutch and Flemish furniture. Dutch power waned early in the eighteenth century and Flanders was practically a French province after 1700.

Few new forms of furniture design appeared in Germany during the eighteenth century. Inlays in the Boulle style were characteristic. The bronze mounted commodes and writing tables found in Germany were actually made in Paris. David Roentgen, born in Germany and trained in France, became famous for his ormolu mounts.

As can be said of America, the styles in Spain and Italy followed European trends. However, unlike European styles, the bed enclosures disappeared and bed posts remained as decoration. Eighteenth century Spanish beds sometimes had wrought iron posts and very elaborate head-decoration. Chairs were covered with fringed velvet or embossed leather held securely with large round-headed nails. On a whole, however, the late eighteenth century classicism of Spain and Italy followed the European trend.

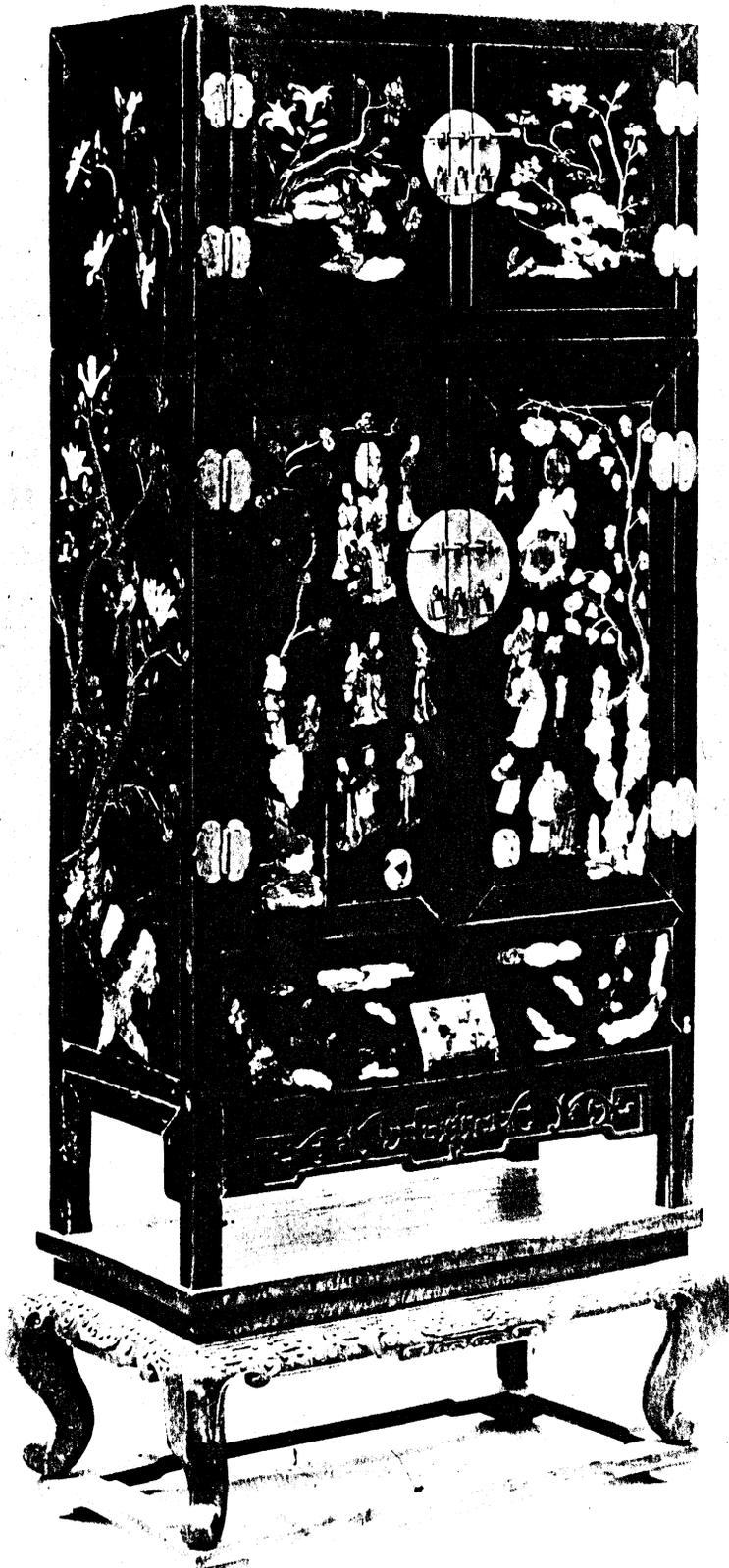
¹Wallace Nutting, Furniture of the Pilgrim Country (Farrington, Mass: Old America Co., 1924), p. 651.

PLATE XXI.

Chinese Cabinet.

Seventeenth and Eighteenth Centuries.

The Metropolitan Museum of Art, New York



Chinese furniture should be studied chiefly for its effect on Baroque and Rococo European styles. In the eighteenth century Chinese motifs were adopted to English and French furniture. This was brought about as a result of the exchange that followed the exploration of China.

Figure XXI shows a teakwood cabinet of the seventeenth and eighteenth century design. Its decoration is of jade and mother-of-pearl trim and metal hinges.

The eighteenth century furniture was characterized at first by excessive and over-elaborate decoration and heavy proportions, but, before the century was over, much of it was simple and in good taste. Furniture styles did not die abruptly. Each designer was influenced by the work of both his predecessors and his contemporaries. All of the designers were affected by contact with the rest of the world.

CHAPTER VI.

NINETEENTH AND TWENTIETH CENTURIES TO 1918.

Napoleon was not especially artistic but he felt the need of impressing the world through the craftsmen of his time who might extol his power. He at once set the artists to creating a new style of art and in turn a new French empire was to achieve the opposite of that of the ancient regime. In comparison it lacked the dignity, originality, and the grace, that the furniture style of the three Louis' possessed.

The Empire style was based on the imperial forms of ancient Greece, Rome and Egypt. The furniture was rectangular massive and excessively ornate. The rectangular simplicity was offset by rich woods and metal mountings. These brass or ormolu mounts were spaced symmetrically on the piece of furniture. Empire mounts were in the designs of: the wreath and laurel branch; the torch; the Napoleonic bee and crown; the winged figures, as emblematic of the liberty Napoleon had gained; of heads of helmeted warriors; and of Phrygian caps, surmounted by lances that had been won as trophies. All of these designs bore historical significant details.

Clifford in his book, Period Furnishings, states:
"Furniture ornament gilded or made of cast brass is not in

PLATE XXII.

Coin Cabinet.

French ca. 1802.

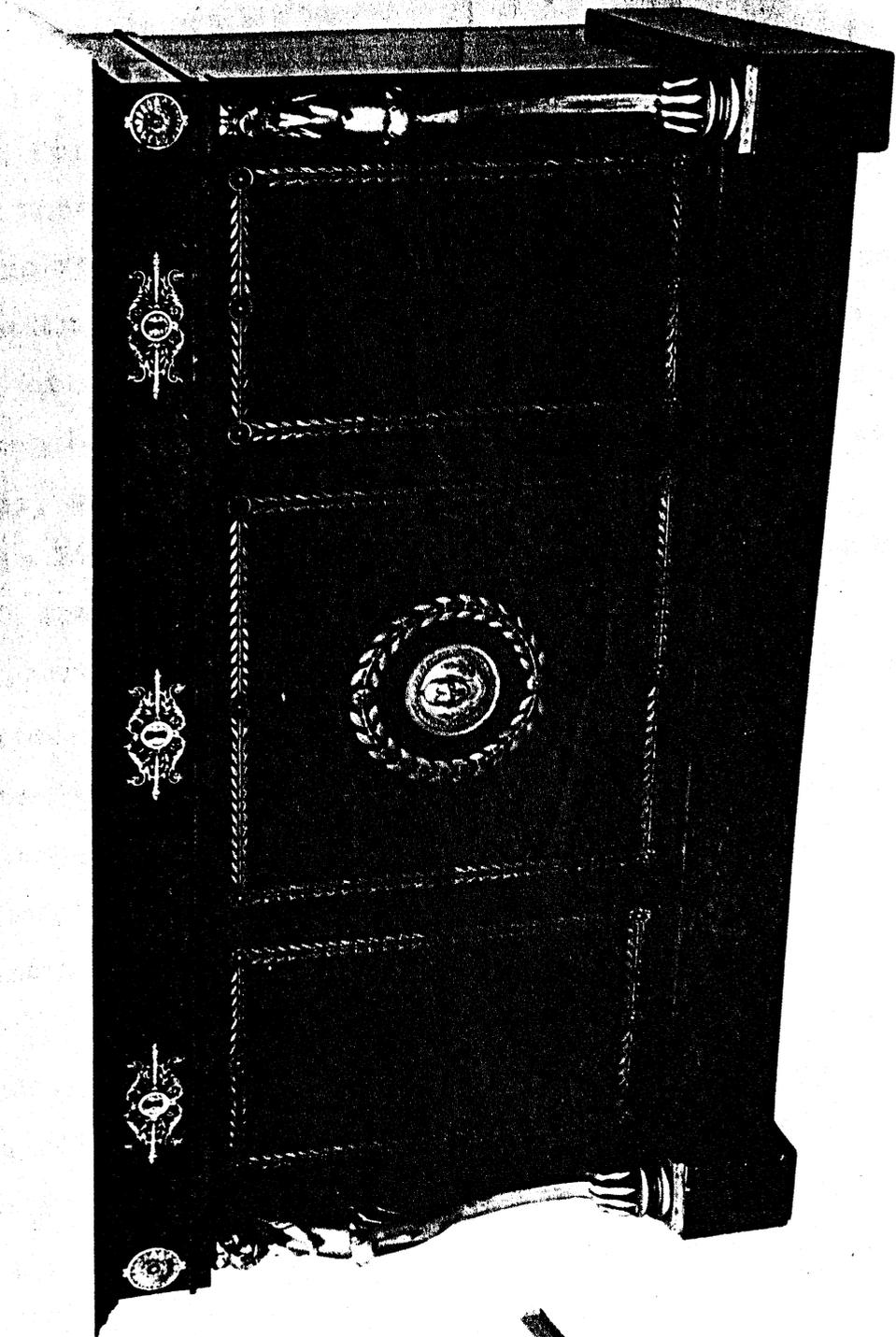
The Metropolitan Museum of Art, New York



PLATE XXIII.

Commode--Empire Period.
Early Nineteenth Century.

The Metropolitan Museum of Art, New York.



itself a positive indication of the Empire period, but classic forms in metal ornamentation denote Empire."¹

The Empire ornamentation was assembled in orderly and oft-repeated forms and was characterized by dignity and pomposity.

Napoleon first made military fame in Egypt. The designers recalled and symbolized his activities by the use of Egyptian patterns as seen in Plate XXII. This is a coin cabinet of mahogany with silver inlays, It is ca. 1802 and of French Empire design. Other Egyptian motifs used were sphinxes, obelisks, cornucopias, winged vultures, and lotus and palm leaves.

The back and seat rails of the Empire period sofas were decorated with brass mounts wherever a sufficient space permitted their use. Typical beds of the period show ormolu rosette-finished head boards and footboards, ornamental mouldings, swan terminal supports, and forms decorated with foliated patera rosettes, conventionalized acanthus, and anthemoin.

Plate XXIII shows an early nineteenth century Empire commode. The empire characteristics are its rectangular structure, side supports consisting of an animal head surmounting a leg and paw foot, and panels outlined in conventionalized laurel branches with a laurel wreath enclosing a

¹Clifford, op. cit., p. 163.

metal medallion. The key plates are in elaborate metal open work design as are also the two disks.

Odiot and Thomire were two ciseleurs of the nineteenth century period. They did much to maintain Gouthiere's art of fine workmanship in metal which was a tradition of the last century.¹ Bronze work detail chiselled in the winged sphinx was typical of their designs.²

Throughout the remainder of the nineteenth century favoritism of styles fluctuated from the Baroque to Empire and back. Empire was most often used and was employed as detail.

In 1895 a new style in furniture was seeing a beginning in France. The first concrete expression of L'Art Nouveau emerged from Henri van de Valde's exhibition in 1894 in Brussels; however, the establishment of this art did not come until his Paris exhibition in 1895. Although Henri van de Velde was "an advocate of functional design", he, nevertheless, confused "the line of force with the peculiar whiplash curve which has come to symbolize L'Art Nouveau". Van de Velde's style, exhibited at the International Exhibition in Paris, 1900, was sensational. The

¹Whiton, op. cit., p. 176.

²Foley, op. cit., Vol. III, p. 288.

extraordinary brilliance of his skill seemingly proved to be Van de Velde's fault. Commercial imitators of varying degrees of skill adopted and treated the typically curved line ad nauseam; its furniture became awkward; its fashion in decorative glass and metal work lived on, but was sterile.¹

The decorations and styles of the French nineteenth century craftsmen were imitated by the artists of all countries. Life on the continent had become more brilliant than ever and the European courts that had followed the styles of the French kings in their furniture also copied the decorative furniture of the Napoleonic era. In spite of the hatred between England and France, the English Empire furniture style was an imitation of the Empire and earlier periods in France.

An English cabinet-maker, named George Smith, published a book in 1826 on upholstering and cabinet-making. He called himself "Upholster and Furniture Draughtsman to His Majesty." His use of Egyptian, Etruscan, Roman, Gothic and Louis XIV styles was typical of the lack of originality of his times.²

¹Aronson, Encyclopedia of Furniture, pp. 129-130.

²Oliver Brackett, An Encyclopedia of English Furniture (New York: R. M. McBride & Co., 1927), p. 13.

English nineteenth century illustrations in Aronson's The Encyclopedia of Furniture picture a mahogany fall front bureau of 1810. The style is of Louis XVI of France but the detail and workmanship is English. The metal decoration includes a metal gallery of pierced design and circular pulls with round metal backgrounds.¹ An English Regency bookcase (1824) shows metal handles in medallion and pear drop styles.²

The Arts and Crafts Movement in England was contemporary with de Velde's Art Nouveau. It continued into the period of contemporary design that followed.

Italy, in the nineteenth century, had less pure Italianism in her furniture than in the preceding years. The Italian Empire style was much the same as that of the French Empire of this same era. The craftsmen used wood in preference to ormolu. Italian Directoire used the ancient themes as did the French Empire but carried them even farther, emphasizing the light grace of Pompeii.³

Spain likewise carried on the French Empire style and followed other foreign forms. Even though the general

¹Aronson, Encyclopedia of Furniture, p. 58.

²Ibid., p. 141.

³Ibid., p. 113.

styles followed those of Europe the design was always rendered in native pattern. The Spanish construction is, without exception, more vigorous and more masculine than foreign patterns.¹

Biedermeier was the German style that imitated the Empire pattern popular in all Europe. Early in the century the designs were classic in form and little use of excessive ornamentation was made. Key plates were small and of simple diamond shapes. Occasionally drawer pulls were found to be of the metal lion head design with ring handles depending from the mouth. In the mid-nineteenth century there was a growing wealth and comfort in Germany that brought on more extravagant furniture style. Ormolu trimmed mahogany furniture in heavy rolled shapes were used. The ormolu designs show Greco-Roman and Pompeian influence.

In 1902 Van de Velde opened a school in Germany under the patronage of the Grand Duke of Weimar and was accepted enthusiastically. Another school, under Josef Olbrich, was organized at Darmstadt. The two schools combined forces in the first ten years of the twentieth century into the Deutscher Werkbund. This organization endeavored to consolidate the active forces in art education and production. Little change in design occurred during the early twentieth

¹Ibid., p. 173.

century but after the World War I the movement toward greater simplicity and functional form found its leaders in Germany. German thought, paralleled by the work of leaders from Austria, produced outstandingly good furniture.¹

The Federal American period of furniture design was existent during the early years of the Republic, 1780-1830. It adopted from England characteristics of design from the antique Pompeian and Greco-Roman through those of Adam, Hepplewhite, Sheraton, and the Regency. From France came the influence of the styles of Louis XIV, Directoire and Empire. Duncan Phyfe, of New York, was the most capable cabinet-maker of this period and the most outstanding figure in Early American furniture design. His earliest works show the influence of English craftsmen; later the influence of the French artists. In his best styles Directoire-Classic influence was predominant just as it was in Sheraton and English Regency. There was an occasional use of brass inlay bandings. Brass or ormolu mounts and handles of chased round shape, or of lion heads with rings suspended from the mouth were appropriately used. Glass knobs, mounted in metal or held in place by a metal

¹ Ibid., p. 130 cit., p. 295.

cord running through and bolted on the inside of the drawer or door, were also used. The characteristic curule (curved) legs of the Duncan Phyfe furniture were often tipped with broad brass ferrules shaped to the legs and standing on casters. The national bird, the eagle, was almost symbolic of the Federal period and was often made as an ornament in brass. Phyfe kept the custom of using brass mounts on furniture more than any other American cabinet-maker.¹

Queen Victoria had no connection with or influence on American Victorian furniture. The style was more directly influenced by Louis Philippe of France than by any Victorian interpretation from England. Hepplewhite and Sheraton designs in the French manner were accepted.² The metal ornamentation of this period included brass and ormolu mounts. These mounts used human head designs. If the key plates were made of metal they were inconspicuous. The American Victorian period lasted until around 1880.³

Very little effort was exerted to create new designs in the years between 1880 and 1900. The period continued to be one of reproductions. The styles included Colonial,

¹Eberlein, op. cit., p. 295.

²Charles O. Cornelius, Early American Furniture (New York: D. Appleton-Century Co., 1926), pp. 241-243.

³Gould, op. cit., p. 248.

French, Eighteenth Century English and Empire. Ash, elm, birch, and other woods were used. The imitation was carried further by staining these woods to look like the mahogany, walnut or rosewood used in the other countries.

This late nineteenth century was the "brass bed epoch." A typical bedroom for a country house of this period was described as being furnished with tall chiffoniers, broad low bureaus, small writing desks, brass bedsteads, and either white iron or tiled wash stands. The drawers in the chiffoniers and bureaus had brass handles or pulls and were usually quite decorative. The wash stands were long, low tables with an undershelf. The upper shelf had a frame work of wood. Iron or brass rods were fitted just under the end edges of the top shelf to serve as towel and sponge racks.¹

The city homes were usually furnished in the heavy Napoleonic styles. American designers took some liberties with the style by relieving the original design of its harshness without disturbing the general forms. Little use of metal was seen. Furniture was covered with leather, tapestry, plush, or the like. Furnishings flamed forth in crimson and scarlet.

¹Marta K. Sironen, A History of American Furniture (New York: The Towse Publishing Co., 1936, P. 76.

In the last decade of the nineteenth century the brass and iron bed business reached its peak. So popular were the metal beds that the manufacturers and dealers in wooden furniture wrote indignant letters to the trade publications condemning them. These metal beds were designed with elaborate scrolls, curiously shaped curves, and pressed floral and conventional decorations. It seemed both reasonable and natural to make such structural frameworks of metal, but as to design, such beds were monstrous creations until later in the next century.¹

The popularity of brass created a competition among designers of all types of metal framework. Following brass and iron beds came the manufacturing of nickel bedsteads. The use of this metal did not attain the popularity that the use of brass and iron did. The finish was found to be too bright and too cold. Silver bedsteads were imported from Germany but they likewise did not gain the approval of the customers. It is interesting to note that in 1898 twin beds of metal were introduced.²

Complete bedroom suites were often made of metal and they sought to imitate the styles of the past. This metal

¹Ibid., p. 81.

²Ibid., p. 83.

furniture was even painted to imitate the grains of wood. They lacked a distinctive style of their own. When finally the metal designers realized that it was not necessary to make their furniture look like its wooden competitor, the design possibilities of this type of furniture began to grow.¹

Mission furniture was straight, simple, solid and styled after the furniture left by the Spanish missionaries in southwestern United States. The Arts and Crafts Movement had reached America from England by the early twentieth century. It appropriated the heavy, home-made air of the mission style and used heavy, square oak. The upholstery was usually of leather and the ornamentation was appliques of hand-hammered copper, large nailheads, or simple cut-out metal patterns. By 1913 this style was extinct; its clumsy weight and lack of charm having condemned it.

Classic patterns of period furniture continued to be in evidence. There were new interpretations of Adam, Sheraton, Hepplewhite and Chippendale. Much of mahogany furniture was shown at the Grand Rapids, Michigan market. Mahogany wood was used in much of the furniture fashioned after the designs of the Louis' and French Empire periods. Brass decoration, peculiar to the Empire style, was used.

¹Paul T. Frankl, Form and Re-Form (New York: Harper Brothers, 1930), p. 141.

While America was still worrying with classic period styles, a modern movement in furniture design was underway in Europe. Many modern pieces were imported but the new mode was slow to receive public acceptance. Not until after World War I was it realized that machine-made, modern furniture harmonized more appropriately with the modern design of skyscraper living than did the reproductions of ancient furniture art.

CHAPTER VII.

TWENTIETH CENTURY (1918 TO CONTEMPORARY).

The art movement that produced modern furniture was of such an international growth, and the work of the designers in all countries had such an expressed similarity, that the furniture styles in the different countries will not be studied separately as in the preceding chapters. While contemporary styles emphasized modern designs, the historical styles continued to be in use. This chapter will give specific attention to the modern movement since historical designs have been covered in the preceding chapters.

Essential materials were not geographically restricted and were marketed on international plans; therefore, no material or process was long restricted to one region. Machines were used to produce objects and forms which could not be made with hand tools. Wood continued to be used besides the countless new materials that had been discovered and invented. The supply of new materials consisted of an improved plywood and of synthetics called bakelite, formica, plastacele and numerous others. These new materials were used in furniture for resistant tops, handles or ornamentation. Such metals as stainless steel, aluminum, chromium-plating, and other metals with new

plating processes were also used. It was the designer's job to find the right forms and uses of these new metals and metal processes.¹

In the development of contemporary furniture, artists worked for originality and untraditional approach. Metal furniture was designed frankly as such. Metal materials were used in the ways natural to themselves rather than in conformity with the uses formerly made of wood.

This forthright attitude has won its way in the world with a success that should be a lesson to manufacturers and designers. It is a right and intelligent use of material, leaving wood exactly where it was before, with all its great beauty and appeal, but proving that metal also has a definite field of service in furniture.²

The furniture designers using metal were interpreters of Louis Sullivan's phrase, "form follows function." Furniture was designed with thought for the materials and new conveniences that served the need of modern living. This furniture was distinctive for its simplicity, directness of purpose and material, absence of ornamentation, and an effort toward simple mass. Furniture was planned to be an integral part of the architecture. The room was no longer thought of in terms of doors and windows, and walls and

¹Aronson, Encyclopedia of Furniture, p. 135.

²Walter Darwin Teague, Design This Day (New York: Harcourt Brace and Co., 1940), p. 78.

ceiling places, but in terms of actual factors essential to human occupancy.¹

The contemporary designers of metal furniture have employed their material to greatest utilitarian advantage and it is because of this that metal chairs are fundamentally different from wooden chairs. Metal was advantageous for its strength and the possibilities in methods of fabrication. The first S chairs (as they were called) were strong and a great elasticity was gained because the seats were cantilevered from the front supports. The metal tube, which comprised the structure of the chair, was continuous, because metal tubing can be fabricated in indefinite lengths. In this type of chair only one joint has to be made and thus the possible weakness of the chair is overcome by reducing the number of joints. Metal can be lighter to handle than wood. There is no limit to the types of design possible with metal. Its indestructible quality gives it a definite appeal. Metals are strong and durable and they can be polished to hold a luster that is always attractive. Metals have lasting qualities that surpass most other materials.² Much of the simplicity of modern metal furniture is due to the fact that

¹Aronson, Encyclopedia of Furniture, p. 133.

²Ray Faulkner et al., Art Today (New York: Henry Holt and Co., 1941), p. 264.

the designer is not compelled to use the familiar stretchers, rungs, braces and supports which are necessary structural parts of wooden pieces.¹

One of the outstanding features of the Dessau Bauhaus program was a reorganization of the contemporary interior. "Experimental handiwork in the Bauhaus shops led to articles of industry which were produced all over the world: lighting fixtures, carpets, fabrics, and the famous tubular steel furniture. Manufacturers in neighboring countries began to seek Bauhaus trained supervisors of their production."²

Marcel Breuer completed the first steel chair in 1928 at the Bauhaus in Dessau. Although chairs had been made of cast or wrought metal in the earlier times, Breuer's design was the first use of machine-made tubular steel as a material for new design. From this time on the production of tubular steel furniture took on tremendous proportions. Its influence on many other interior designs was seen. Designers and technicians from all countries came to the Bauhaus to study the developments of their designs. Breuer combined tubular steel with fabrics, wood and plywood.³

¹Elinor Hillyer, "Fashions in Furniture," Arts and Decoration, January, 1934, p. 23.

²Sigfried Giedion, Space Time and Architecture (Cambridge: The Harvard University Press, 1943), p. 399.

³Herbert Bayer et al., Bauhaus 1919-1928 (New York: The Museum of Modern Art, 1938), pp. 128, 134.

FIGURE XXIV.

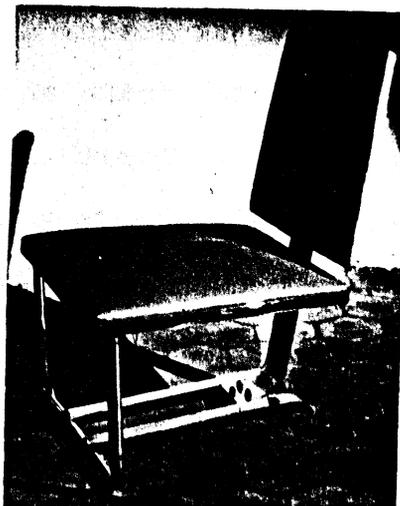
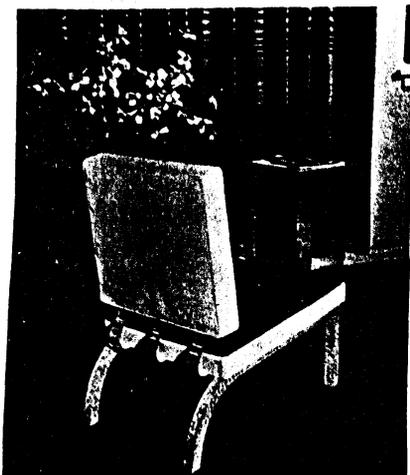
Modern Chairs.

Figure .1. Percival Goodman, Designer.

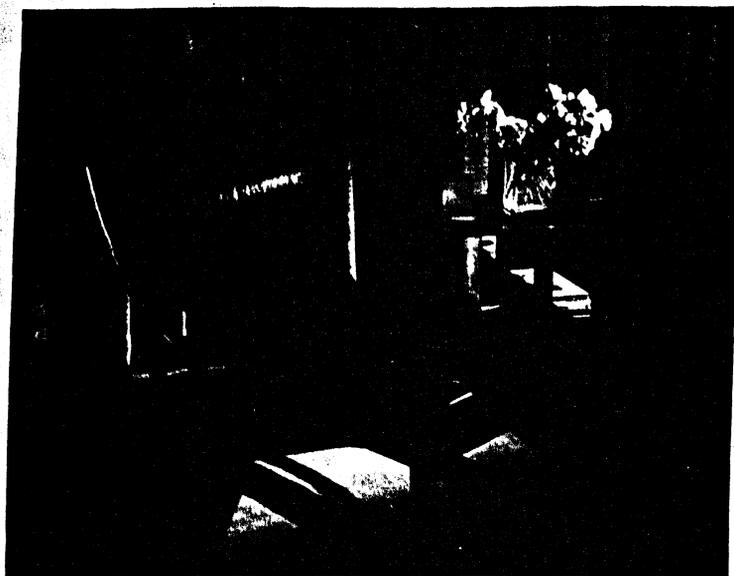
Figure 2. Percival Goodman, Designer.

Figure 3. Le Corbusier, Designer.

1. Arts and Dedoration, January, 1934, p. 22.
2. Arts and Decoration, January, 1934, p. 22.
3. Arts and Decoration, January, 1934, p. 33.



2.



3.

The next important design in modern furniture was the use of the spring quality of bent steel legs. Ludwig Mies van der Rohe was the designer. "Mies van der Rohe's design for a tubular steel chair is a classical solution of the form demanded by the material in relation to the function--a structure taking full advantage of the possibilities of the material--its strength and elasticity--and entirely emancipated from the concepts of wooden furniture."¹ He was both an architect and a designer. His early training as a designer of furniture gave him an appreciation for fine craftsmanship and carefully fashioned detail which he carried over in his treatment of the house.

LeCorbusier (Pierre Edouard Jeanneret) was an outstanding French-Swiss architect. He approached his furniture designs as he did his plans for houses, from the viewpoint of their adaptability to the needs of modern living. His reclining chair (Plate XXIV, Figure 3) points out the changing living habits of the twentieth century that exerted an influence on all design. The chair is of tubular steel and blue leather.²

¹Herbert Read, Art and Industry (New York: Harcourt Brace and Co., 1938), p. 106.

²Eliot F. Noyes, Organic Design in Home Furnishings (New York: Museum of Modern Art, 1941), p. 7.

PLATE XXV.

Conservatory, Joseph Urban, Designer.

The Metropolitan Museum of Art, New York.

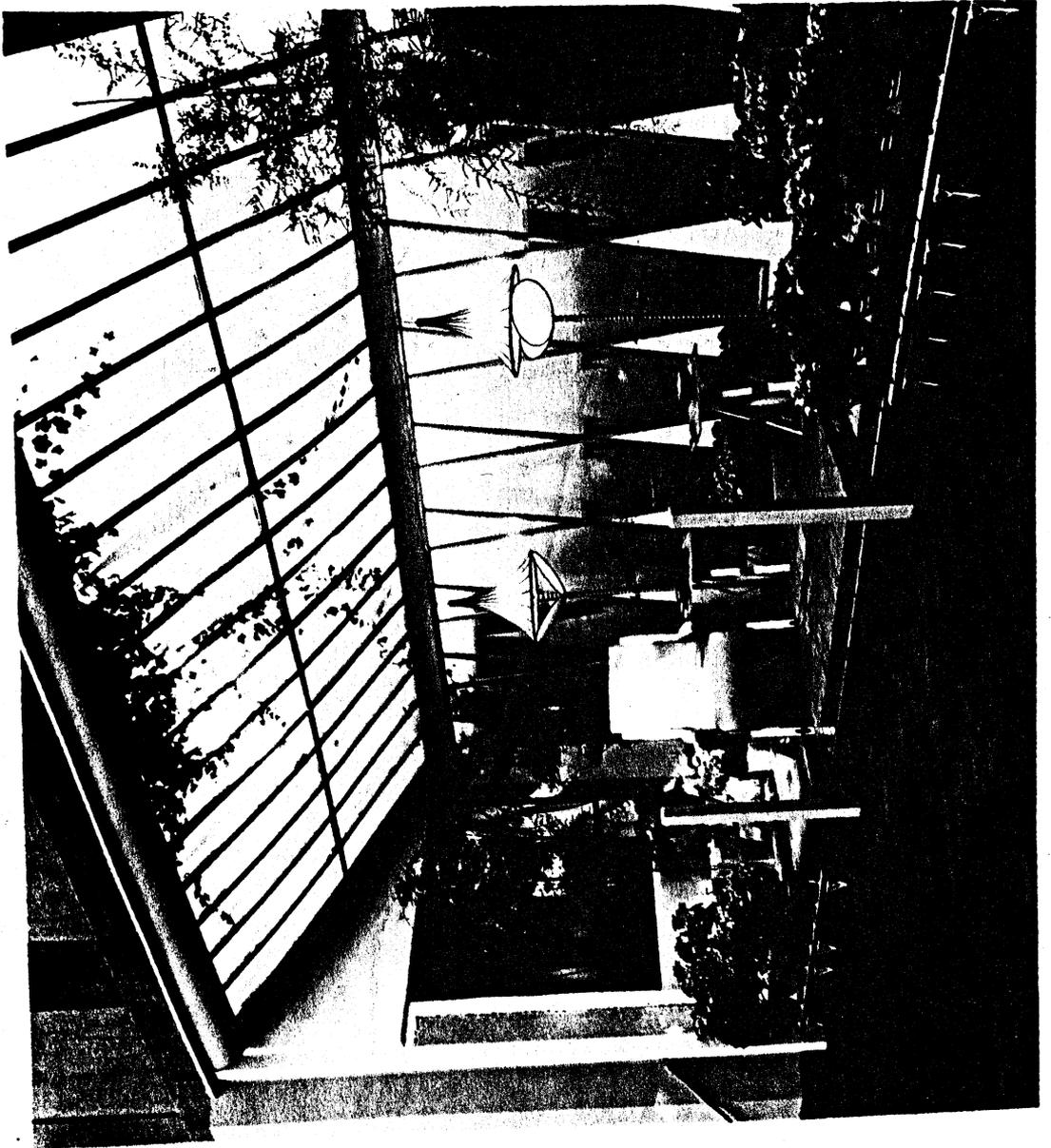


PLATE XXVI.

Dining Room.

Donald Deskey, Designer.

The Metropolitan Museum of Art, New York

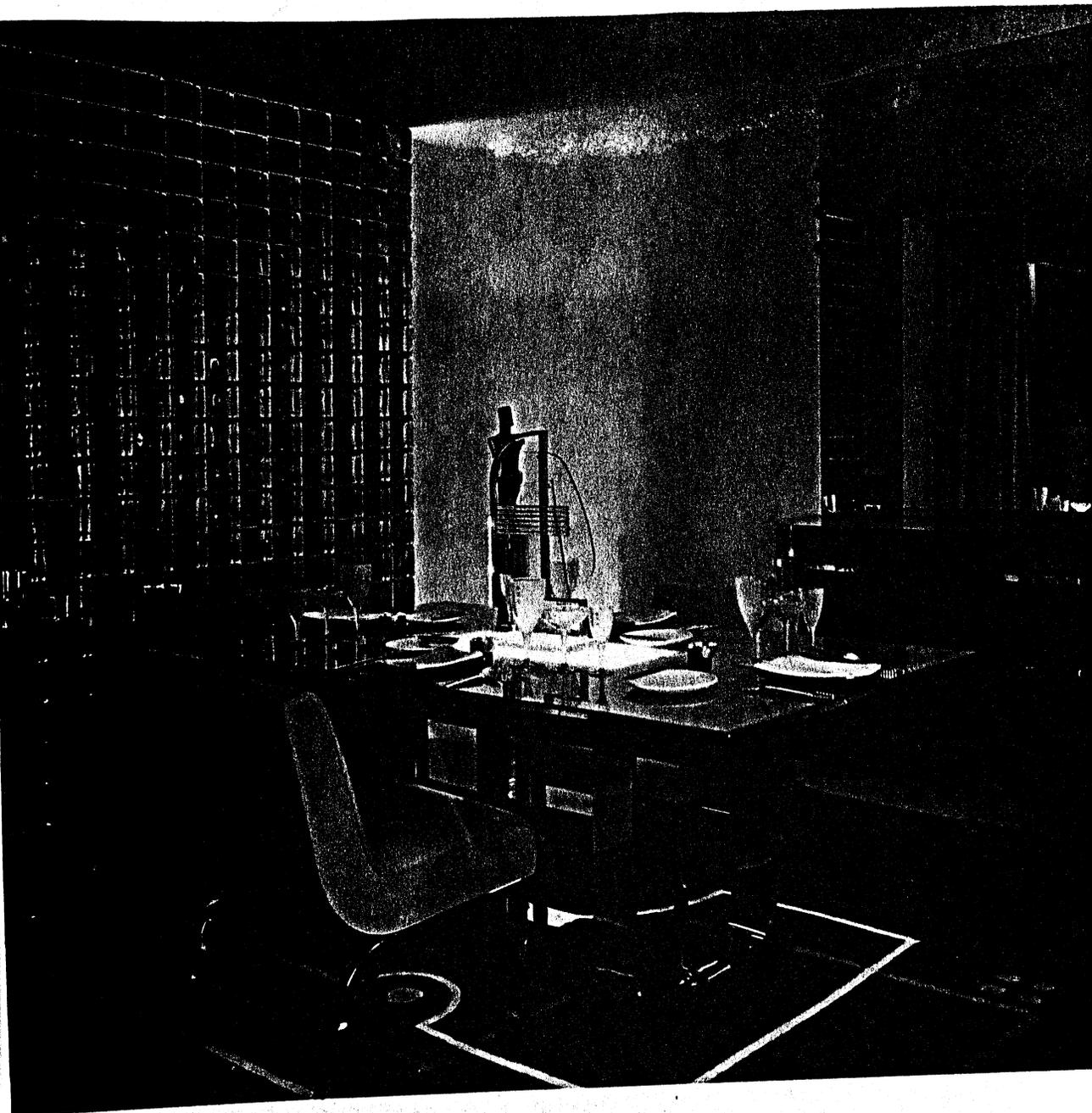
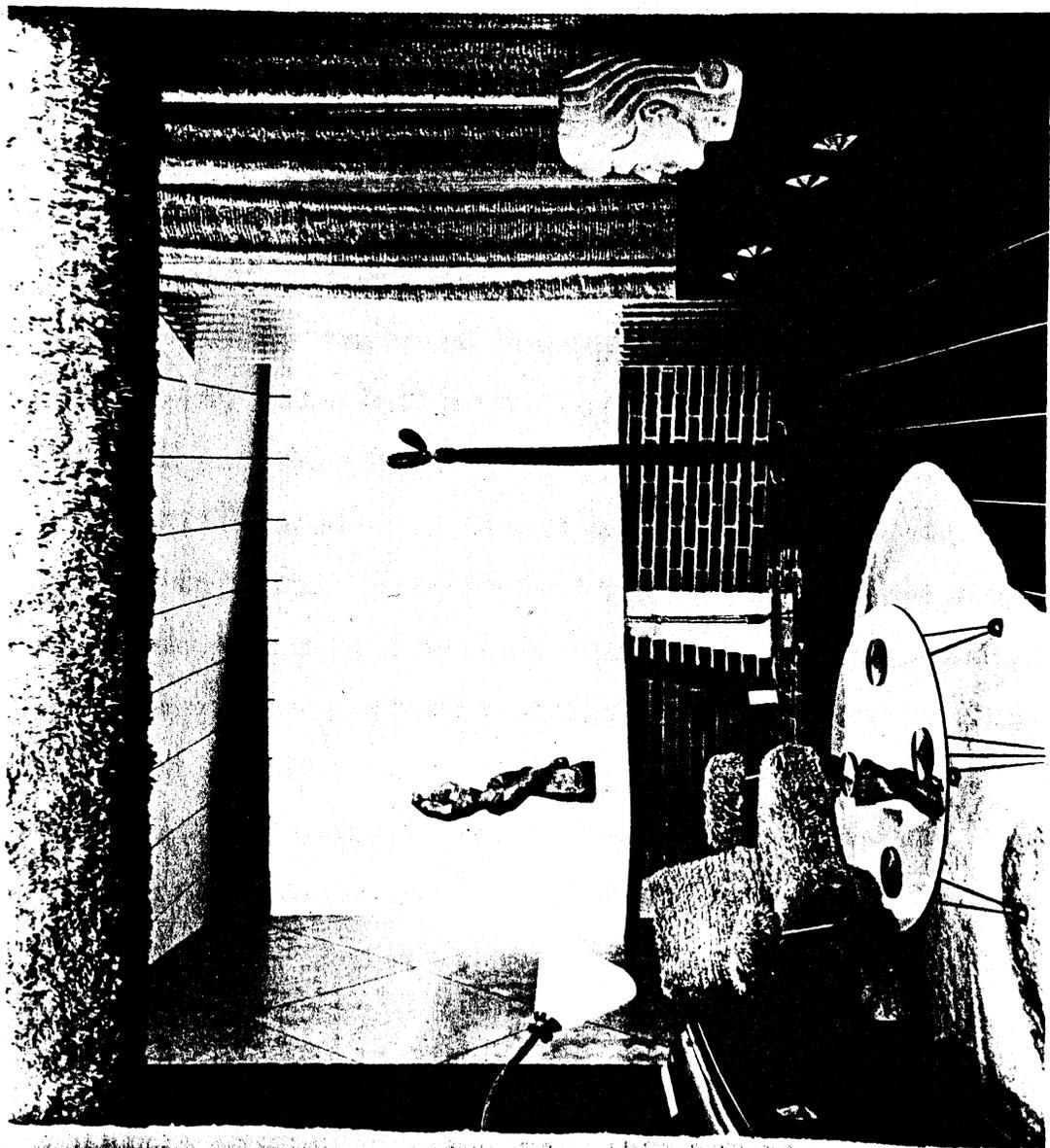


PLATE XXVII.

Living Room.

Gilbert Rohde, Designer.

The Metropolitan Museum of Art, New York.



The other chairs, Figure 1 and Figure 2, illustrated on Plate XXIV were designed by Percival Goodman. Figure 1 shows metal, wood and leather used together. The three metal springs add to comfort and become part of the design and the structure. Figure 2 is a chair whose design would be impossible in wood but logical in metal. The chair is of bumper steel and leather upholstery.

Other European designers who came to the United States and were influential in the modern trend were Hoffman and Kachinsky. Wolfgang Hoffman was educated in an architectural school in Vienna and came to the United States in 1925. His large, sturdy, heavy pieces show his Austrian training. Metal combined with fabric upholstery was one of his preferred mediums.¹ Alexander Kachinsky was born in Russia, studied in Paris and Switzerland, and came to the United States in 1924. Since then he has taught, worked in stage design, automobile design, and has done his best designing for furniture using metal, wood, leather, and fabric.²

Paul Frankl was one of the first American modern designers of furniture. His furniture, in 1928, was built

¹Sironen, op. cit., p. 141.

²Ibid., p. 143.

along the lines of skyscraper architecture--the name given to his particular style. This unique style was built in vertical lines and rectangular cabinets. The baseband on some of the cabinets was of rolled, nickel-plated steel. Frankl was a follower of Frank Lloyd Wright, the greatest of American architects.

Plate XXV shows a conservatory designed by Joseph Urban in 1929. He came to the United States in 1911 and was among the oldest and best known designers in America. He was awarded decorations from Paris, Venice, Germany, Austria and the United States. The heaviness and massiveness of his furniture indicate his Austrian background.

Donald Deskey worked in New York in 1926 for Joseph Urban and Paul Frankl. His show window designs, in which he used corrugated and galvanized iron, copper, and brass, were but an introduction to his furniture design combining metal with such materials as cork, linoleum, woods and pigskin. Plate XXVI is of a dining room designed in 1935 by Deskey.

Gilbert Rhode, not only exhibited industrial designs in 1929 at the Newark, Brooklyn, Philadelphia and Metropolitan Museums, but his designs in modern trends were also used at the Bauhaus in Germany. The Design for Living House, at the Chicago Century of Progress, in 1933, was decorated

by Rhode. He was one of the first designers to produce good tables using bakelite tops and chromium legs.¹ Plate XXVII shows a 1940 living room by Rhode exhibited at the Metropolitan Museum. Here metal is used with wood, glass and fabric.

The designers studied in this chapter represent only a few of those who worked with materials that science and the machine age afforded them. They developed a style that differed basically from all that went before--a style that was the expression of metal and machine processing. Modern furniture must be judged by its form, line, and texture, all influenced by the technological developments of the times.

¹Ibid., p. 140.

CHAPTER VIII

CONCLUSION

From this study it has been found that metal has a long history in furniture design. The ancients used bronze, iron, silver, and gold. Ancient furniture shows the fine craftsmanship and skill in the use of metal both for structure and for ornamentation. An extensive use was made of metal in the Gothic period. Here wrought iron became an accessory to wood to add reinforcement. The use was both structural and ornamental. In the sixteenth, seventeenth, and eighteenth centuries, various metals were used principally as ornamentation on furniture. The late nineteenth century and the first twenty years of the present century entertained a marked vogue for metal constructed furniture. This period lacked a distinctive style of its own since artists continued to use traditional designs.

It has remained for the contemporary designers to set a different evaluation upon metal and to use it extensively. A new simplicity in furniture design has evolved out of the new materials that science and the machine age have brought about.

A After gaining momentum slowly for the better part of a generation, this new craftsmanship of the Machine Age is practiced now by most of the alert and young-minded workers in Europe and America--architects, engineers, designers--who are attempting to devise forms to fit the functional needs of our times more exactly than any we inherited from the past.¹

¹Teague, op. cit., p. 52

Metal furniture, designed in entirely new forms and in styles natural to itself, has won its way by a functional use of the material.

Metal furniture is playing a tremendous part in our war effort. A large part of the furniture used on combat vessels is constructed of metal. It was found that under adverse weather conditions the glued joints of wooden furniture would not continue to adhere. Atmospheric conditions do not affect steel. It is also known that steel furniture greatly reduces fire risks. This is but a small part that metal has played in war. Modern machine age plants have been converted from peacetime production of furniture to fulltime production of war materials. In the field of furniture design in post-war days, metal promises to be more familiar to the craftsmen and designers who already have been convinced of its functional value.

BIBLIOGRAPHY

BOOKS:

- Aronson, Joseph. The Book of Furniture and Decoration. New York: Crown Publishers, 1941.
- _____. The Encyclopedia of Furniture. New York: Crown Publishers, 1938.
- Bayer, H., Gropius, W., and Gropius, I., (eds.). Bauhaus 1918-1928. New York: Museum of Modern Art, 1938.
- Brackett, Oliver. An Encyclopedia of English Furniture. New York: Robert McBride and Co., 1937.
- Burris-Meyer, Elizabeth. Decorating Livable Homes. New York: Prentice-Hall, Inc., 1937.
- Byne, Arthur and Stapley, Mildred. Spanish Interiors and Furniture. Vol. II. New York: William Helburn, Inc., 1937.
- Cescinsky, Herbert and Hunter, George Leland. English and American Furniture. Grand Rapids: The Dean Hicks Co., 1929.
- Clifford, G. R. Period Furnishings, An Encyclopedia of Historic Decorations and Furnishings. New York: Clifford and Lawton, 1927.
- Cornelius, Charles O. Early American Furniture. New York: D. Appleton-Century Co., 1926.
- _____. Furniture and Masterpieces of Duncan Phyfe. Garden City: Doubleday, Doran Co., 1928.
- de Bles, Arthur. Genuine Antique Furniture. New York: Thomas Y. Crowell Co., 1929.
- Eberlein, Harold Donaldson and McClure, Abbot. The Practical Book of Period Furniture. Philadelphia: J. B. Lippincott Co., 1914.
- Eberlein, Harold Donaldson and Ramsdell, Roger Wearne. The Practical Book of Italian, Spanish and Portuguese Furniture. Philadelphia: J. B. Lippincott Co., 1927.

- Faulkner, R., Ziegfeld, E., and Hill, G. Art Today. New York: Henry Holt and Co., 1941/2.
- Frankl, Paul. Form and Reform. New York: Harper and Brothers, 1930.
- _____. New Dimensions. New York: Brewer and Warren, Inc., 1928.
- Foley, Edwin. The Book of Decorative Furniture, Vol. I. New York: G. P. Putnam's Sons, 1911.
- _____. The Book of Decorative Furniture, Vol. II. New York: G. P. Putnam's Sons, 1912.
- Fry, Roger, et. al. Georgian Art. London: S. T. Batsford, Ltd., 1929.
- Gardner, Helen. Art through the Ages. New York: Harcourt, Brace and Co., 1936.
- Garside, Joshua T. Old English Furniture. London: B. T. Batsford, Ltd., 1924.
- Geddes, Norman Bel. Horizons. Boston: Little, Brown and Co., 1932.
- Genauer, Emily. Modern Interiors Today and Tomorrow. New York: Illustrated Editions Co., Inc., 1939.
- Gideon, Sigfried. Space, Time and Architecture. Cambridge: The Harvard University Press, 1943.
- Gilman, Roger. Great Styles of Interior Architecture. New York: Harper and Brothers, 1924.
- Gloag, John. Time Taste and Furniture. New York: Frederick A. Stokes Co., 1925.
- Gould, Mr. and Mrs. G. Glen. The Period Furniture Handbook. New York: Dodd-Mead and Co., 1928.
- Groneman, Chris Harold. Bent Tubular Furniture. Milwaukee: The Bruce Publishing Co., 1941.
- Hourticq, Louis. Harper's Encyclopedia of Furniture, Vol. I. Harper and Brothers, 1937.

- Hasluck, Paul N. Metal Working. New York: Cassell and Co., 1914.
- Hayden, Arthur. Chats on Old Furniture. London: T. Fisher Unwin, 1913.
- Hoffman, Herbert. Modern Interiors. New York: William Edwin Rudge, 1930.
- Hunter, George Leland. Decorative Furniture. Grand Rapids: The Dean Hicks Co., 1923.
- Kahle, Katherine Morrison. Modern French Interiors. New York: Knickerbocker Press, 1930.
- Lamb, Winifred. Greek and Roman Bronzes. London: Methuen and Co., Ltd. 1929.
- Machine Art. New York: Museum of Modern Art, 1934.
- Maryon, Herbert. Metal Work and Enameling. London: Chapman and Hall, 1923.
- Noyes, Eliot F. Organic Design in Home Furnishings. New York: Museum of Modern Art, 1941.
- Nutting, Wallace. Furniture of the Pilgrim Country. Farmington, Mass.: Old America Co., 1924.
- _____. Furniture Treasury, Vol. III. Farmington, Mass.: Old America Co., 1924.
- Ransom, Caroline L. Studies in Ancient Furniture. Chicago: University of Chicago Press, 1905.
- Read, Herbert. Arts and Industry. New York: Harcourt, Brace and Co., 1938.
- Richter, Gisela M. A. Greek, Etruscan, and Roman Bronzes. New York: The Gilliss Press, 1915.
- Rogers, John C. English Furniture. New York: Charles Scribner's Sons, 1923.
- Ross, Sir^{RE} Denison (ed.). The Art of Egypt through the Ages. London: The Studio, 1931.

- Schmitz, Dr. Hermann. The Encyclopedia of Furniture. New York: E. Weyhe, 1926.
- Singleton, Esther. The Collecting of Antiques. New York: Macmillan Co., 1937.
- Sironen, Marta K. A History of American Furniture. New York: The Towse Publishing Co., 1936.
- Speltz, Alexander. Styles of Ornament. New York: E. Weyhe, 1910.
- Storey, Walter Rendell. Period Influence in Interior Decoration. New York: Harper and Brothers, 1937.
- Strange, Thomas Arthur. An Historical Guide to French Furniture, Decoration During the Seventeenth and Eighteenth Centuries. London: McCorquodale and Co., 1903.
- Swarbrick, J. Robert Adam and His Brothers. London: B. T. Batsford, Ltd., 1915.
- Teague, Walter Dorwin. Design This Day. New York: Harcourt, Brace and Co., 1940.
- Varnum, William H. Creative Design in Furniture. Peoria, Illinois: The Manual Arts Press, 1937.
- Whiton, Sherrill. Elements of Interior Decoration. New York: J. B. Lippincott Co., 1937.
- Wilson, H. Silverwork and Jewellery. London: Sir Isaac Pitman and Sons, 1931.

ARTICLES:

- Allen, Philip Meredith. "Old Iron," The Antiquarian, March, 1927, pp. 42-46.
- Bailey, Major C.T. P. "Treasure Chests," Connoisseur, May, 1926, pp. 16-18.
- Collin, Bertha M. "The Development of Portuguese Furniture," International Studio, July, 1930, pp. 39-43.

Encyclopedia Britannica. 14th ed. Vol. III, p. 693.

Encyclopedia Britannica. 14th ed. Vol. XII, p. 677.

Gauchat, Nadine, "A Royal Desk of Oeben and Riesener,"
International Studio, February, 1931, pp. 47-48.

Gloag, John. "Wood or Metal?" Creative Art, January, 1939,
pp. 49-50.

Kissell, Mary Lois. "Medieval Craftsmen of the North,"
International Studio, November, 1928, pp. 43-47.

Ward, J. D. A. "Old English Wine Furniture," Arts and
Decoration, April, 1941, pp. 22-23.

Wenham, Edward. "Commodes of the Louis and Georgian
Periods," Arts and Decoration, November, 1929,
pp. 56-57, 96.

Wolfe, A. T. "The Story of Regency Furniture," House and
Garden, September, 1923, pp. 53, 120.

CATALOGUES:

Catalogue of the John L. Severance Collection, The Cleveland
Museum of Art, 1942.

Keeler Brass Co., Grand Rapids, Michigan. Catalog No. 30.

UNPUBLISHED MATERIAL:

Sutherland, William. Director, The Isabella Stewart Gardner
Museum, Fenway Court, Boston, July 8, 1943. Personal
letter to writer.