Sculpture in Steel:

A MILANESE RENAISSANCE BARBUTE

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In 1928 George A. Douglass was negotiating eagerly for an important addition to his collection of medieval and Renaissance arms and armor. Both Mr. and Mrs. Douglass had been frequent visitors to the Museum for many years, and here Mr. Douglass came to know Bashford Dean, the first Curator of Arms and Armor, with the inevitable result that he developed a strong interest in the subject. Douglass was now in pursuit of an unusually attractive Milanese helmet, of a type called a barbute (Figure 1). It was one of the gems in the collection of Baron Charles Alexander de Cosson, who, like Dean, was a leading scholar in the field. De Cosson had formed several collections over a long period as an antiquary, and at this time he was engaged in making arrangements for his third sale at Christie’s in London. He was therefore reluctant to let the helmet go. “You will easily understand,” he wrote to Douglass, “that I cannot sell one of my most important pieces separately before the sale without preju-

dice to its success." Nevertheless, like the true collector he was, Douglass persisted in his negotiations for the helmet, and finally de Cosson gave in. "I am very glad that you should possess my fine barbute," he wrote, accepting Douglass's offer, "for you evidently thoroughly appreciate its beauty."

De Cosson had acquired the helmet from Professor Luigi Grassi of Florence, who in turn had bought it with seven other barbutes from Count Gino di Cittadella, who had a collection in the Villa Saonara, near Padua. De Cosson, who lived in Florence and was likely to know of any fine pieces in his bailiwick, had first choice of the barbutes. The late Sir Guy Laking, former Keeper of the Wallace Collection and Keeper of the King's Armoury, in his Record of European Armour and Arms Through Seven Centuries called de Cosson's selection "perhaps as grand a specimen as any known." Laking, incidentally, had a keen appreciation for this type of headpiece, for he had not only a remarkable series of barbutes in his professional charge, but also possessed several outstanding examples in his own private collection.

One of these came to this Museum by way of the famous Clarence H. Mackay collection.

The helmet Douglass wanted so badly has now been presented to the Museum by Mrs. Douglass, in memory of her husband. It is a masterpiece of Renaissance metalwork, a fine example of formal beauty resulting from functional efficiency. For although it was designed with an eye both to beauty and utility, the principal aim of the armor was to protect the wearer from injury. The contour follows the lines of the head, protecting the cranium and the sides of the face and neck, and curves outward at the nape for defense against blows from behind. Following the T-shaped face opening is an applied rectangular border to prevent a weapon from glancing off the headpiece into the wearer's face. Around the center of the bowl is a row of rivets that held the strap to which the lining was sewn, which in turn suspended the bowl above the head and kept the edge from being smashed into the shoulders and collarbones. Below these on each side are two rivets by which chin straps were fastened to hold the helmet on securely. The lower border
is rolled outward over a wire, making the edge both smoother and stronger.

But in satisfying these functional requirements, the helmet became a work of great beauty. Like all the Museum’s barbutes, it is of excellent workmanship, for the armorers who made such pieces had to spend years as apprentices at their complex and demanding craft before they became masters and were allowed to fashion armor by themselves. But this barbute is superior in its design as well. Like most early armor, it is designed simply, and its simplicity is what makes it so beautiful. Its shape is singularly graceful and elegant, showing the intrinsic beauty of the plain surface of skillfully modeled metal. It is aesthetically as important as a noteworthy piece of sculpture, for the armorer who made it was actually a sculptor, working with that most intractable material—steel.

The pure silhouette of the piece, however, is only a part of the original decorative scheme. Italian armorers of the fifteenth century had learned to combine simplicity of line with protective features that could hardly be improved upon; hence the energies of artists were increasingly expended upon ornamentation and enrichment. This helmet was not only a protection against the weapons of an enemy, but at the same time an attractive element of dress, ornamented by all the means known to art. It belongs to an age of steel and velvet, when it was customary to use velvet not only in costume, but also as a covering for the elements of armor and the trappings of horses. While the applied border around the face opening of this helmet served principally to deflect blows, it also originally secured a fabric covering—probably velvet, but possibly even silk. A feature of this headpiece, furthermore, as well as of a number of other barbutes in the Museum’s collection, is a keyhole-shaped perforation at the summit for attaching a tall, decorative crest. Unfortunately, both fabric and crest have long since disappeared, as is almost always the case with helmets of this type.

A barbute with its rich velvet or silk covering, gilded bronze borders, and personal crest formed an ensemble of great elegance. Excellent examples may be seen in contemporary representations, such as Pisanello’s sketch dated 1448 for the medal of Alfonso of Aragon in the Louvre (Figure 3) and in the Museum’s intarsia-paneled study (about 1479-1482) of Federigo da Montefeltro, duke of Urbino (Figure 2). Among the weapons and armor shown in Duke Federigo’s trompe l’œil closet is a barbute surmounted by the crowned Montefeltro eagle. The Duke, who was the greatest condottiere of his day, no doubt had an actual helmet of this type in his armory.

In spite of their richness, such helmets were still essentially functional. Parade pieces made
developed in the fifteenth, when it was widely worn during the constant civil wars of the period. One counted men-at-arms in Italy by barbutes, as in France they were counted by lances, the term referring not to a individual but to a fighting unit. For example, in some documents a barbuta was defined as due corazzie con due cavalli—"two cuirasses with two horses," or two mounted men and two on foot, and there were doubtless other variations in the number comprising the unit.

The barbute is an exclusively Italian form that developed from the basinet, as may be seen in the drawings on the following pages. The basinet derived in turn from the conical Norman casque, which in turn had its prototype in barbarian and Near Eastern examples. The design of medieval armor evolved out of combat experience; as the wearer suffered injuries in unprotected areas, additions and modifications were made in his armor, with weight as the main limiting condition. In the development of the basinet from the simple casque, the bowl was made taller to present a glancing surface to blows and to give more space above the cranium, and the back and sides were extended to protect more of the face and neck. A hood of mail, called a camail, was added, to give further protection to the chin, neck, and shoulders; and a visor was introduced, first hinged at the forehead and later pivoted at the sides.

An explanation of the unusual nomenclature of this headpiece is probably necessary. The term barbute came into use in Italy in the fourteenth century, but the form as we now know it was simply for display, of which almost no examples any longer exist, were often embellished with jewels and precious metals. Such exaggerated ornament may be seen on a unique Italian helmet in the Museum (Figure 4), the bowl of which is completely covered by a lion’s mask of gilded copper with enamel eyes. Other pieces are known only from documents. It is recorded, for example, that the Florentines presented Duke Federigo, on his triumphal entry into the city after his successful campaign of 1472, with “a silver helmet studded with jewels and chased in gold by the masterly hand of Pollaiuolo.” And the Venetian historian Marino Sanuto (1466-1533) quotes the Florentine sculptor and architect Andrea Sansovino (1460-1529), concerning a helmet made by two goldsmiths, Vincenzo Levriero and Luigi Caorlini, and sold to the Sultan of Turkey. The crest was of gold, enriched with pearls, emeralds, rubies, and four diamonds that alone were worth ten thousand ducats.

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The prototype of the barbute may be seen in a basinet from Chalcis, dating from 1410 to 1440, portrayed in the drawings. It retains veventelles along the edges for attaching a camail. Minus the camail, and with a rounded bowl to conform with the contour of the head, this helmet would qualify as a barbute. In fact, the transition from basinet to barbute is largely a change in proportion. Some basinetts were so tall that they rested on the shoulders and collarbone, hence it was necessary to shorten them, and the barbute was the result.

The barbute may have gotten its name from the fact that it usually lacked protection for the lower part of the face and therefore exposed the beard (*barbuta*). Another possible explanation is that the camail often worn with the early type resembled a beard. An excellent document showing a beardlike camail is the equestrian statue of Can Grande della Scala (died 1329) in Verona (Figure 5). The *celata* (literally “concealed”) has a similar descriptive derivation, for the *barbuta* became the *celata* when it protected and concealed the entire face by attaching a beaver. Both terms are often used to describe the Italian headdress.

Precise nomenclature is in fact nearly impossible in this area. The barbute is by some scholars called the barbute-sallet, because like the sallet, which is also a fifteenth century type, it does not enclose the whole head and offers most protec-
Barbute-sallet
Milanese, about 1475

Barbute-sallet covered by a copper-gilt lion's mask
Italian, about 1460 (Figure 4)

Sallet
German, about 1475

The form of the barbute was in one other important sense not a new one. The close-fitting barbute, with its narrow opening for the eyes and nose, very much resembles the Corinthian helmet of the Greeks (Figure 8). The barbute, of course, had an independent origin, and this is simply a case of recurrence of type—forged in steel instead of bronze. It belongs to a period, however, when a very strong leaning toward the antique prevailed, and this classical bias may well have inspired the perfection of form of the headpiece. Roman versions of Greek reliefs and other sculpture were well known in the period, and helmets of this type frequently appear in portrayals of mythological subjects. It may be that the classical influence was direct as well as spiritual. In any event the Greek ideal of purity and simplicity of form was admirably re-created by the Renaissance armorer.

It was particularly in Venice that such a type of headpiece was worn. This barbute like many others bears the stamp of the Venetian Republic, the lion of St. Mark, impressed near the lower-right front border. The mark, illustrated at the right, is barely legible, and the accompanying drawing shows its intended appearance. Since thousands of such barbutes were originally worn in Venice, it is thought by some experts that the stamp was a mark of ownership.
by the Venetian Republic—perhaps the Arsenal of Venice itself—in the same way that the broad-arrow stamp indicates British government ownership. On the other hand, the Venetian stamp may be simply a control mark, indicating that head-pieces bearing it were sold in Venice or exported by way of Venice. There is a record of payment in the Archives of Tours, France, indicating that it was customary to stamp armor in this way: A Jehan Harane, of Tours, for avoir gravé les armes de la ville en 2 poinsons de fer pour marquer les harnois et brigandines vendues en lad. ville 30 s. ("To Jehan Harane, goldsmith, for having carved the arms of the city on two iron punches in order to mark the harnesses and brigandines sold in that city thirty sous").

At any rate the marks of Venice that I have examined are shallow and often imperfect, an indication that the impression was made on the cold metal—or after the helmet was completed. There is even better evidence, however, that this helmet was not made in Venice. There are three armorer’s marks stamped at the back of the bowl on the right side. The impressions are deep and hence must have been stamped into the metal while it was heated. Two of the marks, the letters IdB surmounted by a double cross with split foot (shown above), appear side by side, and above them is the mark of a goat’s or ram’s head.

Trademarks were in general use at this time; each merchant or craftsman had his own. It is known that great importance was attached to marks by armorers, and documents show that lawsuits were filed claiming improper use of them. Having forged the metal deftly into creations that were characteristic of his individual skill, the armorer stamped deeply into the finished work his mark, a guarantee of quality. Each armorer’s work was unique, and it was understood that since a distinguished armorer’s work could not be duplicated by anybody else, his mark should not be copied either. Hence the identification of a mark is of considerable importance, for although the lack of identifiable marks on many of the best examples of early armor is notorious, when they do exist they are virtually the signature of the artist.

There are recorded only two other elements of armor, both barbutes, that bear the same marks. One, in the Kunstgewerbe Museum in Cologne (Figure 6), also came from the collection of Count Cittadella. Another is in the Tower Armouries in London (Figure 7). All three helmets display marked similarities in design, and the same fine technique. They are evidently the work of a master.

The previous owner of our helmet, de Cosson, ingeniously deciphered these marks, and so identified not only the maker but the source of these pieces. While studying the problem of identification, he learned that one of the biggest armed ships on Lake Como in 1449 belonged to Milan and was called La Bichignola. He also learned that bichignola in old Milanese dialect meant "rammish, goatish, smelling of a goat," and it occurred to him that this might be the word symbolized by the ram’s or goat’s head used as the armorer’s mark. It was of course fairly common among artists in all fields to use as a mark a device that was a play on the artist’s name, and there did in fact exist an armorer whose nickname was Bichignola, although for several cen-

6. Barbute, with Bichignola’s mark. Italian (Milan), about 1470. Kunstgewerbe Museum, Cologne
turies he had been merely a name in contemporary documents. In 1470 Louis XI of France asked Duke Galeazzo Maria of Milan to send to France the armorer Jacobino Ayroldo, with twelve other experienced armurers and their tools, to make armor for the king and the lords and knights of his court. (The stamp IA on a beaver in this Museum may be that of Jacobino Ayroldo.) Bichignola was apparently one of these armurers, for a letter from the Duke of Milan to Louis, dated March 20, 1472, asks for the release of Jacobo, called Bichignola of Milan, armurer and skilful master, imprisoned and charged with smuggling arms in the dominion of the king for the use of the king's enemies. Like other dealers in arms, before and since, Bichignola seems to have felt no scruples about providing arms simultaneously to both sides. Bichignola's real name, Jacobo da Canobbio, appears in another document, but he appears to have used his colorful nickname in his marks, for the initials IDB apparently stand for Jacobo detto ("called") Bichignola.

It is not surprising that these helmets are associated with Milan. They show the inimitable Milanese touch. Milan for several centuries was the great center where all that was newest and most beautiful in armor first appeared, and the gradual development and improvement of plate armor was accomplished during the fourteenth and fifteenth centuries in Milanese workshops. Moreover, the Milanese controlled the Alpine passes on which trade between Italy and western Europe largely depended. When he was in Avignon (1350-1389), Francesco di Marco Datini, the famous merchant of Prato, at first dealt chiefly in armor, mainly imported from two Milanese firms, Basciamuolo of Pescina and Danesruollo of Como. The pieces, principally helmets and cuirasses, were carefully wrapped in straw and packed in canvas bales, which were then carried on muleback across the Alps—the journey by Pavia and Avigliana taking about three weeks.

From Milan Europe was supplied not only with its best armor but with armurers. Milanese armurers were renowned outside Italy, and there was great rivalry between princes to secure their services abroad. Charles V (1364-1380) and Charles VI (1380-1422) introduced Milanese armor to Paris, and there was an important colony of Lombard armurers in Lyons that continued to prosper well into the sixteenth century. And Froissart informs us in his Chronicles that when the Earl of Derby, afterward King Henry IV of England, had to carry out an affair of honor with the Duke of Norfolk in 1398, he applied to Duke Galeazzo Visconti for a suit of armor. Galeazzo not only allowed him free choice amongst his own, but also sent four of his best armurers to set the armor room of the Earl in order.

This helmet represents the superb technique of the Milanese armurer at its finest. In armor, aesthetic perfection derives from technical perfection, and the manner in which this piece was fashioned is one of its most fascinating features. It is essentially constructed of iron, but the outer surface is of well-tempered, hardened steel, ingeniously welded to the iron core.

The making of steel from iron was largely a mystery until the eighteenth century. There were some artisans who knew how to accomplish it, but they kept their methods a secret and apparently had little or no understanding of the chemistry involved. In the Middle Ages and Renaissance, little was known about the nature of steel
except that it was an ironlike material that, unlike iron, could be hardened by quenching the heated metal in cold water. It was generally believed that the production of steel depended upon the type of iron ore used, and there was no inkling that the difference between iron and steel lay in the amount of carbon retained in the metal during the smelting and forging processes.

When the ore was smelted, in a small furnace between layers of charcoal, the metal produced was very irregular, since the temperature was not high enough to melt it completely and make it homogeneous. It emerged from the furnace in the form of a paste: partly iron, with the carbon absorbed from the charcoal burnt out of it, and partly iron approaching steel, with traces of carbon fused into it. The smith apparently separated these parts according to the way they looked, and welded pieces of similar composition into lumps: some iron, some steel or steely iron.

The armorer received these lumps from the smith hammered into bars or plates. He reheated them to welding temperature, and hammered them together into bars with one surface of iron and the other of steel. Pieces would be cut from these bars as needed and pounded out into plates for shaping into armor elements. The initial work of shaping was done hot, but by far the greater part of the process was accomplished upon the cold metal. The initial heavy hammering was done from the inside—i.e. the iron side; the later work from the exterior, or steel side. The armorer used hammers of various forms, to spread the metal or to draw it together. To keep weight to a minimum the piece was forged to varying thicknesses, and was heaviest at the points where greatest protection was needed.

Since the hammering caused the steel to become superhardened and therefore brittle, it was necessary to soften it from time to time by annealing, or heating. When the forging was finished, the heated steel was quenched in water to produce an extremely hard outer surface, capable of taking a glasslike polish and proof even against crossbow bolts. In Chastellain's chronicle of the Flemish champion Jacques de Lalain, one of Lalain's jousting opponents, Messire Jean de Boniface, in the service of the Duke of Milan, is described as wearing a harness trempé... d'une eau qui le tenuit si bon que fer ne pouvait prendre sus ("quenched in water that so hardened it that it could not be penetrated"). It is thus easy to understand why the monarchs of Europe endeavored to transplant the armurers of Milan to their soil: the knight in Milanese armor was virtually invulnerable.

Fine elements of armor, such as the barbute that Mrs. Douglass has presented to the Museum, still serve as an inspiration to metalworkers today. Engineers may find especial fascination in the work of the ancient armurer, for even now it is a major problem to make efficient dies for pressing steels and alloys into specified shapes. But it is perhaps the modern diemaker, who meticulously follows the mathematical specifications on a blueprint, who can best appreciate the fine contours of an element of armor that results from the unaided coordination of hand and eye, with only an occasional check made with a stiff paper pattern.

It is necessary to go to Milan if one wishes to see the cathedral and the castle, two great monuments of the art and history of the Milanese. But it is not obligatory to go to Milan to study another of its great arts—that of the armurer. Some of the most remarkable Milanese armor extant is exhibited in this Museum.
9. The Museum’s barbute by Bichignola