

The Metropolitan
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Bulletin Summer 1991





ARMS
&
ARMOR
FROM THE PERMANENT COLLECTION

HELMUT NICKEL

THE METROPOLITAN MUSEUM
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DIRECTOR'S NOTE

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NEW PHOTOGRAPHY OF MMA OBJECTS BY OI-CHEONG LEE OF
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Photographs on page 23 by courtesy of the Board of Trustees of the Victoria and Albert Museum, London.

Front cover: Armor of Henry II of France, design attributed to Etienne Delaune, French (possibly Paris), ca. 1555

Inside front cover: Detail from the backplate of the Henry II armor illustrated on front cover

Arms and armor have been integral to the collections of the Metropolitan Museum since it was established in 1870. Two of the earliest elective Trustees, William H. Riggs and Rutherford Stuyvesant, were dedicated to this specialized field, and over the years objects from their collections have been displayed in the arms and armor galleries. In 1896 the Metropolitan received its first substantial gift of 166 pieces from the estate of John Stoneacre Ellis. Fourteen years later the purchase of the entire Duc de Dino collection, formed in Paris from 1880 to 1900, brought our holdings up to a position of international importance.

The arrival of the de Dino pieces called for greater resident curatorial expertise, and in 1906 Bashford Dean (1867-1928) was appointed honorary curator of arms and armor. A zoologist, teacher, and curator of fishes at the American Museum of Natural History, as well as a collector of arms and armor, Dean brought to the job a scientific mind and a passionate enthusiasm. For more than twenty years, he acquired objects, cultivated donors, arranged exhibitions, and wrote handbooks, catalogues, and innumerable articles. Dean's enthusiasm was infectious, and other art museums, such as those at Cleveland and St. Louis, expanded their holdings to include arms and armor. The great private collections formed by William Randolph Hearst, George F. Harding, and C. O. von Kienbusch, now wholly or in part in the museums at Detroit, Chicago, and Philadelphia, also owe much to Dean's example.

In 1912 the Trustees voted to make the collection of arms and armor, until then part of the Department of Decorative Arts, a separate department, and Dean was named curator. Three years later the Museum opened its first full-scale installation, which included approximately 2000 objects given by William H. Riggs in 1913 and galleries for Japanese and other Asian and Islamic arms.

While the Museum's outstanding collection of European arms and armor is well known, many visitors may not be aware that we possess the finest and most comprehensive Japanese holdings outside of Japan. Their breadth and quality are again owed to Bashford Dean, who acquired pieces while working in Japan developing fish hatcheries from 1900 to 1905. Americans were among the first to look toward Japan with its tradition of aestheticism, and aside from Dean, benefactors such as H.O. Havemeyer and Howard Mansfield have also added to the preeminence of our collection.

Since its establishment, the department's holdings have grown to include approximately 14,000 objects of European, American, Asian,

and Islamic origin, ranging from the fifth through the nineteenth century. Bashford Dean's superb Japanese collection was acquired by purchase in 1914, and the best of his European objects came to the Museum through his bequest in 1928 and gifts and purchases in 1929. Glorious armors from Trustee Clarence Mackay's fabled collection were purchased during the depths of the Depression, and in 1942, an additional several hundred Mackay pieces were presented to the Museum by Stephen V. Grancsay, Dean's assistant and successor. Four thousand Asian and Islamic objects were bequeathed to the Museum by George C. Stone in 1935. The Museum continues to collect in the field of arms and armor. Among the notable recent acquisitions illustrated in the *Bulletin* are two splendid French firearms, the very early flintlock hunting gun that belonged to Louis XIII of France and the sumptuously decorated Rococo gun by Louis Jaley—both acquired through the Harris Brisbane Dick and Rogers Funds—and the stunning Hispano-Moresque helmet, acquired through the generosity of The Vincent Astor Foundation.

In November the Metropolitan will open its new arms and armor galleries. A highlight of the renovation will be the first major installation in over fifty years of objects from our renowned Japanese collection. Other galleries will be devoted to European parade and tournament armor, European edged weapons and firearms, Islamic arms and armor, and American arms. The renovation will retain the architectural integrity of the handsome Pierpont Morgan Wing, which opened in 1910 and has housed arms and armor since 1956. Many staff members worked long and diligently to give this distinguished collection, at last, the presentation it deserves. We are very grateful to Stuart W. Pyhrr, curator of arms and armor, and to all of his co-workers in the department, Donald LaRocca, Morihiro Ogawa, and Marie Koestler, and to members of the Armor Shop, Robert Carroll, armorer, Theodore Monnich, and Ann Willard, for their unstinting efforts during this complex undertaking.

This *Bulletin*, written by Helmut Nickel, curator emeritus of the Department of Arms and Armor, sets forth a rich variety of objects in a handsomely illustrated and informative survey. We hope that it will serve as an enticement to visit the galleries in the fall and join us in welcoming back—after a long hiatus—the collection that has been one of the most memorable Museum experiences for visitors of all ages.

Philippe de Montebello
Director



Page from an illustrated manuscript tournament book, Nuremberg, after 1561

From the beginning arms and art were essential elements in the life of mankind. Weapons for the hunt, such as spears, throwing clubs, and bows and arrows, were necessary tools in the daily struggle for survival. Art seems to have begun primarily as hunting magic. By painting images of game animals on cave walls and carving them on spear-throwers and arrow straighteners, hunters attempted to use supernatural means to secure an abundant supply of meat and hides for food and clothing. The struggle for survival must have included fights with spear and club against rival human groups for control of life-supporting hunting grounds.

Since arms were literally a matter of life and death, either as weapons designed to kill or as armor designed to protect from harm, it was crucial that they were constructed for maximum effect and with the greatest technical efficiency; in many cases this process resulted in functional beauty. To further enhance the aesthetic and ideological values of arms—and not least to emphasize their significance as status symbols—arms of all periods were embellished with a wide range of designs and in every technique known to the decorative arts.

In classical antiquity the patron deity of the arts was Pallas Athena, who was represented as helmeted, armored, and carrying a shield and a spear. Athena's weapons were of supernatural origin: she was born fully armed from the brow of Zeus. Significantly, there was one among the Olympian gods who worked with his hands at a human craft, the divine smith, Hephaestos—known as Vulcan to the Romans—who not only created dazzling jewelry for the goddesses but also manufactured impenetrable and splendidly decorated armor for the god of war, Ares, or Mars, as well as for the mortal hero Achilles.

In the *Iliad* Homer describes the shield of Achilles, wrought as a mirror of the world “in imperishable bronze, some tin, and precious gold and silver.” When Mycenae was excavated in 1875 by Heinrich Schliemann, he found in its shaft graves swords and daggers decorated with superb multicolored inlays in the technique vividly described by Homer and of such artistic finesse that they would have met with the approval of even Hephaestos.

Under the influence of Christianity, during the so-called Dark Ages, the divine craftsman was transformed into a human figure, the legendary Wayland the Smith, who worked in gold as well as in steel, fashioning

jewels so temptingly beautiful as to sway the virtue of princesses, and forging sword blades—painstakingly wrought from cunningly interwoven strands of iron and steel—that were sharp enough to cut tufts of wool drifting in a stream. The craft of the smith was believed to hold a powerful magic, and the images of even the greatest of Celtic or Germanic heroes, such as Cuchulain and Siegfried, were enhanced by the fact that they were apprenticed to smiths.

For centuries master craftsmen remained nameless, but when awakening artistic self-esteem in the Renaissance let artists step out of the shadows of anonymity, the greatest names, such as Leonardo da Vinci, Hans Holbein, Albrecht Dürer, and Benvenuto Cellini, were found quite matter-of-factly among those of designers and manufacturers of arms.



The Crossbow Maker



The Gunstock Maker

Because of their value as trophies, not only for their commemoration of heroic deeds but also for their artistic merit, arms were among the earliest recorded “collectors’ items”: Homer’s Ajax and Odysseus quarreled over the arms of the dead Achilles; Greek city-states deposited trophy arms at the sacred precinct of Olympia. In a similar way practically all well-preserved medieval arms have come down to us either as parts of cathedral treasures, such as the helmet of Saint Wenceslas and the sword of Saint Stephen at the cathedral of Saint Vitus in Prague, or as reverently kept funeral trappings, such as the helmet and shield of Edward, the Black Prince (1330–1376), at Canterbury.

The collecting of arms is often nostalgic in character. One of the earliest systematic collectors was King Charles VIII of France (r. 1483–98), whose Salle d’armes at Amboise was purported to contain the sword of Lancelot,

the battle ax of the Frankish king Clovis, and (somewhat more credibly) the sword of Joan of Arc. Emperor Maximilian I (r. 1493–1519), fittingly known as “the last of the knights,” was an armor enthusiast who collected arms explicitly *zum gedächtnuss* (as memorials), and his descendants, Emperor Charles V (r. 1519–56) and King Philip II of Spain (r. 1556–98), and particularly Archduke Ferdinand of Austria and the Tyrol (1529–1595), shared this family connoisseurship of fine armor. Archduke Ferdinand brought together in his Heldenrüstkammer (Armory of Heroes), at Castle Ambras near Innsbruck, a vast array of armor and weapons from known owners—of former generations as well as his contemporaries. His collection, which is now the nucleus of the unsurpassed Hofjagd- und Rüstkammer (Court Hunting and Armor Collection) at Vienna, was the first to be



The Sword Cutler



The Mail Maker

documented and made accessible to the public by a fully illustrated catalogue published in 1601.

Princely armories, such as those of the Hapsburg emperors at Vienna, the kings of Spain at Madrid, the kings of England at the Tower of London, the kings of Sweden at Stockholm, and the dukes of Saxony at Dresden, by their very nature contain arms of the highest historical as well as artistic significance, but civic pride has preserved, as memorials to deeds of fame, the surviving arsenals of cities: at Bern, Basel, Geneva, Solothurn, and Zurich, in Switzerland; at Venice and Florence, in Italy; at Vienna and Graz, in Austria; and at Munich, Bernau, and Emden, in Germany.

The first museum of arms and armor established on modern scientific precepts of typology and chronology was—as might be expected from the

Age of Reason—the Dépôt de Modèles d'Armes et d'Autres Machines de Guerre, now the Musée de l'Armée, Paris, founded in 1796. The Dépôt was set up for the purpose of military instruction, and most European states followed suit, establishing their own army museums.

Although private collectors of the nineteenth century were free to indulge in knights-in-shining-armor romanticism, in the museum world, collecting, influenced by the natural sciences, followed methodological principles. It is significant that the latest and most encyclopedic of the great collections of arms and armor, that of The Metropolitan Museum of Art, became the first specialized department of the Museum in 1912, and was headed by a zoologist, Bashford Dean.

As part of a museum of art, the department collects arms of artistic value of all civilizations, from all parts of the world, and of all periods, from the Fall of Rome (earlier arms are the domain of archaeological departments) to the present. Although strictly military arms, mass-produced after the establishment of standing armies in the late seventeenth century, are left to the historical and military museums, expertise in historical arms can be of great value even in modern times. For example, during World War II the flak jacket and the steel helmet of the U.S. Army were created following designs and recommendations by the staff of the Arms and Armor Department.



*The Armorer. From a series of woodcuts
from *Stände und Handwerker*, by Jost Amman,
Frankfurt am Main, 1568*

ARMS OF THE WESTERN MIGRATIONS



Spangenhelm, said to have been found in the Saône River, France, Ostrogothic, sixth century

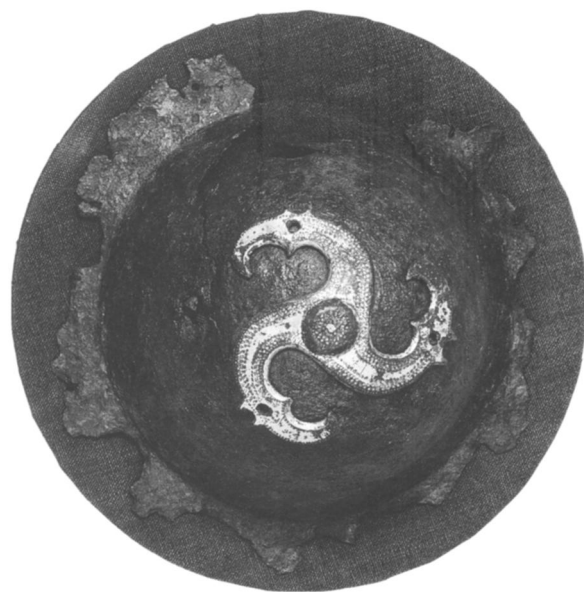


Shield boss, Late Roman, second half of the fourth century A.D.

These objects, from the period of the great migrations that hastened the fall of Rome, are among the oldest in our collections.

Helmets of the migrating Germanic tribes, the so-called barbarians, were of the *Spangenhelm* type, constructed of iron plates fitted into a framework of bronze or iron straps (*Spangen*). These helmets were a translation into metal of the felt caps of the steppe nomads who had infiltrated eastern Europe for centuries and, with the arrival of the Huns in 375, set the migration in motion. Eastern Germanic tribes, such as the Goths, adopted the horse culture of their nomad neighbors, including its arms and equipment. The Museum's *Spangenhelm* (see page 9) was found in France, but it is one of a distinctive group that evidently came from a common workshop, possibly the court armory of the Ostrogothic kings at Ravenna, who would have sent these helmets to allied princes as diplomatic presents.

The round wooden shields of the barbarian warriors had a central grip covered by an iron shield boss to protect the holding hand.



Langobardic shield boss, seventh century

Painted shield surfaces and applied ornaments on the shield bosses served as tribal and personal marks of identification. The Germanic people who succeeded the Ostrogoths in Italy during the late sixth century were the Langobards. Of the two Langobardic shield bosses shown here, one bears a gilt-bronze mounting of three griffins' heads (opposite, bottom), an ornament derived from the animal style of the steppe nomads with whom the Langobards came in contact during their trek through what is now Hungary. The cruciform appliqué on the other boss (below) indicates that its owner was a Christian. The third shield boss, with an overlay of gilt sheet silver studded with glass cabochons (opposite, top), was found at the Late Roman cemetery of Vermand, Belgium, in what seems to have been the grave of an officer of auxiliary cavalry troops of Sarmatian origin. The Sarmatians were another tribe of eastern nomads that swept into the west during the turmoil of the Migration Period.

Producing good sword blades was a challenge to smiths from the time they first mastered the working of iron and steel. Hardened steel becomes brittle, and softer wrought iron cannot keep an edge. Celtic smiths of the La Tène Culture (ca. 300 B.C.) found the solution to this problem by hammer-welding strips of iron and steel together as a blade core, and adding a separate edge of very hard steel. To better observe the changing temperatures of the metal—from dark red to white hot—hammer-welding was often done at night, adding to the mystique of the smith.

The Viking sword illustrated here (right) is of this construction, although in its excavated condition it has lost the attractive “dragon-skin” pattern of light and dark spots produced by this technique. The silver inlays of its hilt had more than ornamental value; silver was thought to be an effective protection against evil magic that could blunt the sword.



*Viking sword, found in France,
tenth century*



Langobardic shield boss, seventh century



*Ornamental plaque of a knight,
western European (possibly English),
ca. 1300*

CHIVALRY & HORSEMANSHIP

Chivalry was the code for the ideal way of life of the knight, the *chevalier*. As the name implies, chivalry was intimately connected with the horse (*le cheval* in French) and horsemanship. A trained warhorse was an enormously valuable asset, both for the practical purposes of fighting and as a status symbol. In accordance with its value a horse was often decked out in sumptuous trappings of velvet or brocade with the armorial bearings of its master embroidered in gold or silver thread. A charger's headstall also could be fitted with a crest like that on a knight's own helmet.

Less conspicuous elements of riding equipment, too, were fashioned in ways, such as gilding and enameling, that made them status symbols. Enameling was a technique almost as expensive as jewelery



Rowel spur, Spanish (Catalan), ca. 1400

with colored stones. This elegant gilt horse bit (below) is enameled with the heraldic charges of two noble Catalan families, either the arms of the owner and his wife or those of his father's and mother's families. At some time one of the large decorative plaques became separated from the ensemble; it is now in the Musée de Cluny, Paris.

Gilt spurs were a jealously guarded class privilege that distinguished knights from other riders. Horsemen of lesser rank, such as sergeants or men-at-arms, were permitted only iron or brass spurs. Squires, as knights in training, had the right to wear silvered spurs.

Originally spurs had simple prongs. These prick spurs could easily cause injury to the horse, and by the fourteenth century the much safer rowel spur came into general use. The rowel spur illustrated here (opposite), like the enameled bit, is of Catalan origin. Its black-and-gold checkered decoration is derived from the armorial device of the counts of Urgell.



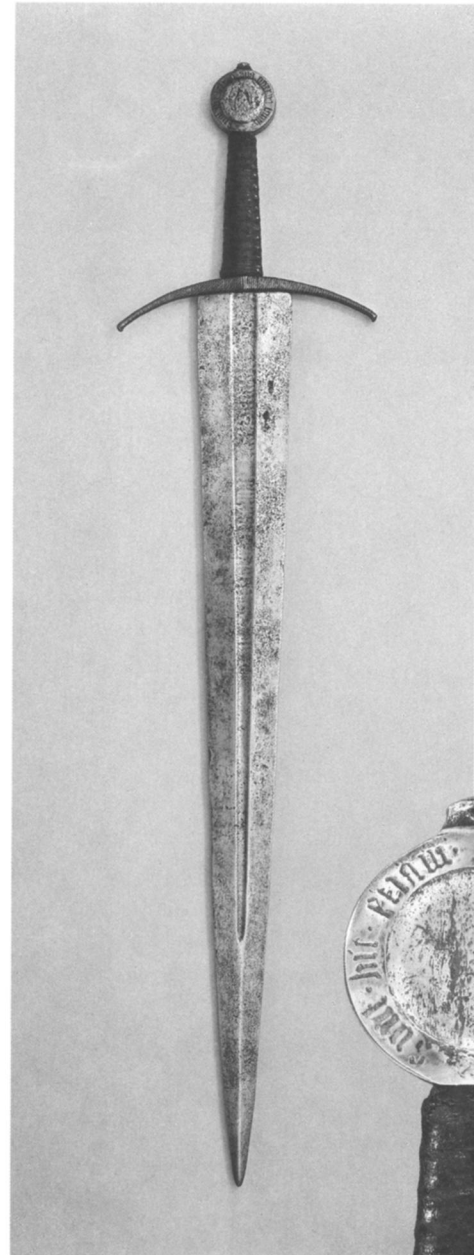
Curb bit, Spanish (Catalan), ca. 1350

MEDIEVAL ARMS

The knightly weapon par excellence was the sword. For the medieval mind, which gave deep spiritual significance to even everyday objects, the knight's sword and its parts were full of meaning. In the fifteenth-century chivalric romance *Tirant lo Blanc*, which Cervantes called "the best book in the world," a wise old hermit explains the significance of a knight's weapons. The sword is "the noblest of weapons," because its cruciform shape symbolizes the Cross, on which Christ died for the salvation of mankind, "and every true knight should do likewise, braving death to preserve his brethren." The pommel symbolizes the world, "for a knight is obliged to defend his king." The two edges and the point of the sword indicate that the knight should serve in three ways; to protect the Church, to fight for his king, and to see to it that "common folk" are not abused.

The sword illustrated here (left) bears engraved on the silver inlaid rim of its pommel the inscription *SUNT HIC ETIAM SUA PRAEMIA LAUDI* (Here, too, virtue has its due reward), a quotation from Virgil's *Aeneid* (1:461). This inscription suggests that the sword was a gift from a cultured and learned lord honoring a faithful vassal. During the Middle Ages the *Aeneid* was reputed to have prophetic qualities, and the quotation might have been thought to extend magical protection to the sword's owner.

The fourteenth century saw a profound change in the appearance of the knight; from about 1350 on, there evolved the image of the "knight in shining armor," clad in brightly polished steel plates. Since Roman times the main body defense had been mail, constructed of interlinked steel rings. An improvement in the spanning mechanism of the crossbow increased the penetrating power of the bolts, which now could pierce mail with ease. The solution was to construct



Sword, western European, ca. 1400, and detail showing inscription on pommel





armor with surfaces that could deflect these hard-hitting missiles. To make the deflecting surfaces as efficient as possible, individual armor elements began to be shaped in ways that anticipated streamlining. This shaping is particularly evident in helmets with pointed “pig-faced” or “hounskull” (hound’s-skull) visors, like the one at the left.

One result of the introduction of plate armor was the gradual disappearance of the formerly indispensable shield. The stiff plate arm and hand defenses made it awkward to slip into the shield grips, and the plates of body armor had sufficient shock resistance of their own to make the shield superfluous.

Another result was a change in men’s way of dressing. The plates protecting the torso were fitted into the surcoat, or coat-of-arms, worn over the mail shirt. The loosely fitting mail shirt—of the same cut as the medieval gown—could be pulled on like a sweater, but the plate-lined surcoat had to be tightly fitted to prevent chafing, and therefore could not be pulled on over the head; it had to open in the front and buckle like a vest. The major components were the halves of a shaped breastplate covering the chest, called in England a pair of plates. Before the development of plate armor, knights charged with their left (shield) side turned toward their enemies. Even after shields were abandoned, this practice continued; and impacts of lance and sword were expected to hit primarily on the knight’s left side. To let these blows slide off, the left plate of the pair had to overlap the right—which seems to be the reason why men’s jackets are still buttoned left over right.

The armor with a pig-faced helmet and a pair of plates covered in red velvet (left) is reconstructed from elements found in an excavation of the ruins of the Venetian outpost at Chalcis, on the Greek island of Euboea, which was destroyed by the Turks in 1470.

Armor, composed of pieces found at Chalcis, Euboea, Greece; Italian, ca. 1400

HELMETS



*Sallet, attributed to Lorenz Helmschmid,
German (Augsburg), ca. 1495*



*War hat (chapel-de-fer), western European
(probably Burgundian), ca. 1475*



*Rennhut, of Louis II of Hungary,
attributed to Kolman Helmschmid, German
(Augsburg), ca. 1525*

Great skill and experience were needed to create a full suit of armor in all its complexity. Some of the leading armor shops, the Missaglia in Milan, for example, employed specialists who worked exclusively in fashioning certain elements, such as the intricately jointed arm and leg defenses, fingered gauntlets, or visored helmets.

The making of a visored helmet was a particular challenge because it not only demanded finesse in fitting together the movable parts, but also required an inspired touch and great patience to hammer the sweeping form of the bowl from an iron ingot. In shaping the bowl, care had to be taken to leave the material sufficiently thick at points of stress; in less important areas it could be hammered thin to save weight.

This sallet (top), with its visor and chinpiece, the bevor, rotating on common pivots, is a fine example of the ingenuity of an armorer in making a complicated piece of armor function with the greatest economy. The style and quality of workmanship suggest that it was fashioned by one of the greatest armorers of the late fifteenth century, Lorenz Helmschmid of Augsburg (1445–1516). The surviving portion of brass trim on its visor matches the decorative borders on armor in the Rüstammer, Vienna, that is known to have been created by Helmschmid for Emperor Maximilian I.

The war hat, or chapel-de-fer (center), is a tour de force of execution; its vigorously spiral-patterned bowl and deeply swept brim are shaped out of a single plate of iron. The helmet's elegance suggests a provenance from the most sophisticated court of western Europe, that of the dukes of Burgundy. In Burgundian art headpieces similar to this chapel-de-fer are represented with rich trimmings and finials of silver gilt. Any such trimmings have disappeared from this example, leaving the steel of this unique helmet in its sublime purity.

The third helmet on this page is a *Rennhut* (bottom), a sallet worn in a specifically German variant of the joust, the *Scharfrennen*, in which sharp lances were used instead of those fitted with coronels. Its etched decoration is in the style of the printmaker Daniel Hopfer (ca. 1470–1536), of Augsburg, who worked closely with Kolman Helmschmid (1471–1532), the son of Lorenz. The initials LM are thought to be those of King Louis II of Hungary (r. 1516–26) and his queen, Mary.

The *Rennhut* as well as the sallet were kept for centuries in the storerooms of the imperial Ottoman arsenal at Istanbul. They must have been booty from Hungarian and Austrian royal castles, taken when the Turks swept to the very gates of Vienna in 1529, after defeating the Hungarians during the disastrous battle of Mohács in 1526, in which King Louis II was killed.



Portions of a fluted armor, Italian (Milan), ca. 1510

COSTUME ARMOR

Armor was a form of costume, as is demonstrated by the parallels of the medieval gown and the mail shirt, and the buttoned vest and the buckled pair of plates.

During the second half of the fifteenth century a few purely decorative flutings were worked into the surfaces of breast- and backplates in imitation of the fabric folds of fashionable doublets of the period. After 1500 this fluting, which caught and reflected the dazzling rays of the sun, was spread over the entire surface of an armor (above)—with the exception of the greaves, which remained plain to emphasize the elegant slimness of a well-turned male leg. The fluting, in a “corrugated-iron” effect, also gave extra strength to the steel plates, which thus could be made thinner and therefore lighter.



*Portions of a costume armor, attributed to Kolman Helmschmid,
German (Augsburg), ca. 1525*

The relation of armor to costume is clearly evident in those armors that imitate the puffed-and-slashed dress of the colorful German mercenaries, the *Landsknechte*, who dominated the battlefields of the early sixteenth century. Reproducing in steel the puffed sleeves of a *Landsknecht* costume was a challenge only the most skillful armorers could hope to meet (above). The body armor was “tailored” to simulate the slashed doublet and tight hose favored by these swaggering soldiers. The cuirass with formfitting hip and buttock defenses was called *hoguine* armor, a term Shakespeare whimsically transformed into “hog-in-armor.” An armor like the one illustrated here would have been far too expensive for a common halberdier or pikeman; it would have been the outfit of a fashion-conscious nobleman. The breastplate of this armor and a second pair of arm defenses of more conservative construction are in the Musée de l’Armée, Paris.

HORSE ARMOR

A knight, dependent on his horse as both a weapon and a means of defense, had to take care to protect his charger. Of course, this protection could be effective only within the scope of contemporary technology. Roman heavy cavalry had armor of bronze scales for their horses; from the twelfth century on, knights covered their steeds in trappings of fabric and later of mail. By the middle of the fourteenth century, full steel-plate armor for horses was complete.

This horse armor (below), dated 1548, is boldly embossed on its peytrel, or chest plate, with the initials of the motto, name, and title of its owner: K[r]ist I[ch] T[rau] G[anz] V[nd] G[ar] (In Christ I trust wholly) H[ans] E[rnst] H[erzog] Z[u] SACHSEN (John Ernest, duke of Saxony). It bears the quality test mark of Nuremberg and can be safely attributed by its style to the renowned master armorer Kunz Lochner (ca. 1510–1567).

Armor for man and horse, attributed to Kunz Lochner, German (Nuremberg), both dated 1548



TOURNAMENT ARMS



*Tournament helmet, German
(probably Nuremberg), ca. 1500*

Tournaments were the most popular and spectacular events staged during the Middle Ages and the Renaissance and carried enormous prestige as social occasions. The family pride of participants was immortalized in illustrated tournament books (see page 4).

In the twelfth and thirteenth centuries, when tournaments were largely training for actual combat, battle armor was worn but weapons were blunted “for courtesy.” Gradually, in order to make this rough sport reasonably safe, specially designed reinforcement elements came into use. For the most popular form of tournament, the joust, a helmet was worn that was bolted to the breast- and backplates (left). Useless in battle because it restricted mobility, it effectively prevented whiplash.

Although improvements in body armor made shields obsolete, special types of shields were kept in use for tournaments and courtly parades. The tournament targe was more or less square in outline, with a *bouche*, a cutout at its upper right corner designed to support the couched lance. Our targe (below) is unusual in being painted with badges (thistles) and challenging war cries, IO HARR (Just wait) and LAS VBER GAN (Let it pass over), in addition to the heraldic arms of the knight (a unicorn in gold and black).

*Tournament targe, from the Castle Reiffenstein
armory, German, early fifteenth century*



GREENWICH ARMOR

Some of the most opulent armor ever made was produced at the royal English workshops at Greenwich, established by Henry VIII (r. 1509–47) in 1514, and staffed with craftsmen from Germany and Flanders working under the master armorer Martin van Royne (still active in 1540), who seems to have had his training in the court armor shop in Burgundy.

This completely etched and gilt armor (right) bears the date 1527 and is the earliest dated product of this shop. It is part of a set, or garniture, for man and horse with exchange pieces that made the basic field armor also fit for jousting and for sporting foot-combat, a favorite entertainment of Henry VIII.

The garniture has been called the most beautiful armor in the world by one of the great English connoisseurs. Its lavish etched decoration was probably designed by the painter Hans Holbein the Younger (1497–1543), who had just arrived in England. It was quite possibly made for the king himself, but seems to have been given as a diplomatic present to a French ambassador, François de La Tour-d'Auvergne, viscount of Turenne. Later it came into the possession of Turenne's friend Galiot de Genouilhac, grand master of artillery under Louis XII and Francis I of France. The armor was kept for centuries in the Château de Bonnelles, Seine-et-Oise, by the dukes of Uzès, descendants of Galiot de Genouilhac.



Field and tournament armor, made in the royal workshops at Greenwich, dated 1527



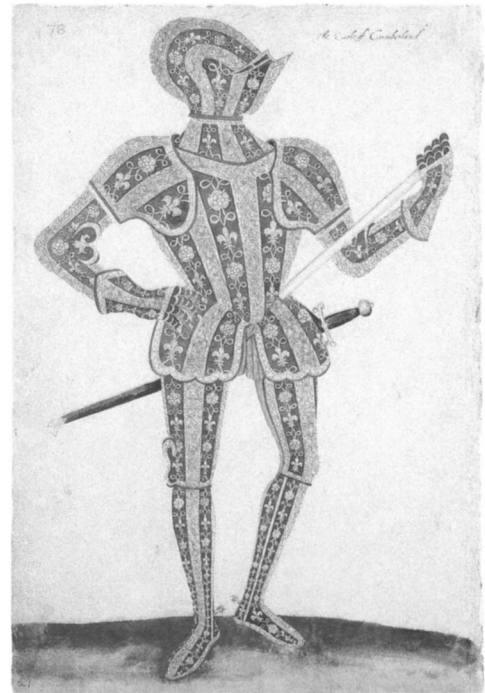
*Armor of George Clifford, third earl of Cumberland, made in the royal workshops at Greenwich,
ca. 1580–85*

A rival to the armor on page 21 for the distinction of being the most beautiful in the world is this garniture for field and tournament (opposite). It has extra reinforcement pieces for the joust, including four vamplates, or hand guards, for lances, and a second helmet, as well as a matching chanfron and saddle plates. It is also a product of the royal English armory at Greenwich.

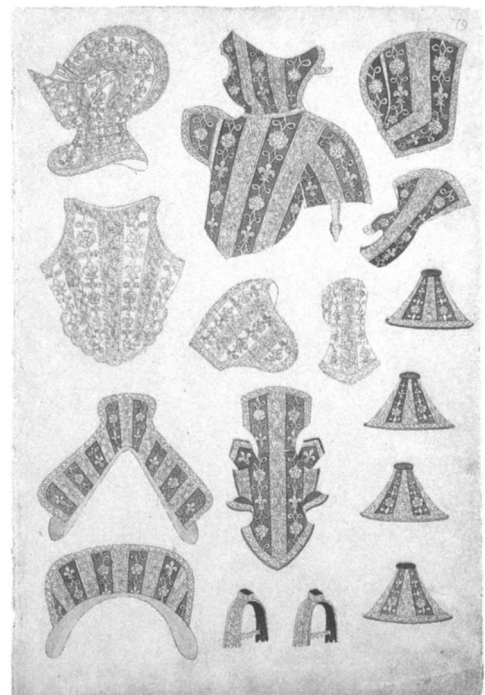
This splendid armor was made about 1585 for George Clifford, third earl of Cumberland (1558–1605). In homage to Queen Elizabeth I (r. 1558–1603), the decoration includes royal badges, Tudor roses and fleurs-de-lis, and the queen's monogram interlaced into the strapwork of the gilt bands. In 1590 Clifford was made Champion of the Queen.

The earl of Cumberland won fame and reward as one of the Elizabethan gentlemen-pirates who preyed on the Spanish treasure fleets. He was the only one ever to capture and hold, for five months in 1598, the formidable El Morro fortress in San Juan, Puerto Rico, which was known as the "Key to the Caribbean."

The original composition of the Cumberland armor and its exchange pieces is documented in the so-called *Jacobe Album* (right), in the Victoria and Albert Museum, London, a manuscript comprised of pen and watercolor drawings of the armors made at Greenwich under the direction of master armorer Jacob Halder.



*Pen and watercolor drawings from the so-called *Jacobe Album* of the earl of Cumberland's armor and exchange pieces*



PARADE HELMETS



*Parade burgonet, by Filippo Negroli,
Italian (Milan), dated 1543*

The lion-headed sallet (left, below) is one of the earliest parade helmets to survive intact. It consists of an actual battle helmet of steel overlaid with a lion's mask of embossed and gilt copper that has silvered fangs and eyes of polished semiprecious stones. The lion's mask is an allusion to Heracles wearing the skin of the Nemean lion, a motif from classical mythology in the spirit of the Italian Renaissance.

A supreme example of Italian Renaissance armor is this parade burgonet (above), dated 1543 and signed on its brow band by Filippo Negroli of Milan (active 1532–51), one of the greatest armorers of all time. It is a tour de force, with its sweeping outline and highly raised embossing shaped out of one sheet of iron, which is patinated to look like antique bronze. A graceful mermaid forming the helmet's crest holds by its hair of writhing snakes the baleful head of Medusa, who turned to stone whoever looked at it. This combination of beauty and terror gives this masterpiece of the armorer's art an awesomeness that would have impressed the wearer's admirers and enemies.

Two kings of France, Francis I (r. 1515–47) and Henry II (r. 1547–59), established their own



and Rosso Fiorentino (1494–1540). The armor illustrated on the cover of this publication is an especially fine example from this workshop. Aside from the proliferation of exquisite detail in the relief, an almost overwhelming impression of richness is achieved by lavish use of gilding, silvering, and bluing for colorful effect. Obviously, armor entirely covered with embossed relief decoration and without any glancing surfaces was totally inappropriate for battle, but it was a supreme asset in pageants.

The gilt parade burgonet (below), with an elegant Greek scroll pattern on its comb and large relief medallions with battle scenes from Greek mythology on either side of its bowl, seems to be a solitary element, not part of any known armor. It is also one of the very few objects in the field of arms and armor that can be documented by a representation in art. The portrait (right) of Cosimo II de' Medici, grand duke of Tuscany (r. 1609–21), is of extraordinary importance for historians of armor because it shows this very burgonet placed beneath the grand duke's hand. When the portrait was painted, this helmet was at least seventy years old and presumably a family heirloom. It is thought to have been a gift from Catherine de' Medici (1519–1589), queen of France and widow of Henry II.



Cosimo II de' Medici
grand duke of Tuscany
workshop of Justus Sustermans
(Flemish)



PARADE SHIELDS

Under the influence of the Italian Renaissance, pageants staged as Roman triumphs became popular, and the shields paraded along by participants were decorated with scenes from ancient history or Greek mythology.

The parade shield is painted in gold and black to simulate relief embossing in metal. Its front, meant to be seen at a distance, has large figures painted in bold strokes; by contrast, the battle scenes on its inner face (below)—to be viewed by the shield's wearer at less than arm's length—are executed in exquisitely minute detail.



Parade shield, attributed to Girolamo da Treviso (Italian, ca. 1497–1544), ca. 1535

The French royal armory, under its supervising designer, the court goldsmith Etienne Delaune (ca. 1519–1583), produced not only sumptuously decorated parade armor but also sets of shields with medallions illustrating subjects taken from ancient Roman history—a virtual *histoire métallique*. The shield (opposite) made for Henry II depicts the last stand of the Roman consul Lucius Aemilius Paulus at the Battle of Cannae (216 B.C.). Its companion piece in the Louvre shows another event in the same battle. The episode on our shield is reported in Livy's *History of Rome* (XXII:44–51), but that on the Louvre shield is based on a parallel tradition told in the *Histories* (III:117) by Polybius.

The intricate strapwork frame surrounding the medallion is punctuated by the cypher H , Henri's monogram H linked with a C for his queen, Catherine de' Medici, and a D for his mistress, Diane de Poitiers (1499–1566). The crescents alternating with the monograms (and the bows and arrows in the strapwork of the Louvre shield) are symbols of the Roman goddess Diana and refer quite pointedly to Diane de Poitiers.



Shield of Henry II of France, probably designed by Etienne Delaune, French, ca. 1555



Field armor, Italian (Milan), ca. 1600–1610

PARADE & FIELD ARMOR

The decoration of armor could be as lavish as any on fine metalwork. One of the oldest techniques, known to the craftsmen of ancient Mycenae, was the application of gold or silver to a dark background—patinated bronze or, later, blued or blackened steel—for a multicolored effect. An especially splendid example of that technique is this Italian field armor (left, and detail opposite), with gold and silver wires of different thickness and size hammered to a surface of blued steel.

Beginning in the second quarter of the sixteenth century, breast- and backplates had three ornamental bands in imitation of the seams of elegant doublets of the period. This decorative principle has been elaborated on this armor by filling in the spaces between the bands and expanding the decoration beyond the breastplate to cover all surfaces, even the helmet and the arm and leg defenses.



Detail of the Italian field armor shown opposite



Armor for heavy cavalry, French, ca. 1600

The entirely gilt armor for a high-ranking officer of the heavy cavalry (left) is in the style fashionable in France at the very end of the sixteenth century. (Gilding, incidentally, was not only an indication of rank but also an effective, although expensive, protection against rust.) This armor's etched decoration has transcended the traditional three-band pattern to cover the entire surface and to give an effect reminiscent of a rich, brocaded fabric.

At the time this armor was in use, firearms, that is, a brace of pistols in saddle holsters, had replaced lances as the main armament of heavy cavalry. For this reason armor, or at least breastplates, had to be bulletproof. As a test the armorer fired a pistol from twenty paces at his finished product, leaving the dent made by the bullet as the "proof." This armor bears a very shallow dent on its breastplate.

The armor originally possessed plates for the horse: a chanfron of the same decoration is in the Museum's collection; its matching saddle is preserved in the Musée de l'Armée, Paris.

This opulent half armor for a five-year-old boy is most likely the last royal armor made in western Europe (opposite and detail page 32). It is signed in script on its backplate: *Drouar Ordinaire du Roy au Heaume a Paris 1712*.

Its surface—blued and gilded in the traditional pattern of three bands—is enriched by hundreds of decorative rivet heads of gilt bronze and is colorfully contrasted by the red velvet of its original lining that shows as pickadils around the edges of the pauldrons and the tassets. This lining was intended to prevent scratching of the delicate bluing and also to minimize clattering.



Parade armor of Luis, prince of Asturias, French (Paris), dated 1712



Detail of Luis's parade armor, showing the cuirass and its lining

The rivet heads are shaped as castles, lions, and fleurs-de-lis, heraldic devices of the Bourbon kings of Spain. This iconography is appropriate at this date for only one member of the dynasty, Luis, prince of Asturias (b. 1707), who was the first of his line to be born in Spain and was king for less than a year before he died in 1724. In all probability this armor was a present from Luis's great-grandfather, Louis XIV (r. 1643–1715), the Sun King of France.

Although the armorer gave only his family name, it is clear that he was a member of the Drouart clan of armorers, recorded in Paris during the seventeenth century. His shop address, "at the Sign of the Helmet," is what one would expect for an armor workshop.

THEATRICAL ARMOR

By the eighteenth century full armor had become obsolete, although it was still seen in portraits of monarchs eager to present a warlike image and generals nostalgically clinging to the romantic and heroic days of chivalry. Only a few regiments of heavy cavalry still wore cuirasses, and among those, armor usually had been reduced to just a breastplate without a back. Even helmets had been replaced by the more comfortable tricorne hat. However, in court festivities, parades, carousels, and especially in the immensely popular operas and ballets of the Baroque period, theatrical armor was still an important part of pomp and pageantry.

This dazzling blue-and-gold *petite garniture* (right) consists of a helmet and shield of silvered bronze, patinated to look like blued steel, with beautifully chased ormolu mounts. Dating from about 1760, it is one of the last manifestations of classical armor.



Parade helmet and shield, French, ca. 1760



Pavise, probably Bohemian (Chomutov, Czechoslovakia), ca. 1440

*Ceremonial arrowhead,
Bohemian, before 1439*



INFANTRY ARMS

The knight in armor on horseback is the first image that comes to mind when thinking of warfare in the Middle Ages. However, from the fourteenth century on, the infantry—represented by such stalwart fighters as the English archers of Crécy (1346) and Agincourt (1415); the Flemish spearmen of Courtrai (1302); the Swiss halberdiers of Sempach (1386), Grandson, and Murten (1476); and the fanatical Bohemian rebels from the Hussite wars (1419–37)—was a force to be reckoned with on the battlefield.

The Hussites introduced an innovative method of mobile warfare utilizing infantry transported in covered wagons that could pull up into a defensive ring; in open battle formation the first ranks of their infantrymen were protected by large standing shields called pavises. This fighting technique was adopted by city militias in neighboring Austria and Germany, so that the citizen-soldiers on campaign could feel safe behind these movable “city walls.”



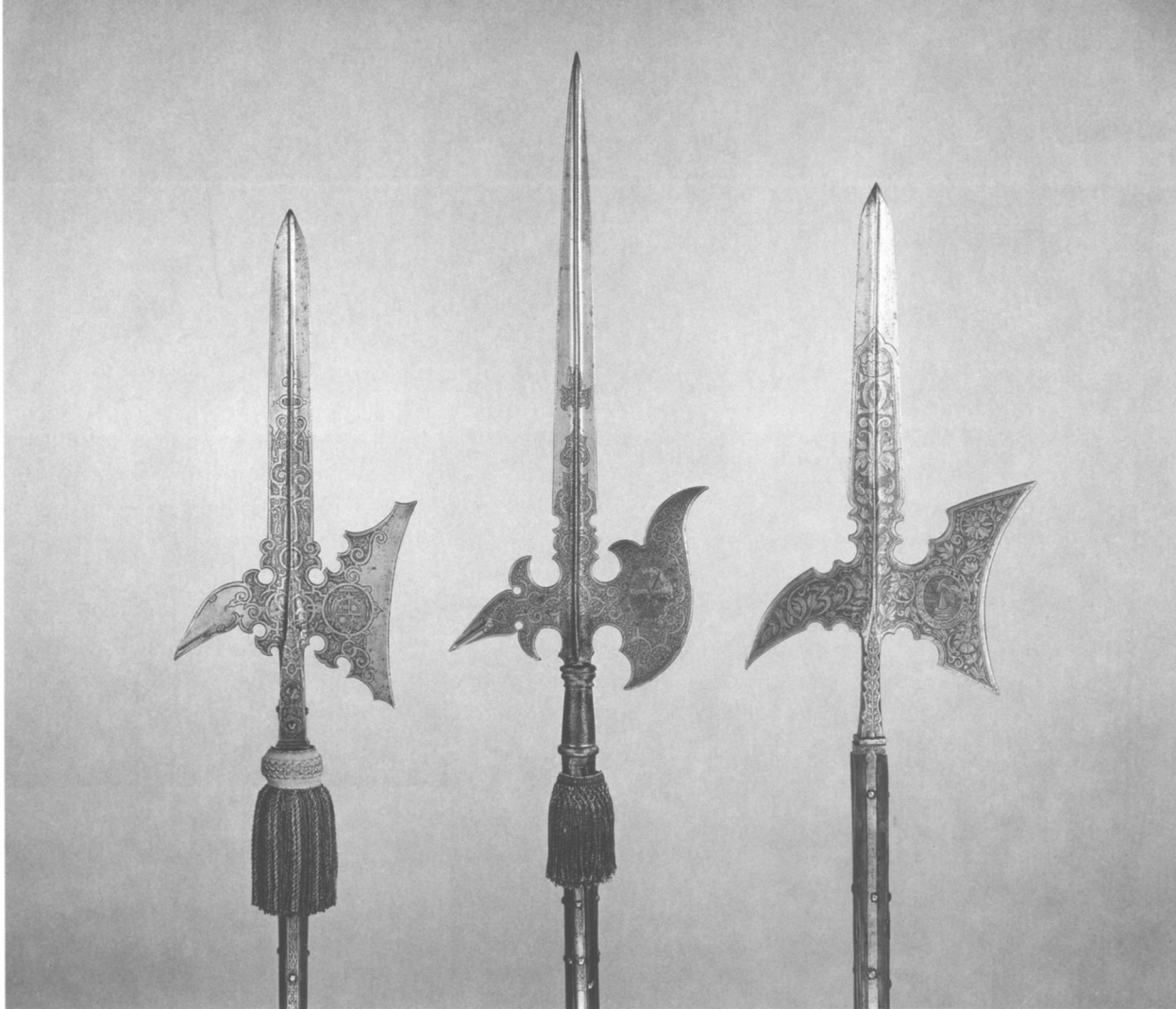
Swiss dagger with scene from the story of William Tell, ca. 1570

The pavise illustrated here (opposite, far left) was probably made in the Bohemian city of Chomutov, Czechoslovakia, and may be one of a group of forty that was sold to the city of Zwickau in Saxony in 1441. The arms of Zwickau—three swans—were added over the original decoration of a plume of ostrich feathers, a badge of the kings of Bohemia.

The oversize decorated arrowhead (opposite, below) displaying the royal ostrich plume and the monogram AE for King Albrecht II of Bohemia (r. 1437–39) and his queen, Elizabeth, was probably part of a giant arrow carried as a staff of command by a captain of archers or crossbowmen in the royal entourage. (The ostrich plume was a symbol of steadfastness because no matter how hard the wind blows, this seemingly delicate feather stays unruffled.)

The most sought-after mercenary soldiers of the fifteenth and sixteenth centuries were the Swiss infantrymen, who fought in massed tactical formations with long pikes. They carried as sidearms the flashy *Schweizerdolch* (Swiss dagger) with its typical I-shaped grip and scabbard with side pockets for by-knives, bodkins, and/or forks—handy equipment for campaigning that has been jokingly called the original Swiss army knife.

Officers wore, as badges of rank, daggers with scabbards of gilt bronze, cast with figural scenes in relief. The motifs were taken from the Bible, ancient Roman history, or, like the story of William Tell (above), from Swiss national history. Another fitting motif was the Dance of Death, of which two original sketches (in Berlin and Basel) by Hans Holbein survive.



Parade halberds. Left (with arms of prince archbishop of Salzburg), German, dated 1589. Center (for guard of prince elector of Saxony), German (Saxony), ca. 1590. Right (with arms of princes of Liechtenstein), German, dated 1632

The most efficient arms for infantry during the fifteenth and sixteenth centuries were pole arms, especially the long pike and the halberd. Although the pike was called the “queen of the battlefield,” it was of use only in the bristling mass of the pikemen’s square. The halberd, on the other hand, with its cutting ax blade, stabbing point, and tearing hook, was a weapon for shock troops. It was versatile enough to be efficient in the hands of a single man, such as a lonely sentinel. For this reason halberds became standard equipment for palace guard units (above). The halberd’s vigorous outline invited exaggeration of its functional elements into purely ornamental bizarreries; its relatively large surfaces offered space for armorial devices and other fashionable decoration.

Other pole arms that shared the halberd’s versatility were the glaive and the partizan. The glaive was of humble peasant origin—essentially a cleaver mounted on a long shaft. Gradually it grew in dimension and became—in sometimes superbly decorated examples—the favorite pole arm for palace guards of noble Italian houses (opposite, top right). The partizan started out as a broad-bladed spear, but it, too, was gradually transformed into more and more fanciful shapes according to the whims of potentates of the Baroque period.

Palace guards of this time often wore only a helmet as token armor but—as was fitting for the pomp of court life—these helmets usually were of high artistic quality. This is the case with the morions of the *Trabanten*, the palace guards at the Saxon court at Dresden (opposite, lower left), who were resplendent in the black and gold of the court livery.

ARMS FOR THE
PALACE GUARD



*Glaive of the palace guard of Cardinal
Scipione Borghese-Caffarelli, Italian,
ca. 1600–1610*

*Morion with arms of dukes of Saxony,
German (Nuremberg), ca. 1570*



Rapier, by Israel Schuech, German (Dresden), dated 1606

in metalwork. The first (below) is cut steel, with minute figures chiseled in high relief out of the solid metal. The guard is of a French type, and the inscriptions in tiny letters that accompany the carved decoration of biblical scenes are in Latin and French. On the off-side of its knuckle guard it bears the name of the famous general Ambrogio Spinola (1569–1630). It is thought to have been presented to Spinola by King Henry IV of France (r. 1589–1610), probably in 1605. This is suggested by the fact that it is very close in design to the sword of Henry IV, dated 1599, now in the Musée de l'Armée, Paris.

Rapier of Ambrogio Spinola, French(?), ca. 1605



RAPIERS

The interest in art and education awakened in the Renaissance showed itself also in a scientific approach to the art of fencing.

The steel gauntlet that used to protect the swordsman's hand was now considered a hindrance to the sophisticated wrist action of the elegant fencer. Therefore, by the middle of the sixteenth century the rapier hilt with its complicated system of guards was developed.

The swept-hilt rapiers illustrated here are masterpieces of two different techniques of embellishment

The jeweled rapier hilt of gilt bronze (opposite, top) is signed ISRAEL M. [esserschmied?] SCHUECH, 1606. It is the only signed and dated work by this master, who was court cutler of Christian II, prince elector of Saxony (r. 1601–11). The sword's blade is pierced in intricate openwork to show the skill of its maker, Juan Martinez, one of the celebrated swordsmiths of Toledo, Spain, during the late sixteenth century.

COURT SWORDS

An elegant court sword was an indispensable accessory to an eighteenth-century gentleman's fashionable attire. The deceptively light and slender blades of court swords (or small-swords, as they were called in England) were quite serviceable for an impromptu duel or getting out of a scrape with a footpad. The hilts, on the other hand, depending on the taste and whim of their owners, could display extravagance bordering on the eccentric. Although the majority of court swords in our collection—one of the most comprehensive anywhere—have hilts of durable materials, such as silver, gold, cut steel, or gilt bronze, there are also hilts encrusted with brilliants (not always real) or made of exotic materials, such as onyx, agate, tortoiseshell, mother-of-pearl, and even porcelain.

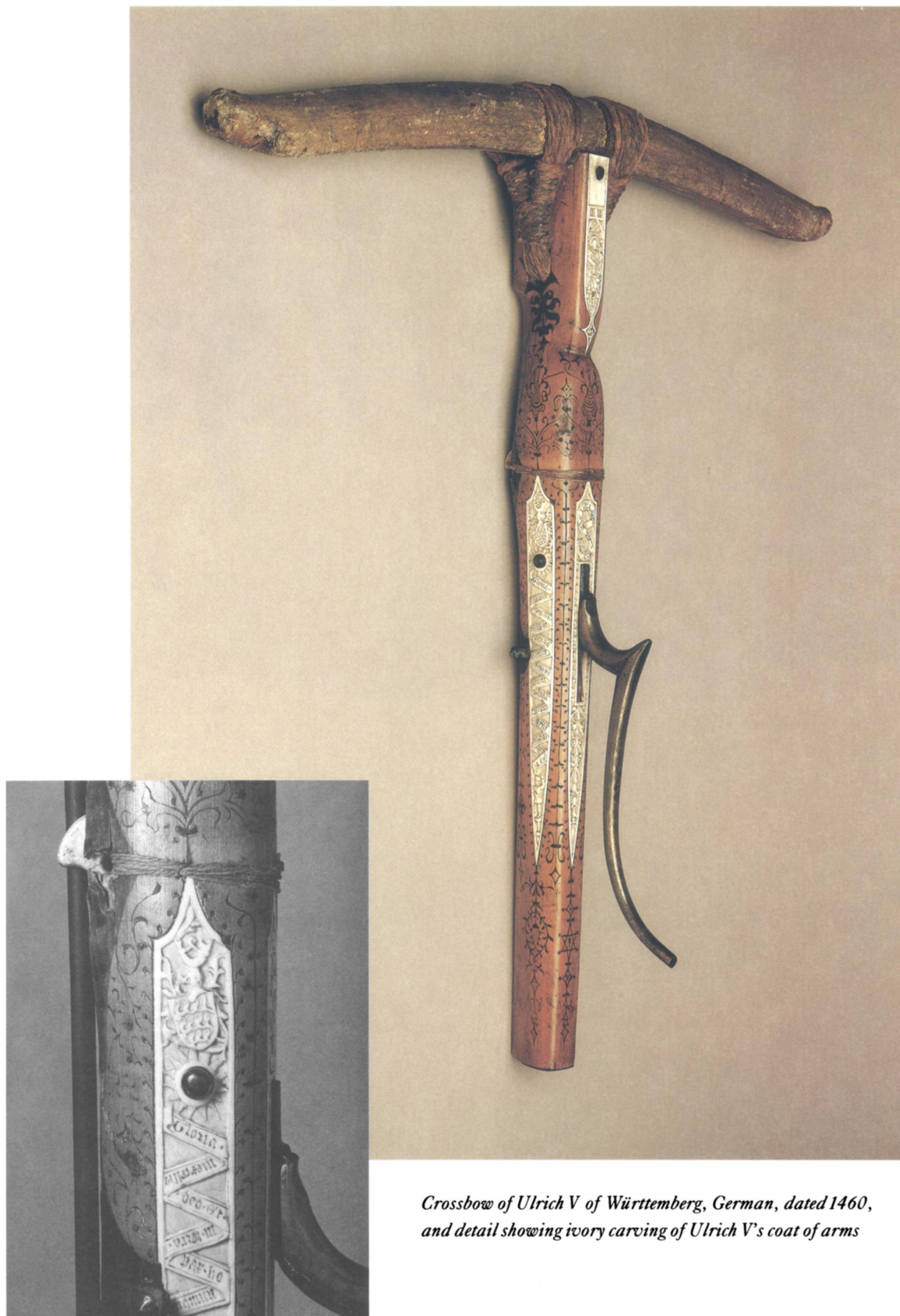
Special care was lavished on presentation swords, which were awarded to distinguished soldiers in cases when medals for bravery were either not yet created or deemed inadequate. These presentation swords are also of considerable historical value, because they were usually inscribed with the names of the recipient and donor as well as the occasion and date of the presentation.

The sword illustrated here (right) has a silver-gilt hilt with enameled medallions and was presented by the Committee of London Merchants to Lieutenant John Burn for his heroic conduct on board H.M.S. *Beaulieu* during the mutiny at the Nore in 1797. It bears the mark of the London goldsmith James Morisset, the hallmark of 1798–99, and the name of the retailers, the royal goldsmiths Rundell and Bridge.



Presentation sword, English (London), hallmarked for 1798–99

HUNTING WEAPONS



Crossbow of Ulrich V of Württemberg, German, dated 1460, and detail showing ivory carving of Ulrich V's coat of arms

Hunting in medieval Europe was not only a sport; it was essential as a source of additional food. The crossbow was the preferred weapon for stalking deer. It had greater penetrating power than the longbow, and because of its accuracy and silent discharge it remained in favor as a hunting weapon long after the introduction of firearms.

The crossbow illustrated here (opposite) bears on its richly carved staghorn veneer the date 1460 and the arms of Count Ulrich v of Württemberg, hereditary master of the imperial hunt—three stag's antlers in his shield and a hunting horn as his helmet crest. The once-powerful bow is now sadly damaged; it is composed of layers of whalebone and horn with a cover of waterproof birch bark to keep the layers from coming unglued when wet.

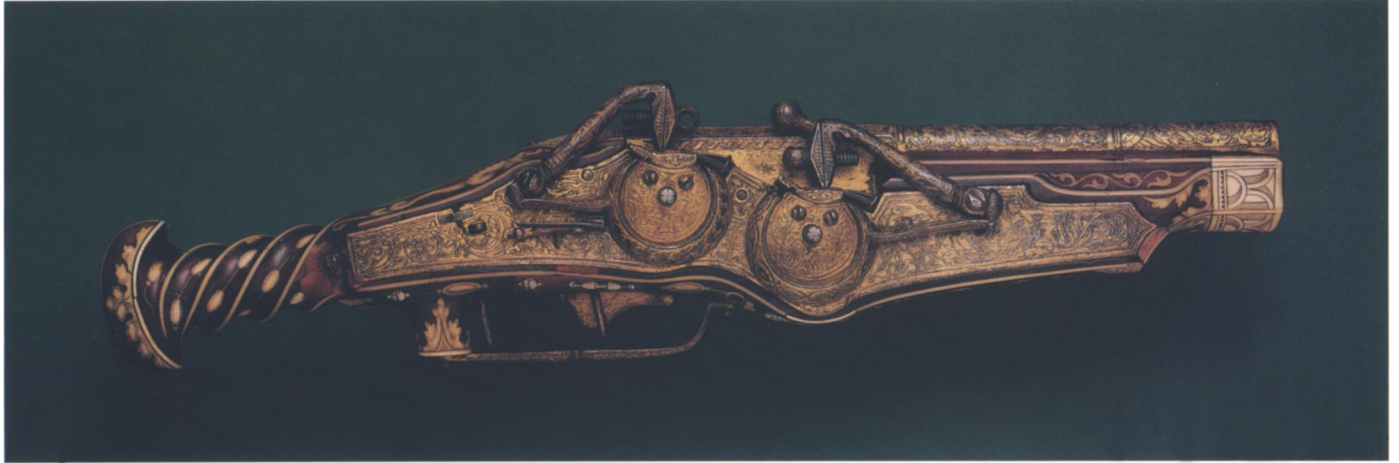
A large knife with which to cut up the deer or boar carcass, to chop wood for the campfire, or to slash a path through dense undergrowth was a vital necessity for every huntsman. The gentleman hunter, however, carried a sword. This weapon was supposed to be used to give the downed stag the coup de grace, the privilege of the lord of the hunt. (*Hirschfänger*, the German term for these hunting swords, is composed of *Hirsch*, meaning "stag," and *Fang*, meaning "killing stroke.") If carried by a rugged outdoorsman, the hunting sword was of sturdy construction, with grips of staghorn and appropriate hunting decoration, but many noblemen of the Rococo carried their hunting swords only for show. Quite often these decorative hunting-sword grips were of the same fragile materials—agate, porcelain, or ivory—as used in the hilts of court swords (right).

Hunting sword with decorative ivory hilt, German, mid-eighteenth century

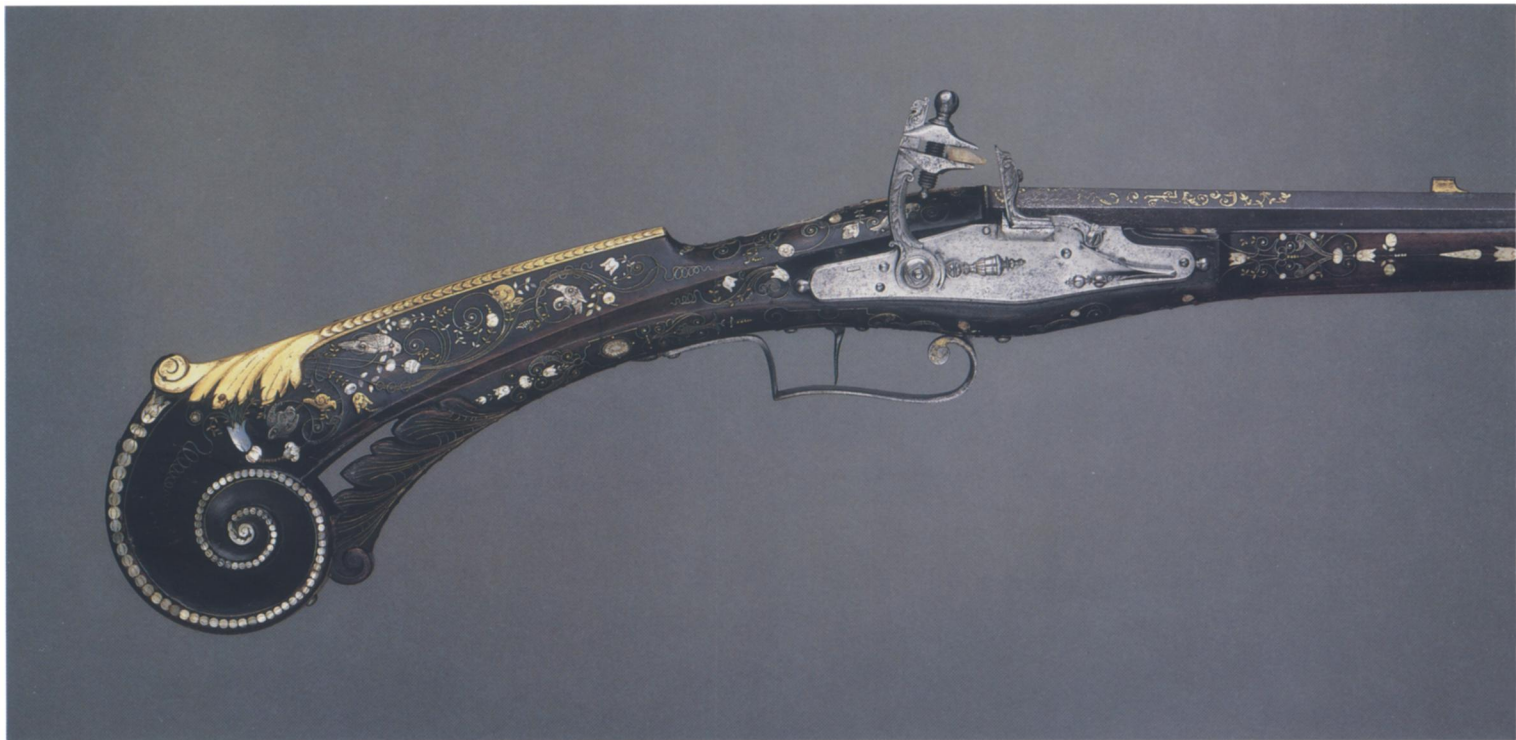


FIREARMS

As long as guns had to be ignited with glowing matches, they were useless to hunters, because the smell of the smoke warned the animals and drove them away. The first self-igniting gunlocks were wheellocks that worked on the friction principle familiar to us from the cigarette lighter. The relative ease of carrying such ready-to-use guns made them practical for horsemen. For rapid shooting, double- and triple-barreled guns were introduced, such as this pistol (below), one of the earliest in existence, made about 1540 by the Munich gunsmith Peter Peck (1510–1596) for Emperor Charles v. The decoration on the off side of its stock shows a deer hunt on horseback, indicating that this luxurious firearm was intended as a hunting weapon.



Double-barreled wheellock pistol of Emperor Charles V, by Peter Peck, Germany (Munich), ca. 1540–45



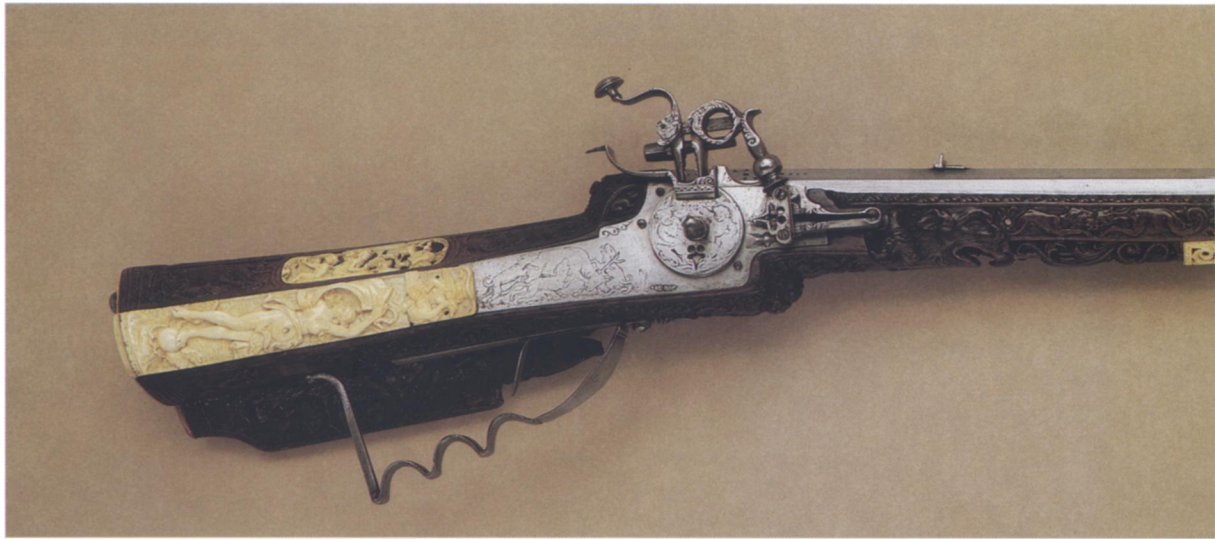
Flintlock hunting gun of Louis XIII of France, by Pierre Le Bourgeois, French (Lisieux), ca. 1620

The invention of the most reliable of these ignition systems, the flintlock, is credited to Marin Le Bourgeois (active 1589–1633) of Lisieux, Normandy. The magnificent hunting gun illustrated here (opposite, bottom) is one of the earliest flintlocks known and was made in the Le Bourgeois workshop about 1620 for King Louis XIII of France (r. 1610–43), whose enthusiasm for firearms earned him the nickname “Louis l’arquebusier.”

The efficient flintlock remained in use, practically unchanged throughout the next two hundred years, both for military muskets and in luxury hunting arms. The splendid pistols (below) were part of a garniture, all stocked in ivory, that included a hunting rifle and a fowling piece. The fowling piece, which is now in the National Museum, Warsaw, bears the date 1786; the rifle is lost. This exquisite garniture was made for Catherine II (the Great), empress of Russia (r. 1762–96), by her court gunsmith, Johan Adolph Grecke (1755–1790), in Saint Petersburg. The empress presented this garniture to Prince Stanislaw August Poniatowski (1732–1798), whom she backed as pretender to the Polish throne, and who was king of Poland from 1763 until his abdication in 1795.



Pair of ivory-stocked flintlock pistols of Empress Catherine the Great, by Johan Adolph Grecke, Russian (Saint Petersburg), 1786



Wheellock rifle, the stock decorated by Johann Michael Maucher, German (Schwäbisch Gmünd), ca. 1680–90



Flintlock sporting gun, with mounts by Louis Jaley, French (Saint-Etienne), dated 1735



Detail, buttplate from Jaley flintlock, showing Heracles



Luxury shoulder arms as a rule were sporting weapons, that is, for hunting or target shooting, and were often decorated with hunting motifs. A favorite was the myth of Actaeon, the hunter who surprised Diana bathing, was turned into a stag by the enraged goddess, and killed by his own hounds. This story is carved on the lock plate of the sporting gun from Saint-Etienne (opposite, bottom). It is dated 1735 and signed by the barrel maker, Nicolas Carteron; the stock decorator, Joseph Blachon; the lock maker AB[onnard?]; and the artist who executed the chiseled reliefs on the mounts, Louis Jaley. Carved on the gun's hammer is thunderbolt-wielding Jupiter, and on its battery the unfortunate mortal Semele, who was consumed by heavenly fire when she asked Jupiter for the full force of his love. The buttplate displays Heracles (left) as a hunter, carrying his arrows that never missed.

Because of its smooth release the wheellock stayed in favor for hunting rifles—especially in central Europe—even after the introduction of less complicated systems, such as the snaphance and flintlock. The German hunting rifle (above), with its stock carved and inlaid in relief by Johann Michael Maucher (1645–1701) of Schwäbisch Gmünd, is a fine example of this type.

Good luck being an essential part of hunting, it made sense that Fortuna should be found carved on the ivory patch box cover of the Maucher rifle (right). The ingeniously hidden catch button would have been the source of much amusement among hunting companions.



Detail, patch box from Maucher wheellock, showing Fortuna

NAPOLEONIC FIREARMS



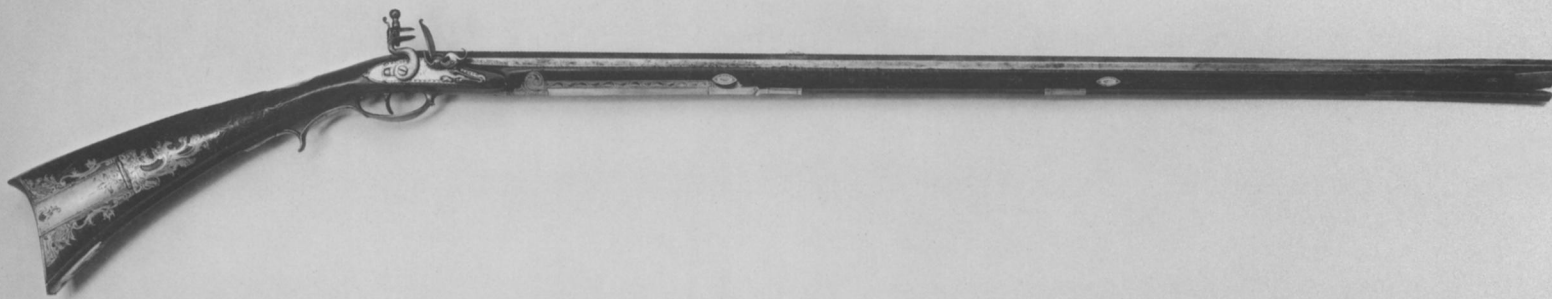
*Flintlock rifle, by Nicolas-Noël Boutet, French (Versailles),
ca. 1800, and detail of trigger guard showing Diana*

French gunsmithing during the seventeenth and eighteenth centuries set the style for the rest of Europe in the same way that French politics and fashion did. For France's standing army, the largest in western Europe, state-owned arms factories at Châtellerauld, Saint-Etienne, and Versailles turned out military muskets and pistols by the tens of thousands. As an important sideline, highly qualified specialists at Saint-Etienne and Versailles created luxury arms for presentation purposes.

Nicolas-Noël Boutet (1761–1833) was the *directeur-artiste* of the arms manufactory at Versailles. As the court gunsmith to Napoleon, he won special fame for his pistols and rifles with sumptuous silver mountings in Neoclassical style and barrels studded with tiny gold stars (above).

Diana, the goddess of the hunt, was a most appropriate figure for the ornamentation of a hunting gun, and was chosen to decorate the elegant trigger guard relief (right).





Pennsylvania / "Kentucky" flintlock rifle, by Jacob Kuntz, American (Philadelphia), ca. 1815–25

AMERICAN ARMS

In early America weapons were everyday tools of survival. The American firearm of great renown is the "Kentucky" rifle, developed during the eighteenth century in Pennsylvania by Swiss and German immigrant gunsmiths familiar with the technique of rifling the barrel (from the German *riffeln*, "to make small grooves") to give the bullet spin for greater accuracy. (The principle of the stabilizing spin, incidentally, was known in the fifteenth century and put to use with crossbow bolts that had their fletchings set at a slant.) The Kentucky rifle, with its long barrel of small caliber, was an adaptation of its German prototype to the unique conditions of the American wilderness, where a man might be on his own for weeks. The small caliber meant that the hunter could carry more bullets without extra weight; the long barrel ensured a straighter trajectory and also gave a better boost to the slow-burning, inferior grade of gunpowder then available in the colonies.

Even under these austere conditions gunsmiths managed to add artistic touches on stocks and patch boxes. The attractive Rococo scroll ornament survived into the nineteenth century, notably in German and Pennsylvania-German folk art, as on this Kentucky rifle (above) by Jacob Kuntz (recorded 1814–55). A branch of folk art in its own right was the engraving of powderhorns (right), mostly done by soldiers during the campaigns of the French and Indian Wars, the Revolutionary War, and the War of 1812.



Engraved powderhorn, American, dated 1759

On this page is illustrated another one of those fortunate cases where a weapon of historical significance can be shown alongside a depiction of it in a portrait of the owner. This silver-hilted presentation sword (below) was awarded to Colonel Marinus Willett (1740–1830) by Congress in 1777. Though ordered in Paris and not made until 1784–85, the Willett sword is decorated with patriotic American emblems, including the coat of arms of the fledgling nation. In his portrait by Ralph Earl (1751–1801) Colonel Willett proudly wears this sword of honor, together with his badge of the Society of the Cincinnati (right).



*Marinus Willett (1740–1830), by Ralph Earl (1751–1801),
ca. 1791*



*Silver-hilted sword presented to Colonel Marinus Willett,
French (Paris), hallmarked for 1785–86*



Turban helmet, Persian, probably second half of the fifteenth century



Battle ax, Syria, Mamluk period, fifteenth century

ISLAMIC ARMS

Militant from the very beginning, Islam promised its followers the delights of paradise as a reward for spreading the teachings of the Prophet with fire and sword. Muhammad himself fought in pitched battles, and his sword, *Dhu'l-faqar*, was once one of the insignia of the caliphate and is still a symbol of authority and victory.

Among the more spectacular elements of Islamic armor are the so-called turban helmets, with their boldly fluted bowls and silver damascening on a dark steel ground (above). Most surviving examples date from the fifteenth century and seem to have been made in Persia and Turkey. Although their sweeping outlines, which recall the domes of mosques, seem to be decidedly Islamic, their prototypes can be found in the much older Sasanian tradition of Persia.

In almost every culture the bearing of arms was—and is—the privilege of free men, but the Mamluks, who ruled Egypt and Syria from about 1250 to 1517, were an anomaly: a warrior aristocracy of slaves. High-ranking Mamluks took pride in having been sold for money at least once in their lives and recorded their careers as servants at the sultan's court by the badges they bore, similar to the coats of arms used by Western knights. The roundel with cup and folded napkin on this Mamluk battle ax (left) indicates that its owner was once a junior cupbearer and assistant to the master of the robes.

One of the most eye-catching of the Museum's Islamic objects is this saber (below). It is a most intriguing composite of elements from the three important centers of the world of Islam. Its blade of watered steel was forged in seventeenth-century Persia; its grip of milky jade, inlaid with delicate sprays of jeweled flowers, was fashioned in eighteenth-century Mughal India; and, according to tradition, its guard and scabbard mountings, of gold set with emeralds and diamonds, were made in Istanbul in 1876, for the enthronement of Sultan Murad V.

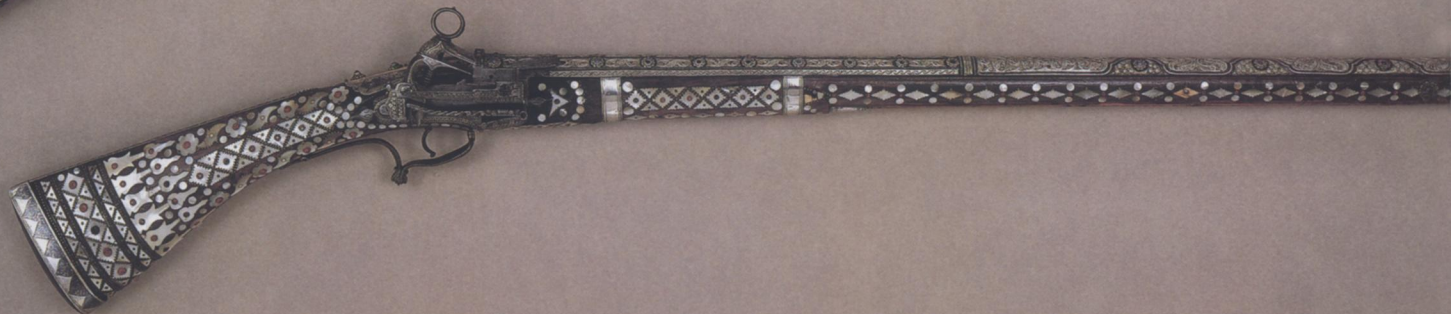
The splendor of the Mughal empire of India (1526–1857) was such that even today we use the term “mogul” to indicate enormous wealth and power. Fine weapons were coveted tokens bestowed by the ruler upon courtiers and loyal warriors. Carefully cut colored stones set into the gold of the hilt and scabbard mountings of this Mughal dagger (right) create a rich mosaic of floral motifs like those in an Oriental carpet.



Mughal dagger, from the period of Jahangir, ca. 1620



Saber, with Persian blade, Mughal grip, and Turkish guard and scabbard, ca. 1876



Saber, Turkish, mid-sixteenth century



Because of the religious prohibition against graven images and the sacred power given to the word, Islamic calligraphy was an art form that far surpassed the importance of writing to western Europeans. One of the prime instances of the attention paid to calligraphy is this Turkish saber (above), its blade thickly plated with gold into which the dialogue between Solomon and Sheba, told in Koranic quotations, is carved in exquisite lettering.

Islamic firearms show that they were derived from seventeenth-century European prototypes in the construction of their locks and in the shape of their stocks. The straight butt of the Turkish gunstock (opposite, top) is a variation on the stocks of German rifles, which in turn owe their shape to the straight crossbow butt; the gently curved butt types (opposite, bottom) are derived from French carbine stocks. North African stocks, on the other hand, had Spanish muskets as models for their flaring butts (opposite, center). Locks were mostly Spanish miquelets, but the snaphance guns of Moroccan tribal warriors, Berbers and Kabyles, were of a type introduced by Dutch traders on their way to the Indies.

Opposite:

Islamic firearms. Top, Turkish, Ottoman period, dated 1806

Center, Moroccan, Ottoman period, ca. 1750–1800

Bottom, Balkan, Ottoman period, eighteenth century



EAST & WEST

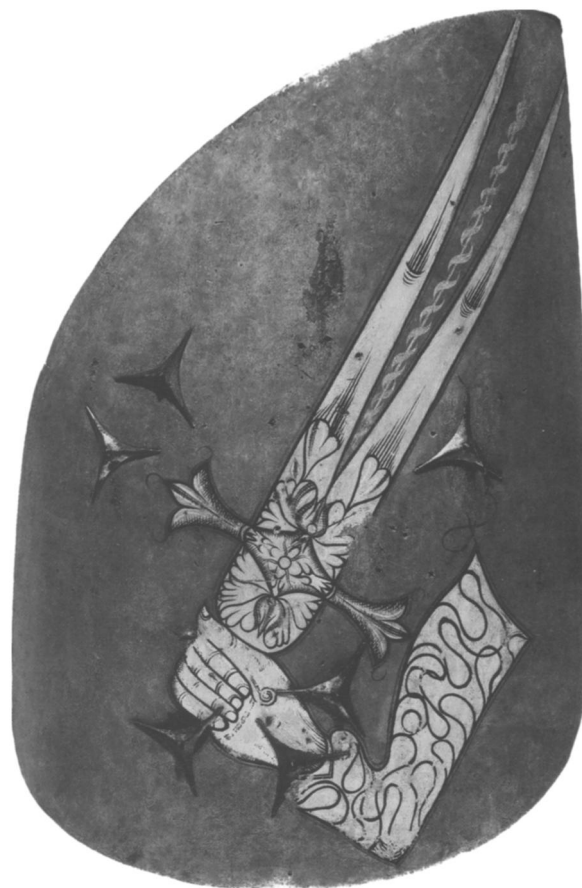
*Swords for the European market with shakudō hilts manufactured in Japan.
Left, smallsword, ca. 1720–30. Right, hunting sword, ca. 1700*

T rue warriors have traditionally respected each other, and through the ages they have often adopted equipment and fighting styles from their foes, not only out of necessity dictated by terrain or technical imbalance but also as the ultimate compliment. The most spectacular example of the combination of Western and Islamic craft is this dazzlingly colorful helmet (opposite, bottom). It is traditionally linked to Muhammad xī (abdicated 1492), known as Boabdil, the last sultan of Granada. It is the only known surviving piece of armor from Moorish Spain. The helmet itself is a Spanish sallet, probably from the armor-making center of Calatayud, near Saragossa, but Moorish craftsmen gave it regal splendor with a coat of burnished gold leaf and insets of more than a hundred plaques of delicate cloisonné enamel.

After the fall of Constantinople in 1453 the Christian nations of southeastern Europe—Croatians, Hungarians, and Serbians—were locked in a century-long struggle with the steadily advancing Turks. The Hungarian cavalry, the hussars, carried a special type of shield with an upswept tip. In the early sixteenth century the Turks seem to have captured whole arsenals full of these shields and used them—after replacing their original emblems with Islamic symbols such as the double-pointed sword of the Prophet—for their own shock troops, the

delibash (right). When the shields were eventually recaptured by Hungarians in the course of the ongoing border warfare, fighting styles in the West had changed, and thus they became trophies.

In the Age of Discovery Europeans developed a taste for the exotic. The fashion for chinoiserie made anything from the Far East highly desirable (although, for many, the differences between China, Japan, and other Asian countries were obscure). This new interest was lucrative for trading companies and merchants who supplied the European market with as wide a variety of Oriental goods as possible. Among the fashionable items were court-sword and hunting-sword hilts made in Japan for export. They were of *shakudō*, an alloy of gold and copper, acid-treated to turn a deep blue-black, used exclusively by Japanese metalworkers (opposite). Hilts of this unusual material and of unmistakably Japanese workmanship are mounted with blades bearing the names of Dutch sword cutlers. Dutch sources, however, are strangely silent about this kind of import ware. Apparently these hilts were a black-market product secretly traded by enterprising employees of the Dutch East India Company at its post at Deshima, Japan, in circumvention of the strict Japanese laws against exporting weapons or their parts.



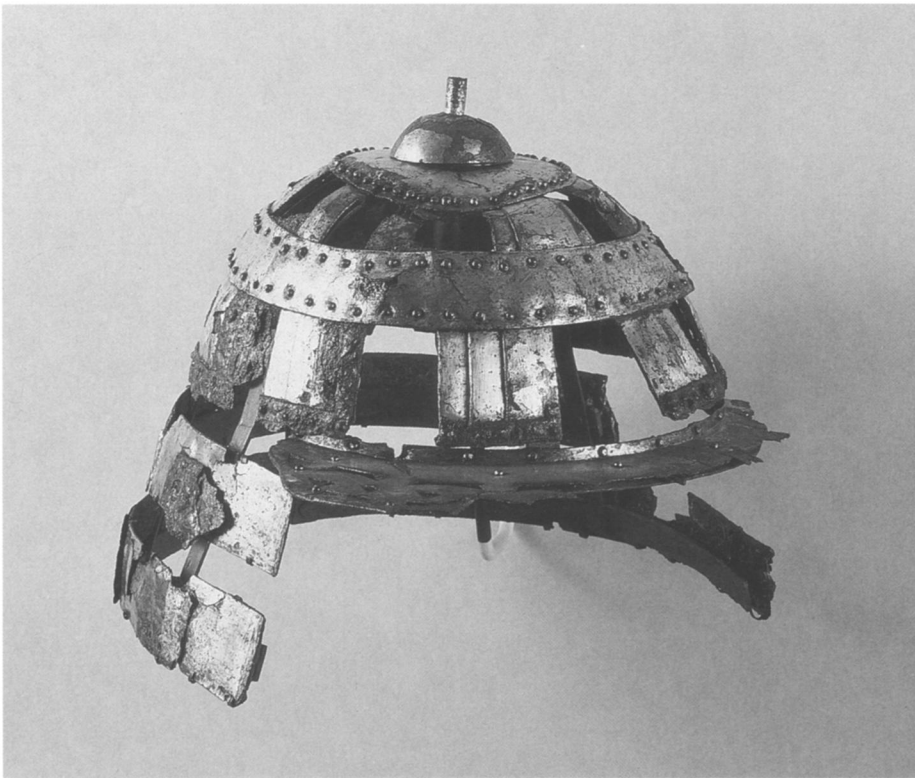
Above, Hungarian shield painted with the double-bladed "Sword of the Prophet," mid-sixteenth century. Below, Hispano-Moresque helmet, late fifteenth century



JAPANESE ARMOR

The earliest surviving pieces of arms and armor excavated in Japan belong to types that seem to have originated in central Asia. Our collection is most fortunate to include a significant group of early swords and an important helmet of lamellar construction (below) similar to specimens from the Migration Period in eastern Europe.

The most important early Japanese armor in a museum outside of Japan is this armor from the late Kamakura period (opposite), traditionally believed to have belonged to Ashikaga Takauji (1305–1358), the founder of the Ashikaga shogunate. The cuirass and skirts are entirely of lamellar construction, with the finger-long lames lacquered and laced together in horizontal overlapping rows. These rows are in turn held together by a dense system of vertical lacings; the breast of the cuirass is covered by a panel of doeskin stenciled with the image of the powerful Buddhist deity Fudō Myō-ō. Most of the original white lacings—made of bleached silk—are now gone, but at the edges of the skirts diagonally arranged multicolored lacings are still in place. The colors symbolize the rainbow, which represented both good fortune and fleeting beauty.



Helmet, Kofun period, fifth century



Armor, late Kamakura period, early fourteenth century



Cuirass with sode (shoulder defenses), Muromachi period, ca. 1550

Another early—and therefore exceptionally rare—armor in our collection is illustrated opposite. It is of *dōmaru* type, with its close-fitting cuirass closing at the right side, multiple pendant skirt plates ideal for easy movement on foot, and large *sode* (shoulder guards). Dating to the mid-sixteenth century, this armor is believed to have been presented as a gift by Daté Masamune (died 1636), one of the most famous daimyo of his time, to General Shiraishi Bungo.

The Japanese samurai and his code of Bushido—the way of the warrior—had much in common with the European knight and his code of chivalry. Although at first glance Western and Japanese armors seem totally different, there are several important parallels, such as the use of *mon*—heraldic family badges—and helmet crests to identify warriors whose faces were hidden behind protective devices—helmet visors in the West and *mempō* (war masks) in Japan (inside back cover).

Due to the highly flexible construction of Japanese armor—rows of lamellar scales laced together with silk straps—relacings were necessary at regular intervals. On those occasions changes could be made to update an heirloom armor, such as the *gusōku* (right) from the armory of Daté Yoshimura (1703–1746), daimyo of Sendai, that incorporates a prized sixteenth-century helmet bowl into an eighteenth-century ensemble.



*Armor, from the armory of Daté Yoshimura (1703–1746),
Edo period, eighteenth century*



Helmet, Momoyama period, sixteenth century

Helmet crests and the helmets themselves came in an astounding variety of shapes. Often a pair of antennaelike *kuwagata* framed the crest proper (opposite). The crest could be an emblem dictated by family tradition or one chosen according to the wearer's fancy. Some helmet bowls assumed exotic shapes, from seashells to flowers. The helmet above whimsically imitates a type of hat worn by venerable old men, with Fudō Myō-ō descending in flames as a crest.

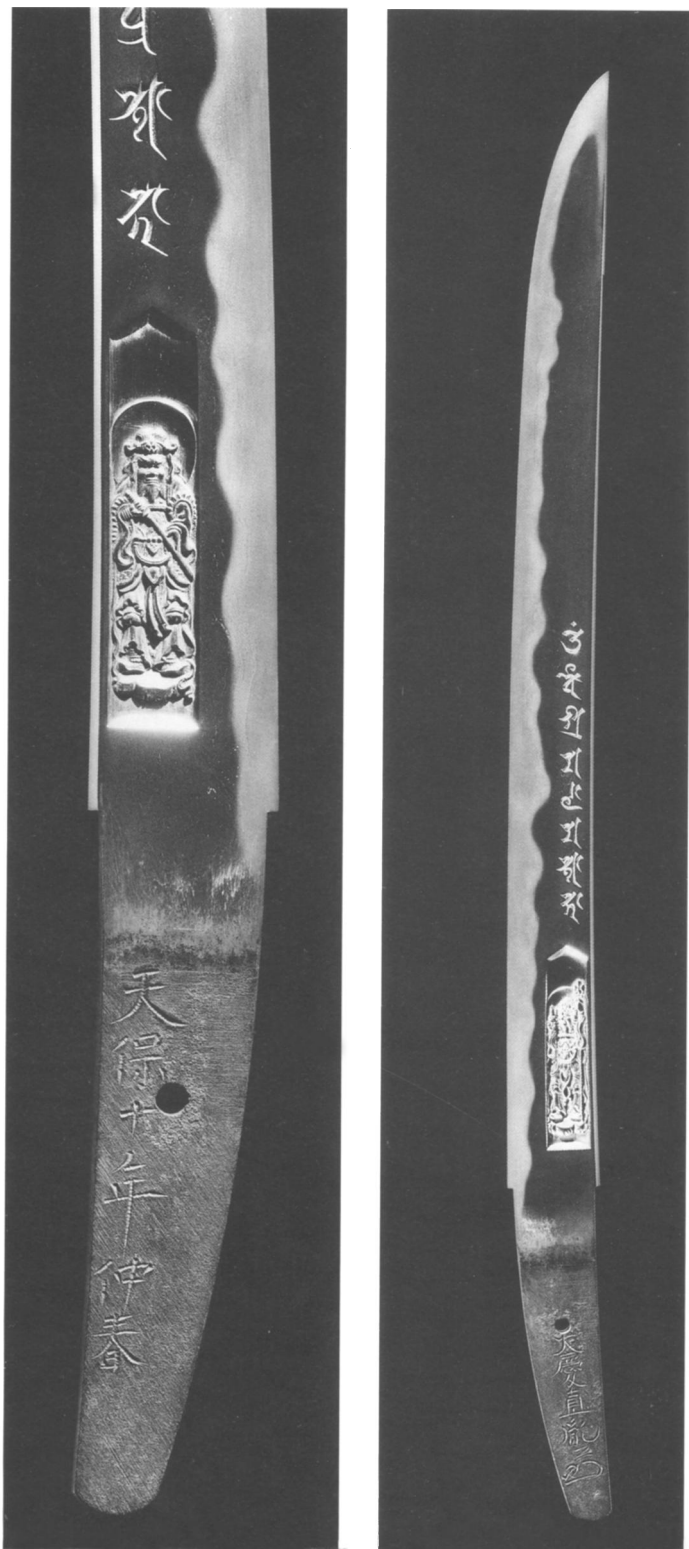
Helmet bowls constructed on the *Spangenhelm* principle (see pages 9–10), like the one at the right, have at their apex a ring-shaped reinforcement plate, with an eyelet for the practical purpose of ventilation, to pass the wearer's fashionable short queue through, and finally, metaphysically, to serve as a gateway for the fighting spirit to enter the warrior's body.



Helmet, Muromachi period, fifteenth century. Above, detail of crest. Below, front and back views



SWORD FURNITURE



The blade of the samurai's sword was regarded with almost religious awe. The laborious process of forging such a blade involved crucial steps that were jealously guarded secrets of the master smiths. Interestingly, a legend very similar to that of Wayland in Germanic lore is told of the thirteenth-century Japanese masters Muramasa and Masamune. Testing their prize blades against maple leaves drifting in a swiftly flowing stream, Muramasa's blade cut a leaf in half, but the leaf coming against Masamune's blade jerked sideways, afraid of the super-sharp edge.

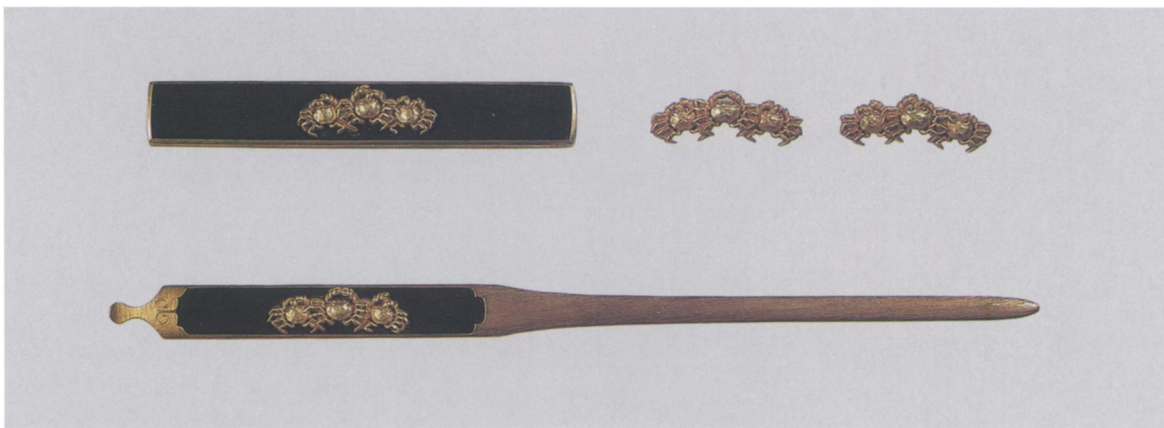
It was the privilege of the samurai to wear a pair of swords: the three-foot-long *katana* and the two-foot *wakizashi* (left). As a set they were called *daishō* (opposite, top); care was taken to match them in appearance. The construction of the Japanese sword was unique. Quite in contrast to swords elsewhere, the whole sword was made of easily assembled parts held together by a single plug that passed simultaneously through the handle and the tang of the blade. This way the components of the hilt—*tsuba* (guard; opposite, bottom), *fuchi-kashira* (pommel cap and grip ferrule), and *menuki* (grip ornaments; opposite, center)—could be quickly taken off and exchanged for another set. Ideally the elements would have decoration appropriate for specific occasions.

Sword furniture was the true jewelry of a Japanese gentleman. In fact, *shakudō* (see page 55) was invented by makers of sword furniture to circumvent sumptuary laws prohibiting the too ostentatious use of gold. The motifs for the decoration of sword furniture, like those of the miniature art form *netsuke*, could be taken from an infinite variety of subjects, from military scenes and emblems to the profound symbols of Zen philosophy and the celebration of the beauty of nature.

Wakizashi (short sword), by Naotane (1778–1857), Edo period, dated 1839, and detail of reverse, showing Fudō Myō-ō



Mountings for a daishō (matched pair of swords), fittings by Iwamoto Kunkan (1744–1801), Edo period, late eighteenth century



Set of matching sword fittings decorated with crabs: Kozuka (utility knife handle), kogai (hair-dressing tool), and menuki (grip ornaments), attributed to Gotō Sōjo (ca. 1461–1538), Muromachi period, sixteenth century



Tsuba (sword guard), with design of bamboo amid rocks, by Ishiguro Masayoshi (ca. 1772–1869), Edo period, nineteenth century

NOTES

Front cover, inside front cover: ARMOR OF HENRY II OF FRANCE. Height, 7½ in. (189.2 cm), weight 53 lb. 4 oz. (24.2 kg). Steel, silver, gold. Harris Brisbane Dick Fund, 1939 (39.121)

Frontispiece: PAGE FROM AN ILLUSTRATED MANUSCRIPT TOURNAMENT BOOK. Pen and wash on paper. The Watson Library, MMA

Pp. 6–8: SERIES OF WOODCUTS. From *Stände und Handwerker*, by Jost Amman, Frankfurt am Main, 1568 (facsimile edition, 1884, Munich). The Watson Library, MMA

P. 9: SPANGENHELM. Height, 7½ in. (19.1 cm). Iron, bronze. Gift of Stephen V. Grancsay, 1942 (42.50.1)

P. 10 (top): SHIELD BOSS (Late Roman). Height, 6¼ in. (16 cm). Iron, gold, silver, glass. Gift of J. Pierpont Morgan, 1917 (17.192.141)

P. 10 (bottom): LANGOBARDIC SHIELD BOSS (with gilt bronze griffins' heads). Height, 3½ in. (9 cm). Iron, gilt bronze. Purchase, Bequest of Stephen V. Grancsay, by exchange, and Rogers Fund, 1984 (1984.184.2)

P. 11: LANGOBARDIC SHIELD BOSS (with cruciform appliqué). Height, 3½ in. (9 cm). Iron, gilt bronze. Purchase, Bequest of Stephen V. Grancsay, by exchange, and Rogers Fund, 1984 (1984.184.1)

P. 11: VIKING SWORD. Length, 37¾ in. (96 cm). Steel, copper, silver. Rogers Fund, 1955 (55.46.1)

P. 12: ORNAMENTAL PLAQUE OF A KNIGHT. Length, 7 in. (17.8 cm). Gilt bronze. Bashford Dean Memorial Collection, Funds from various donors, 1929 (29.158.735)

P. 12: ROWEL SPUR. Length, 7¼ in. (18.4 cm). Gilt copper, enamel. Gift of William H. Riggs, 1913 (14.25.1737)

P. 13: CURB BIT. Length, 12¾ in. (31.5 cm). Iron, gilt bronze, champlévé enamel. Rogers Fund, 1904 (04.3.478)

P. 14: SWORD. Length, 40¼ in. (102.3 cm). Steel, silver, copper, leather. The Collection of Giovanni P. Morosini, presented by his daughter Giulia, 1932 (32.75.225)

P. 15: ARMOR. Height, 66½ in. (168.9 cm); weight, 41 lb. 3 oz. (18.7 kg). Steel, brass, textile. Bashford Dean Memorial Collection, Gift of Helen Fahnestock Hubbard, in memory of her father, Harris C. Fahnestock, 1929 (29.154.3)

P. 16 (top): SALLET. Height, 12 in. (30.5 cm); weight, 5 lb. (2.3 kg). Steel, gilt copper. Bashford Dean Memorial Collection, Gift of Edward S. Harkness, 1929 (29.156.45)

P. 16 (center): WAR HAT (chapel-de-fer). Height, 10¼ in. (26 cm); weight, 6 lb. 7 oz. (2.9 kg). Steel. Rogers Fund, 1904 (04.3.228)

P. 16 (bottom): RENNHUT. Height, 12 in. (30.5 cm); weight, 9 lb. (4.1 kg). Steel, gold. Bashford Dean Memorial Collection, Gift of Mr. and Mrs. Alexander McMillan Welch, 1929 (29.153.1)

P. 17: PORTIONS OF A FLUTED ARMOR. Steel, gold. Gift of William H. Riggs, 1913 (14.25.716)

P. 18: PORTIONS OF A COSTUME ARMOR. Steel, gold. Sleeves: Gift of Bashford Dean, 1924 (24.179). Backplate with hogue: Mrs. Stephen V. Harkness Fund, 1926 (26.188.1,2)

P. 19: ARMOR FOR MAN AND HORSE. Horse armor: Steel, leather. Rogers Fund, 1932 (32.69a–h). Man's armor: Steel, leather. Bashford Dean Memorial Collection, Gift of Mrs. Bashford Dean, 1929 (29.151.2)

P. 20: TOURNAMENT HELM. Height, 17¾ in. (45 cm); weight, 18 lb. 7 oz. (8.5 kg). Steel, brass. Bashford Dean Memorial Collection, Gift of Edward S. Harkness, 1929 (29.156.67)

P. 20: TOURNAMENT TARGE. 26¾ x 21¼ in. (68 x 54 cm). Wood, leather, gesso, silver foil, polychromy. Gift of Clarence H. Mackay, 1930 (30.101)

P. 21: FIELD AND TOURNAMENT ARMOR. Height, 73 in. (185.5 cm); weight, 80 lb. 4 oz. (36.7 kg). Steel, gold. Purchase, William H. Riggs Gift and Rogers Fund, 1919 (19.131.1,2)

P. 22: ARMOR OF GEORGE CLIFFORD. Height, 69½ in. (176.5 cm); weight, 60 lb. (27.2 kg). Steel, gold. Munsey Fund, 1932 (32.130.6)

P. 23: PEN AND WATERCOLOR DRAWINGS. Illustrations from the *Jacobe Album*, The Victoria and Albert Museum, London

P. 24 (top): PARADE BURGONET. Height, 9½ in. (24.1 cm); weight, 4 lb. 2 oz. (1.9 kg). Steel, gold. Gift of J. Pierpont Morgan, 1917 (17.190.1720)

P. 24 (bottom): LION-HEADED SALLET. Height, 11¾ in. (30 cm); weight, 8 lb. 4 oz. (3.7 kg). Steel, gilt copper, silver, semiprecious stones. Harris Brisbane Dick Fund, 1923 (23.141)

P. 25: PARADE BURGONET. Height, 14 in. (35.5 cm); weight, 5 lb. 6 oz. (2.4 kg). Steel, gold. BURGONET: Rogers Fund, 1904 (04.3.217). Buffe: Joseph Pulitzer Fund, 1922 (22.140)

P. 25: COSIMO II DE' MEDICI (1590–1621), GRAND DUKE OF TUSCANY. Workshop of Justus Sustermans, 78 x 48 in. (198.1 x 121.9 cm). Oil on canvas. Gift of Bashford Dean, 1922 (22.150)

P. 26: PARADE SHIELD. Diameter, 24½ in. (62.5 cm). Wood, leather, gesso, gold, paint. Gift of Stephen V. Grancsay, 1942 (42.50.16)

P. 27: SHIELD OF HENRY II OF FRANCE. Height, 25 in. (63.5 cm); width, 18 in. (45.7 cm). Steel, gold, silver. Harris Brisbane Dick Fund, 1934 (34.85)

Pp. 28–29: FIELD ARMOR. Height, 62½ in. (158.8 cm); weight, 46 lb. 12 oz. (21.2 kg). Steel, gold, silver. Fletcher Fund, 1938 (38.148.1a–n)

P. 30: ARMOR FOR HEAVY CAVALRY. Height as mounted (including modern boots), 71½ in. (181.6 cm); weight, 77 lb. 11 oz. (35 kg). Steel, gold, leather, textile. Rogers Fund, 1927 (27.177.1)

Pp. 31–32: PARADE ARMOR OF LUIS. Height, 28 in. (71.1 cm). Steel, gold, gilt brass, silk, metallic thread. Purchase, Armand Hammer Gift, 1989 (1989.3)

P. 33: PARADE HELMET AND SHIELD. Helmet: height, 17½ in. (43.5 cm); weight, 13 lb. 6 oz. (6 kg). Shield: height, 23½ in. (58.8 cm); weight, 13 lb. 11 oz. (5.9 kg). Bronze, gold, silver. Rogers Fund, 1904 (04.3.259,260)

P. 34: PAVISE. Height, 42½ in. (108 cm). Wood, leather, gesso, silver foil, polychromy. Bashford Dean Memorial Collection, Funds from various donors, 1929 (29.158.595)

P. 34: CEREMONIAL ARROWHEAD. Length, 12¼ in. (30.6 cm). Steel, brass. Rogers Fund, 1966 (66.199)

P. 35: SWISS DAGGER. Length (in scabbard), 15¼ in. (40 cm). Steel, gilt bronze, wood. Rogers Fund, 1904 (04.3.130–132)

P. 36: PARADE HALBERDS. Left: Length of blade, 23¼ in. (59.1 cm). Steel, wood, textile. Gift of William H. Riggs, 1913 (14.25.300). Center: Length of blade, 26¾ in. (68.1 cm). Steel, gold, wood. Rogers Fund, 1904 (04.3.80). Right: Length of blade, 24¼ in. (61.5 cm). Steel, gold, wood, textile. Gift of Mary Alice Dyckman Dean, in memory of Alexander McMillan Welch, 1949 (49.120.13)

P. 37 (bottom): MORION. Height (excluding chin straps) 10½ in. (26.7 cm); weight, 4 lb. 1 oz. (1.8 kg). Steel, gold, paint, gilt bronze, leather. Rogers Fund, 1904 (04.3.224)

P. 37 (top): GLAIVE. Length of blade, 28½ in. (71.4 cm). Steel, copper, gold, silver, wood, velvet. Bequest of Alan Rutherford Stuyvesant, 1954 (54.46.16)

P. 38 (top): RAPIER, BY ISRAEL SCHUECH. Length, 48 in. (122 cm). Gilt bronze, enamel, jewels, shell cameo, steel. Fletcher Fund, 1970 (1970.77)

P. 38 (bottom): RAPIER OF AMBROGIO SPINOLA. Length, 46¾ in. (117.8 cm). Steel. Rogers Fund, 1932 (32.130.4)

P. 39: PRESENTATION SWORD. Length, 41½ in. (105.4 cm). Silver gilt, enamel, paste jewels, steel. Gift of Jean Jacques Reubell, in memory of his mother, Julia C. Coster, and of his wife, Adeline E. Post, both of New York City, 1926 (26.145.315)

P. 40: CROSSBOW. Length, 28¼ in. (21 cm). Wood, iron, ivory, horn, whalebone, birchbark. Rogers Fund, 1904 (04.3.36)

P. 41: HUNTING SWORD. Length, 29½ in. (74.9 cm). Ivory, silver gilt, steel, leather. Gift of Jean Jacques Reubell, in memory of his mother, Julia C. Coster, and of his wife, Adeline E. Post, both of New York City, 1926 (26.145.243)

P. 42 (top): DOUBLE-BARRELED WHEELLOCK PISTOL. Length, 19¾ in. (49.2 cm). Steel, gold, wood, bone. Gift of William H. Riggs, 1913 (14.25.1425)

P. 42 (bottom): FLINTLOCK HUNTING GUN. Length, 55 in. (140 cm). Steel, pearwood, gold, silver, brass, mother-of-pearl, bone. Rogers and Harris Brisbane Dick Funds, 1972 (1972.223)

P. 43: PAIR OF IVORY-STOCKED FLINTLOCK PISTOLS. Length, 14½ in. (36.2 cm). Steel, ivory, gold, brass. Gift of John M. Schiff, 1986 (1986.265.1,2)

Pp. 44–45: WHEELLOCK RIFLE. Length, 41½ in. (105.7 cm). Steel, wood, ivory, mother-of-pearl, brass. Gift of Stephen V. Grancsay, 1942 (42.50.8)

P. 44: FLINTLOCK SPORTING GUN. Length, 57½ in. (147 cm). Steel, walnut, gold, silver. Harris Brisbane Dick and Rogers Funds, 1987 (1987.274)

P. 46: FLINTLOCK RIFLE. Length, 43½ in. (110.5 cm). Steel, walnut, silver, gold. Fletcher Fund, 1970 (1970.179.1)

P. 47 (top): PENNSYLVANIA/"KENTUCKY" FLINTLOCK RIFLE. Length, 59¼ in. (150.5 cm). Steel, maple wood, brass, silver, bone, horn. Rogers Fund, 1942 (42.22)

P. 47 (bottom): ENGRAVED POWDERHORN. Height, 11¼ in.

(28.5 cm). Cow horn. The Collection of J. H. Grenville Gilbert, of Ware, Massachusetts. Gift of Mrs. Grenville, 1937 (37.131.4)

P. 48: MARINUS WILLETT (1740–1830). By Ralph Earl, 91¼ x 56 in. (231.8 x 142.2 cm). Oil on canvas. Bequest of George Willett Van Nest, 1916 (17.87.1)

P. 48: SILVER-HILTED SWORD. Length, 39½ in. (100.7 cm). Steel, silver, gold. Bequest of George Willett Van Nest, 1916 (17.87.3)

P. 49: PRESENTATION COLT REVOLVER. Pistol: Length, 11½ in. (29 cm). Steel, gold, silver. Case: 8½ x 15½ x 1½ in. (22 x 38.3 x 4.1 cm). Rosewood, silver, velvet. Gift of Mr. and Mrs. Jerry D. Berger, 1985 (1985.264)

P. 50: TURBAN HELMET. Height, 13½ in. (34 cm). Steel, silver. Purchase, Anonymous Gift, 1950 (50.87)

P. 50: BATTLE AX. Height, 10¼ in. (26 cm). Steel, gold (wooden shaft modern). Bashford Dean Fund, 1969 (69.156)

P. 51: SABER. Length, 39¾ in. (101 cm). Steel, gold, gilt brass, jade, diamonds, emeralds, pearls. Gift of Giulia P. Morosini, in memory of her father, Giovanni P. Morosini, 1923 (23.232.2a,b)

P. 51: MUGHAL DAGGER. Length, 14 in. (35.6 cm). Steel, gold, emeralds, rubies, spinels, glass, wood, silk. Purchase, Harris Brisbane Dick Fund and The Vincent Astor Foundation Gift, 1984 (1984.332)

Pp. 52–53: SABER. Length, 37½ in. (96.1 cm). Steel, gold, wood, leather. Bequest of George C. Stone, 1935 (36.25.1297)

P. 52: ISLAMIC FIREARMS. Top: Length, 48 in. (122 cm). Steel, wood, silver, gold. The Collection of Giovanni P. Morosini, presented by his daughter Giulia, 1932 (32.75.271). Center: Length, 76¾ in. (194 cm). Steel, wood, silver, coral. The Collection of Giovanni P. Morosini, presented by his daughter Giulia, 1932 (32.75.274). Bottom: Length, 62¾ in. (159.5 cm). Steel, wood, brass, silver, mother-of-pearl, coral. Bequest of George C. Stone, 1935 (36.24.2148)

P. 54: SWORDS WITH SHAKUDŌ HILTS. Left: Length (out of scabbard), 38 in. (96.5 cm). *Shakudō* (gold/copper alloy), gold, steel, leather. Gift of Jean Jacques Reubell, in memory of his mother, Julia C. Coster, and of his wife, Adeline E. Post, both of New York City, 1926 (26.145.327). Right: Length, 28½ in. (72.3 cm). *Shakudō* (gold/copper alloy), gold, steel, wood covered with ray skin. Gift of Jean Jacques Reubell, in memory of his mother, Julia C. Coster, and of his wife, Adeline E. Post, both of New York City, 1926 (26.145.260)

P. 55 (top): HUNGARIAN SHIELD. 32½ x 21½ in. (82.5 x 55 cm). Wood, leather, gesso, paint; iron rivets. Rogers Fund, 1949 (49.57.1)

P. 55 (bottom): HISPANO-MOESQUE HELMET. Height, 7½ in. (20 cm). Steel, gold, silver, cloisonné enamel. Purchase, The Vincent Astor Foundation Gift, 1983 (1983.413)

P. 56: HELMET, KOFUN PERIOD. Height, 8½ in. (21.6 cm). Iron, gilt copper. Fletcher Fund, 1927 (28.60.2)

P. 57: ARMOR, LATE KAMAKURA PERIOD. Height (as mounted), 37½ in. (95.3 cm). Lacquered iron and leather, gilt copper, silk, stenciled leather. Gift of Bashford Dean, 1914 (14.100.121)

P. 58: CUIRASS WITH SODE. Height as mounted, 35½ in. (92 cm). Lacquered iron and leather, copper alloy, silk. Gift of Bashford Dean, 1914 (14.100.120)

P. 59: ARMOR. Height, 67½ in. (171.5 cm). Lacquered iron, mail, silk. Gift of Bashford Dean, 1914 (14.100.172)

P. 60: HELMET, MOMOYAMA PERIOD. Height 16½ in. (41 cm). Lacquered iron, copper. Bequest of George C. Stone, 1935 (36.25.81)

P. 61: HELMET, MUROMACHI PERIOD. Height, 12½ in. (30.6 cm). Lacquered iron, gilt copper, stenciled leather, silk. Rogers Fund, 1913 (13.112.10)

P. 62: WAKIZASHI (short sword). Length, 20 in. (50.8 cm). Steel. Gift of Brayton Ives and W.T. Walters, 1891 (91.2.84)

P. 63: MOUNTINGS FOR A DAISHŌ. *Wakizashi*: Length, 20¾ in. (52.7 cm). *Katana*: Length, 25¼ in. (64.2 cm). *Shakudō* (gold/copper alloy), gold. The Howard Mansfield Collection, Gift of Howard Mansfield, 1936 (36.120.148,147)

P. 63: SET OF MATCHING SWORD FITTINGS. *Kosuka* (utility knife handle): Length, 3½ in. (9.8 cm). *Kogai* (hair-dressing tool): Length, 8¼ in. (21 cm). *Memuki* (grip ornaments): Length, 1½ in. (3.5 cm). *Shakudō* (gold/copper alloy), gold. Rogers Fund, 1945 (45.24.52a–c)

P. 63: TSUBA (sword guard). 2½ x 2½ in. (7.3 x 6.7 cm). Copper alloys (*shakudō*, *shibubichi*), gold, copper. The Howard Mansfield Collection, Gift of Howard Mansfield, 1936 (36.120.79)

Inside back cover: MEMPO (face mask). Height, 9½ in. (24.1 cm). Lacquered iron, textile. Rogers Fund, 1919 (19.115.2)



Mempō (face mask), by Myōchin Muneakira (1673–1745), Edo period, dated 1745