

BIBLIOGRAFIA

CLAUDE BLAIR: *The Silvered Armour of Henry VIII in the Tower of London*. Reprinted from «Archaeologia», XCIX, published by the Society of Antiquaries, London 1965, 56 pages, 25 plates, 10 figure drawings by Mr. H. R. Robinson of the Tower Staff.

A most important and interesting work with a wealth of penetrating and detailed investigations has been undertaken by the British specialist in ancient arms and armour, Mr. Claude Blair from the Victoria and Albert Museum in London. It is a monography, dealing with one of the most important and perhaps best known of the historical armours from the Tower of London, the silvered armour made for king Henry VIII (Inv. no. II, 5). This precious armour has called upon attention from investigators and amateurs of ancient armours for almost one century and a half. The first publication of it, and probably the earliest study of a single piece of armour written in any European language, was that of Sir Samuel Meyrick, who in 1829 first published it in «Archaeologia», XXII, pp. 106-113. Later on several prominent specialists have mentioned or described it in various books and articles.

Meyrick in his publication pointed out that although this armour in earlier time was considered made for king Henry VII, this could not be correct. Style and decoration indicated clearly that it must have been made for king Henry VIII, and probably—referring to the word Gluck (on the left greave), German for congratulation—as a wedding gift from the emperor Maximilian I to king Henry at his marriage with Katharine of Aragón in 1509. Until 1841 when John Hewitt issued his publication: *The Tower: its History, Armouries and Antiquities*, this opinion had been repeated. Hewitt considered it a German armour or made by some of the «Almaine armourers» employed by the king in London and made for one of the pageants held in occasion of king Henry's marriage. However, after the publication of a calender of documents from the archives of Innsbruck in 1884 it was held for certain that this armour was that mentioned as an armour made by Conrad Seusenhofer of Innsbruck for Henry VIII and presented to him by the emperor in 1514.

Lord Dillon identified the armour mentioned in the Innsbruck archives with the Tower armour, and his identification (not published by him) was further acknowledged in a publication by Wendelin Boeheim from the Imperial Armory in Vienna in an article about the Seusenhofer

family, issued in 1899. Once accepted, this identification has been maintained as a matter of fact and it has figured in catalogues and guides as a wedding gift from Maximilian. The armour even figured on the Exhibition of Innsbruck armourers in the Tiroler Landesmuseum 1954, as seen in the Katalog der Innsbrucker Plattnerkunst, 66, no. 61.

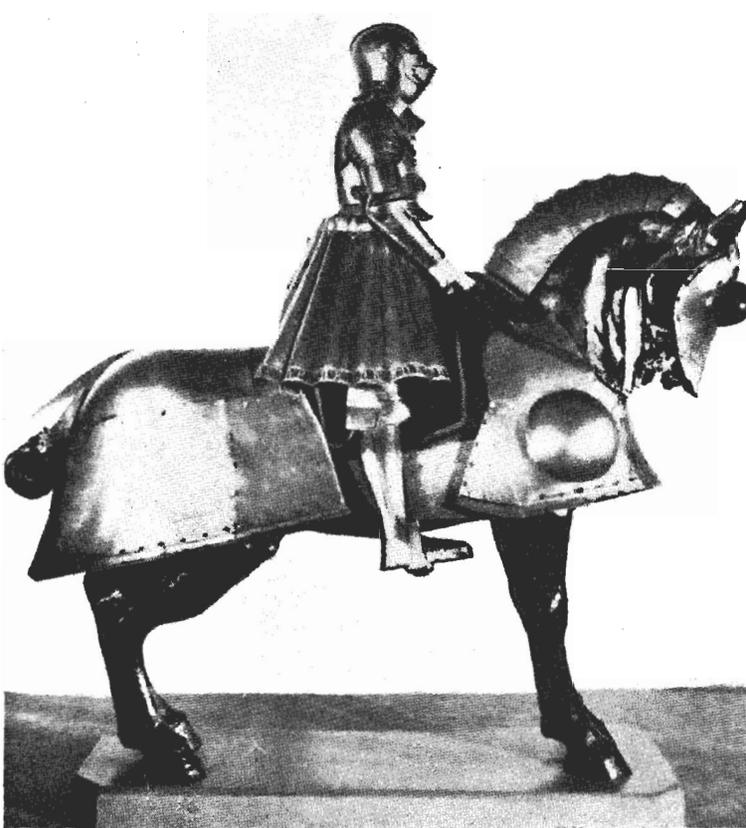
Although not based upon absolutely certain facts this identification looked very probable. The author therefore merits the greatest admiration for his skilled and diligent analysis of the armour and its history, published in «Archaeologia», XCIX. Thanks to his penetrating and careful examination of the armour itself, its bard, the numerous documents, accounts, inventories, letters, etc., not only in England but in Italy, Austria, Belgium and other countries, he has succeeded in establishing the true history of this prominent armour. The main purpose of his study has just been to establish that this armour *was not* the one presented to king Henry VIII by the emperor Maximilian in 1514, and to document that it *was not* a Seusenhofer-work and *not* made in Innsbruck.

The author in this study has examined the armour in all its details: armet, reinforcing bevor, cuirass, fauld, base, pauldrons, vambraces, cuisses, greaves, sabatons as well as the decoration on each piece, the technique of the decoration and the materials used for it. Almost all parts exist except some details, such as straps, rivets, hinges and the like. Gauntlets are missing just as are a number of reinforcements for converting the armour from parade dress to field armour. As to the decoration this consists in engravings, silvering and gilding. Most of the gilding now has disappeared. The engravings are in wriggled line on a finely punched background. The designs show running foliage of roses with pomegranates, the badges of Henry VIII and Katharine of Aragón. The breastplate has a representation of Sct. George, the backplate of Santa Bárbara. The sheaf with arrows of Katharine is seen on the poleyns. On the base the initials H and K are executed in gilt latten.

The investigation is built up in a very logical manner starting with the gift from the emperor and treating the documentary sources with the first recorded reference to this gift. This reference is to be found in a letter from the English ambassador to the Imperial Court in Vienna, Sir Robert Wingfield, and written in Innsbruck in 1511. It shows why the silvered Tower armour cannot be the armour concerned with in the letters and documents dealing with the gift from Maximilian, although the Innsbruck armourer Conrad Seusenhofer had orders from the king of England. The author has carefully analysed the correspondance with Sir Robert, Sir Richard Jertingham and various other persons, entries from Raitkammer in Innsbruck, etc., referring to the armours for the king of England and for the Archduke Charles, the later Carlos V of

Spain. Of particular interest is here the armour for Archduke Charles with its pleated base and its «Silbergeschmeide».

The most important evidence against the identification of the Tower armour with the imperial gift is provided by the Raitkammer in Innsbruck in a letter dated 7th July 1512 concerning the amounts of gold and silver needed for decorating the armour. There is a considerable discrepancy in regard to silver needed for such an armour and for that given in Seusenhofers estimate, and it seems to prove conclusively that the Tower armour cannot be the one sent to king Henry by Maximilian



*King Henry VIII's silvered and engraved armour and bard (Tower of London.
Inv. nos. II, 5; VI, 1-5).*

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in 1514. The inventories of the English Royal Armoury provides sufficient support for the conclusion drawn from the Austrian sources. The earliest of these form part of the huge inventory of Henry VIII's effects, drawn by orders of Edward VI in 1547. The first entry of this inventory, partly published by Lord Dillon in «Archaeologia», LI, 1888, p. 257, suits well for the Tower armour. The special decoration with roses and pomegranates are mentioned here.

Among the armours mentioned in this entry is a plain armour for tilting to which a ram's horn helmet is associated. This helmet had been detached from its original armour and it is the only piece preserved of it. Only greaves and sabatons from this disappeared gift armour still seem to be in the Tower (Inv. no. II.2). The ram's head is an armet, which now with certainty can be ascribed to Conrad Seusenhofer himself. Instead of a visor it has a human profile excellently worked out. It is beautifully made with etchings, gilt of all details and originally with applied silver decoration. Its importance here is due to the fact that its decoration provides proof that the emperors gift to the king and to the Archduke Charles were both decorated in the same manner. Possibly this ram's head is a caricature of Maximilian himself. Its profile is very much alike the profile of the emperor as seen in the painting from 1510 by Bernard Strigel, now in Vienna. Probably thanks to its strange shape this helmet escaped the fate which surpassed the rest of the gift armour: to be sold as pieces of broken armours, a fate suffered by numerous pieces of precious armours in many countries. In the 17th century it was thought to be part of the compiled armour of Henry VIII's fool, Will Sommers. Its skull was then painted blue, the mask in flesh colour and the horns yellow. The latten spectacles were also added at that time. Most of the colours were removed about 1913.

After the examination of all the archive documents, inventories, remnants of armours and their decoration the conclusion must be that the silvered and engraved Tower armour cannot be the one with which Maximilian presented king Henry in 1514. But the decoration with the rose and pomegranate shows that it must have been made for king Henry, and the slenderness of the shape indicates that it must be from about the years shortly after his wedding with Katherine, when he had not taken such a voluminous shape as later on. The author next continues with an examination of the king's other armours in order to see whether or not it can be one of the armours made for him in Innsbruck. Apart from its steel base and some few details of current character and construction it has nothing to do with the style of the Innsbruck armours. Apart from the base the armour in almost all its details is completely Italian in style. The maker's mark on the armet has been attributed

to Conrad Seusenhofer but on the assumption that the armour really was that made by Seusenhofer as a gift armour. Only one example of this mark is known, that on the skull of an altered Italian armet from Coll. Luigi Marzoli near Brescia. The armet has parallels among Italian monumental effigies and relatives among most of the armets from the armours in Santa Maria delle Grazie presso Mantova. We find them on an armour from the Coll. George Pauillac and from two armours in Musée de l'Armée in Paris, and so close in style to the Tower armour that they almost could be attributed to the same workshop. Laking described them as possible works from the Missaglia family in Milan. The most striking similarity comes from the Pauillac armour and the pieces in Musée de l'Armée. These armours have as their mark a crowned pair of open compasses and between the legs of the compasses the initials NI, one of them even has the name *Silva*. The notarial archives of Milan have been investigated and penetratingly examined in order to find something about an armourer of this name. (The suggestion of a member of the Negroli family must be rejected.) Among the rich material from the archives at least 33 documents concern a certain armourer Nicolaus de Silva, son of Antonio, the documents covering a period from 1511-1549.

Though there is here no reference to Silva's mark, there can hardly exist any doubt about the marks with the crowned compasses found on the Paris armours. The silvered Tower armour is highly related to the Milanese armours, although there is no certain proof of its being made in Italy. There is evidence for its decoration in England, where it must have been decorated together with the bard which makes set with it (Inv. no. VI.1-5). Therefore it was necessary to examine the horse bard in regard to the decoration. Both the peytral, marked with a Roman M, the crupper, pair of flanchards, shaffron and crinet are all over decorated in the same manner as the armour. The decoration is done with the wriggled line on a punched background with scrolls and with rose tendrils and pomegranates as well as the initials H and K. There is a representation of Sct. George and the motto: *Dieu et mon Droyt*. One of the shields shows the castle and the other the sheaf of arrows. Scenes from the life of Sct. George and Santa Bárbara are important in order to recognize the style and model. There are stylistic affinities with Flemish art from this period, particularly with Brussels and Antwerp schools of wood-carvers. The art of the horse bard can be identified with the art of a certain Paul van Vrelant who for a short time occurs in the king's records as his harness-gilder. In 1954 in the Innsbrucker Exhibition the decoration on the bard and armour was attributed to Paul van Vrelant. This person was of Flemish origin and he may be of the famous

family of book-illuminators. He is first found in an entry of an account for the year 1505 of Simon Longin, «receveur général des Finances de Philippe, roi de Castille». He decorated amongst others the shaffron A 11 in the Armería Real in Madrid. In 1514 we meet Vrelant again, when he was paid for materials and work of gold and silver and for decoration on a man's armour for king Henry VIII. His next work was to decorate a horse bard to match the man's armour. He covenanted to do so in 1514. The dates of these papers, which do not seem to have survived, are found in the Royal Chamber Accounts in 1514 and 1515. Two groups of work for the king were recorded. He or his workshops in Brussels made works for Carlos V of Spain. Two of this emperor's shaffrons in Madrid (F 111 and F 112) are his work. The fact that the armour and bard were decorated in England might be regarded as a strong indication for assuming that they were also made here, though it cannot be said for certain. The possibility exists that there has been an import from his workshop in Brussels. The style of the armour itself is Italian. However, this does not mean that it necessarily must have been made in Italy. Armourers as well as many other categories of artisans went abroad. Italian armourers went to Spain, France and various other European countries. Italian influence is to be found almost everywhere in Europe except in Germany. The Tower armour may have been made outside Italy too. There are convincing reasons for believing that it was made in England. Henry VIII sent for armourers from Brussels and Milan to work at his court already about 1511. In 1515 they were followed by the «Almaines» in Greenwich, and they were active until under the reign of Charles I. Armourers from Innsbruck were ordered in 1511 too.

The base of the armour is out of style though its decoration gives for certain that it belongs to it. It is a direct copy of the Innsbruck bases. Probably it has been copied from the base of the Maximilian gift of 1514. The king may have found the base of the gift armour so beautiful that he ordered the silvered Tower armour furnished with such a base.

Among the workshops working for the king the Almain one in Greenwich at once can be excluded as maker, and the choice lies between the workshops from Brussels and from Milan. Only very little evidence can be procured for the Brussels armourers. More evidence is to be found from Milan. One of the documents from the State Archives of Milan is an agreement made by Sir Richard Jerningham, on behalf of the king, with some Milanese armourers. Among the witnesses in this agreement with Sir Richard appears the name of Nicolaus de Silva, son of Antonio, together with his address in Milan. Some con-

nexion between the armourers of the silvered armour and Nicolaus de Silva probably existed. Another indication is the mark with the crowned armet on the Italian helmet from Coll. Marzoli.

The examinations of armour, decoration and archives, of accounts, letters and the like conclude in that the silvered armour beyond any reasonable doubt must have been decorated in England by Paul van Vrelant at some date between 1514 and 1519, and probably in use already by May 1516. The other evidences are largely circumstantial and only permit a tentative conclusion that the armour was probably made in Greenwich by king Henry's Milanese armourers after the delivery of Maximilian's gift in 1514, and that it could well be the harness that Vrelant was paid for in June and July 1515.

As to the origin of the bard it probably is the one referred to in Vrelant's indenture of Sept. 1514. It may have been made by one of the armourers who worked in Flanders in one of Filíp the Handsome's workshops there. At least it was not made in England. It must have been a plain bard acquired from abroad by king Henry before he had established his own workshops. Vrelant got it «from stock» for decorating it en suite with the armour.

Interesting is to follow the investigation about the scenes from the lives of Santa Bárbara and Saint George, represented on this bard. The various episodes in the life of the two saints are treated very thorough with examinations of details and with investigations of the literature concerning the history of the saints. The treatment of the scenes by Vrelant is very Flemish in style and close to the art of Brabant. Paintings and wood-carvings from Antwerp and Brussels from the end of the 15th and the early part of the 16th centuries tell us something about the prototypes used by the artist. Particularly the wood-carvings from Antwerp and Brussels show striking similarities, and above all the altar-pieces of Sct. George carved by Jan Borman of Brussels in 1493, now in Musée de Cinquantenaire. Vrelant's scenes from the life of Saint George seem to be based upon this altar-piece. Unquestionably he has based his figure scenes upon this altar directly from the work of Borman, and he must have known it when he lived in Brussels.

The investigation is followed by detailed drawings of the armour, representing details of the armet, breast-and backplate, base, collar, cuirass, pauldrons, vambraces, etc. In a very instructive manner they support the article. Weights and measurements of the armour with all details noted, together with an index closes this excellent investigation.

The facts here established by Claude Blair, that the famous historical armour of king Henry VIII in the Tower of London is not the one presented to the king from the emperor Maximilian I in 1514 and that

it was not a work by Conrad Seusenhofer from Innsbruck, are very important. It deserves to be known by all investigators and amateurs of ancient arms and armour that it thanks to this detailed and diligent examination has been possible for the author to establish that the silvered and engraved Tower armour was beyond doubt decorated in England by Paul van Vrelant between 1514 and 1519, probably even before 1516, and that it no doubt was a work by the king's Milanese armourers in Greenwich, after the delivery of the gift from the emperor in 1514.

A. BR. H.

LIONELLO G. BOCCIA: *Nove Secoli di Armi da Caccia*, Firenze, Editrice EDAM, 1967, 181 pages, 174 figures, 16 planches, 3 planches with maker's stamps.

During the last decennium a lively and important interest in ancient arms and armours has been noted in Italy. A series of beautiful publications, richly illustrated and to a high degree representing objects from the rich museums and collections in Italy have been issued. Among the works recently published attention must be called to the beautiful and useful book by the skilled expert Lionello G. Boccia from Firenze, dealing with ancient weapons for hunting.

The literature dealing with this particular category of weapons is not very rich, although articles and essays have been published in various periodicals and reviews for armeology, art and applied art. Apart from the ancient literature such as medieval manuscripts and some of the Italian, French, Spanish and German books and treatises from 16th and 17th centuries, when hunting flourished as a courtly sport and entertainment among kings, princes and nobility, only very little special literature has been issued. For that reason this book deserves notice. It treats the various types of weapons used in Europe since the 10th century until the middle of the 19th century. The rich Italian collections of weapons constitute the heart of the book, and all the illustrations represent objects from these collections, particularly from Firenze (Bargello Museum, Museo Stibbert), Armeria Reale in Turin, The Ducal Museum and Museo Correr of Venezia, Castel Sant'Angelo and Palazzo Odescalchi in Rome, Capodimonte in Naples as well as various other museums and private collections.

The book has an abundance of illustrations, 174 in black and white, besides 16 beautiful planches in colours. Three planches with maker's stamps join the series of illustrations. In 35 pages the author gives a

short survey of the art of hunting, the categories of hunting and the weapons used for each category. Each of the chapters treats a weapon, its history and development as well as the use of it. The text contains references to the objects reproduced in the illustrations as well as quotations from ancient, wellknown books, manuscripts and treatises of hunting. To each of the weapons is a comprehensive explanation as to type, details, place of manufacture and chronology as well as to present museums or collections. Adequate notes are found on pages 161-173. Here a lot of information is given in a short and precise way with references to similar objects in other museums and even with references to literature. A bibliographical part, comprising ancient and modern literature, as well as a list of names, museums, collections, manufacturers and stamps concludes the work.

Hunting and the weapons used for it as a necessity for keeping up life, for defence and for procuring food—have been wellknown since the earliest days of mankind. Weapons used for hunting belong to the very first tools of the world. All great civilizations of Antiquity cultivated some or other type for hunting as a sport, as competition and entertainment at court-life among princes and nobles. Numerous are the representations in art already from neolithic cave paintings, through all Antiquity and later time in Europe and in the Oriental world of hunters pursuing game with spears or with bows and arrows. Weapons from many parts of the world testify in our museums the interest man took in this action.

Since the Middle Ages the courts in Europe as well as in the Orient took a lively interest in all kinds of hunting, with weapons, dogs, gervfalcons, from horseback and on foot. Though almost identical during great part of the Middle Ages, little by little, a difference is noted between weapons used for war and for hunting. In the later part of the Middle Ages special types only fit for hunting were elaborated. Such special types we find, for instance, among the various kinds of spears, hunting swords, knives and crossbows. Some of the weapons, originally created for war, later on were used for hunting only. We see it e. g. with various types of crossbows, which got a special construction and special types of arrow heads, pellets, etc.

The luxurious life which to a still higher degree developed at the courts of Europe, particularly in Spain, France, Italy and Germany, needed elegant and well-made weapons for the various categories of hunting cultivated by the kings and nobles. In addition the technical construction and manufacture, the decoration and the more or less precious kinds of materials used were important to the owners. Small-game, boars, deer, wolfs, winged game, etc., hunting from horseback and on

foot required special weapons. Among the most important weapons in early time were knives, spears, swords, bows and arrows, later on crossbows and after the introduction of gunpowder and firearms the various types of handfirearms, such as matchlocks, snaphances, wheellocks, flintlocks, percussionlocks up to the more modern types. During the 16th century firearms became the most important weapons for hunting, although crossbows kept their place as important for special classes of hunting.

In his book doctor Lionello Boccia lets his readers follow him in his survey on the development from the 10th century until the middle of the 19th century when firearms underwent a strong technical development on the cost of the precious and elegant artistic beauty. The author has specialized in art and archaeology, and he has an intimate knowledge of the art of hunting and its weapons. He is starting with the period in which weapons for war and hunting have arrived the moment in which the ways of development for the two groups: war and hunting, are going to part. Among the early medieval hunting weapons are the plain single edged knives, which later on developed to the falchion like types, some of them with yelman, such as the finely etched specimen in the Bargello Museum, originally belonging to the court jester of Henry II of France, Nicolás de Coville, a type particularly beloved in the period of the Renaissance. Such a «storta» was fit for hunters from horseback as well as for footmen, for the last stroke to deer, wild-boar, wolf or lynx. A similar specimen, of Brescian workmanship is to be found now in the Real Armería of Madrid.

The hunting swords, which existed in various types—many of them of German workmanship, often appear in a peculiar shape, e. g. the particular boar-swords. The author quotes here the ms. by H. de Ferrières *Livre du roy Modus et de la reine Racio*, a ms. from 14th century, which recommends hunting swords for horsemen attacking wild-boars. The grip may be in the shape of a simple cross like an ordinary sword grip or it may be of the bastard-type; it may even be in the shape of a long sabre-grip with cross bar, and the blade may be in the shape of an iron barrel with a cross bar just before it widenes to a spear head-like blade.

Among the woodknives, the waidpraxes, attention must be called to the excellent specimen, now in the Bargello Museum, with its artistic iron-cutting by Daniel Sadeler, on grip, mountings and on the little knives belonging to the pockets of the sheath. Another characteristic set is the garniture in the Museum of Capodimonte in Naples of German workmanship from 17th century. Among the special knives are the little pointed daggers of the particular Genovese and Sardinian types,

much alike the knives from Albacete in Spain. Such knives were in use among the banditti as under-hand and treachery weapons, easy to conceal under the mantel.

In regard to the spears, various types were in use for horsemen as well as for footmen. Even pikes were considered excellent weapons, e. g. against wild-boars, as seen in the illuminations of the book of hunting of the emperor Maximilian, from about 1508-1509, or on the far later painting by Jacob Philipp Hackert representing king Ferdinand IV of Naples, now in Museo di Capodimonte, and dated 1785, here with pikes and pistols. The «Knebelspiesse» were descendants of the winged lances of the early Middle Ages. Among the various interesting spear-types are the specimens with hinges—folding corseques—represented e. g. in Bargello Museum and in Armeria Reale in Turin. Spear-heads with wheel-lock pistols, with two locks and two barrels are belonging more to curiosities than to practical hunting weapons. Since prehistoric time the bow has been a favorite hunting weapon. In the Middle Ages it was highly in use as a far reaching and noiseless weapon. Among the various types of bows the Turkish was considered particularly effective. The shape di Soria was particularly beloved in Venezia. An excellent specimen from about 1450 is in Palazzo Ducale. The origin must be sought for in the Orient. It was used all over the Mediterranean countries and was even sometimes constructed in Germany. The various types of arrows and their heads, shafts and the sort of wood particularly fit for the purposes, as well as the tail-feathers, are treated in the same chapter.

The crossbow was considered an excellent weapon for game. Before and about 1500 the composite bow with its complicated construction was in use, but soon it was replaced by the steelbow. The German and West European types differ from the Mediterranean types. A slender and strong type was in favour in Spain and in France. An excellent French specimen from about 1530-1550 is now to be found in the Bargello Museum. In the second fourth of the 16th century the crossbow for pellets or stones came into use with its various types: Italian, Spanish, German, etc., differing as to details of construction. Until the end of the 18th century, in some places even later, the crossbow was in use as sporting weapon for matches. Among poachers and for nightly hunt it was widely used. The most comprehensive group of hunting weapons are the hand-firearms with their various types of guns, rifles and even pistols and terzeroles. Already in the first half of the 16th century the match lock had been so much perfected that it with some exit could be used for hunting of four-footed and winged game. For a long time it had to compete with the more modern but even more expensive wheel-

lock gun, which it even surpassed. A fine specimen is seen in the Armeria Reale in Turin. According to the author the wheel-lock seems to be an Italian invention and it may be dated to about 1510-1520. The author refers to the drawings by Leonardo da Vinci in his *Codex Atlanticus*, fol. 56 b.

The oldest known specimen of a wheel-lock combined with a cross-bow, of Italian manufacture, is now in the Ducal Palace of Venice. The wheel-lock soon spread over all Europe and underwent modifications at various times. From the first decades of the 17th century occur some fine examples, such types as those seen e. g. on the elegant pistols of German workmanship from about 1620-30 in the Bargello Museum.

As a matter of fact the technical details and their progresses are of the greatest interest. But the artistic performance, the precious material and the elegant workmanship as to decoration deserves mention. The special types and the fine chiseling on several pieces of Brescian workmanship must be called attention to. From about 1590 is the archebuse Farnese with its garniture made in Brescia, now in Castel Sant'Angelo in Rome, as well as the pair of archebuses in Museo di Capodimonte in Naples once belonging to the guard of Alessandro and Ranuccio Farnese. An interesting pair of pistols in the Bargello Museum is the pair no. 123 (in Boccia), with barrel and butt separated, but to be combined with shrew thread. The barrels and butts are elaborately covered with ornaments in etching, performed with artistic skill. Of particular interest is the wheel-lock carabine in Museo Bargello, presented by the Duke of Bavaria to Ferdinand II of Toscana. It is a precious work with rich and elegant iron chiseling by Daniel Sadeler and Hieronymus Borstorffer, dated 1626. It forms a garniture with the waidmesser mentioned above. A German speciality, created in or at least named after the Silesian town of Teschen or Cieszyn are the so-called tschinken or cieszynka, here represented by a beautiful specimen from 1620 in Armeria Reale in Turin. This type was even made in Kurlandia.

A renovation and an improvement were the more plain shapes of ignition system, the snaphances. One of them, called «a la romana», probably was a basic type for the development in the Mediterranean. Very likely it was born in Brescia. A noteworthy specimen with double ignition system, a snaphance and a wheel-lock, from about 1580, is represented by a piece in the Museo de Artigleria in Turin. Other types were the so-called «alla catalana», «alla micheletta», «alla morlacca», and —of a different type—«alla fiorentina», more related to the Central European types. The Spanish conservatism is seen in the prolonged use of the miguelete, which was in use as late as in the second quarter of the 19th century. The flintlock, which very likely was born in France

about 1610 and which had borrowed various elements from the Italian snaphance, never got much footing in Spain. The period from the end of the 16th century until the early part of the 18th century is a period of experimentation. Through various experiments a new type was created, the percussion lock, about 1800-1820. With this invention the history of the ancient mechanism has come to an end. A new era was introduced, in which still more experiments led to new, more effective types, at the same time, however, as a rule to more plain and undecorated types.

In the chapters which follow, the gunpowder, the projectiles and the cartridges as well as the powder-flasks, are treated, just as the shape and types of barrels, their construction, pattern-welding, damascening, incrustations in gold and silver, etc. Among the famous makers are mentioned the members of the Cominazzo-family of Brescia, some of the famous Madrid-makers, etc. Another chapter deals with rifling and the like. The author too treats the problems dealing with the combination of barrels, butts and lock-mechanism. From the earliest plain types to the elegantly made luxury shapes the way of development is rather long. As to the material of the butts, such materials as pear-wood, to a less degree beech, maple, poplar, have been used. But these woods were surpassed by walnut wood, which was considered the best material for such purposes. Various categories of imported exotic woods from the Asiatic world, e. g. palisander, was highly esteemed. Butts of walnut with intarsia of ivory, mother of pearl, etc., were manufactured in Nuremberg for the Italian market, as seen in the specimens in Museo di Capodimonte. Shapes and types of butts differ in the various countries and even in the same country, as seen e. g. with the types «alla madrileña» and «alla catalana» from Ripoll.

Breach-loading and repeating guns, guns with several barrels, revolvers and guns with compressed air have been in use in the 19th century. As to pistols used for hunting they have been known already in the 16th century, as seen in the art of the period. Terzettas with wheel-lock are seen in the frontispiece of the ms. of Charles IX: *La Chasse Royale from 1625*, dedicated to Louis XIII, the great hunter.

In regard to period and nationality not only the technical details of mechanism are of importance. Style and decoration, intarsia, silver-and gold incrustations, steel chiseling, etc., give important informations to the investigators. Furthermore the stamps and signatures of makers and artists are of great importance.

Doctor Lionello Boccia's book with its numerous and beautiful illustrations, its elaborate catalogue and its lively and informative text deserves to be known by museums and collectors with interest in the

history of hunting, ancient arms as well as art and decorative art. Further it gives the reader an impression of the precious and rich Italian collections of ancient weapons.

The bibliographical list mentions several mss. and books from 16th and 17th century dealing with hunting, of importance to the investigators. The index which follows the bibliography is informative.

A. BR. H.

CLÉMENT BOSSON: *Les Dagues Suisses*. Extrait de «Geneva», n. s. t. XII, Genève 1964, pp. 167-198, 21 ill. in the text.

The particular Swiss dagger, generally known under the name of Holbein-dagger, is the topic of this article by the well-known Swiss investigator and curator from Musée d'Histoire et d'Art in Genève. The article doesn't treat the dagger as an ordinary armeological and archaeological object only considering grip and blade. It is particularly dealing with the special type of sheath, its motives and chronology from the time when the dagger was worn as an accessory to the high-class civil dress and for that reason needed a precious and richly adorned sheath and grip. This mode of decoration came up in the first half of the 16th century.

The Holbein-dagger was a Swiss creation, though it can be found now and then even in Germany. German artists of the time here found—just as did the Swiss artists—an interesting field for their artistic desires. The dagger as a type is no new invention of the 16th century. Its ancestors go back to the 13th and 14th centuries, where plain representations of it occur in art, just as we find them in the illuminations of the chronicles by Tschachtlan, Dicbold Schilling and others from the end of the 15th century. But its type of decorated sheath and the ornamentation is something new, wholly in accordance with the Renaissance.

The rich civilian's weapon, worn at his side on the fashionable dress, as a matter of fact must be something extraordinary. The grip follows the traditions from former days, usually with iron-or bronze and with wooden grip-shells, though in a few instances made of precious metals. The blades are solid, double edged, with midrib, or with several narrow fullers. But the copper-or silver gilt sheaths with their pierced, chiseled and engraved sides soldered to narrow metal frames and with their floral or leaf ornaments and the figure-scenes in delicate reliefs with engraved details wake admiration for the fineness of the goldsmiths work. Al-

though not among the most frequent pieces, several preciously decorated specimens are preserved in Switzerland, while others are to be found in various museums and collections in Europe and U. S. A. Famous Swiss artists made designs for the decoration, above all such artists as Holbein the Younger, after whose designs representing the Dance of Death the whole group got its current name. But already in the days of Urs Graf and Niklaus Manuel at the beginning of the 16th century this type of sheath and its constructional form was created. The German artist Heinrich Aldegrever has made several models and designs with a characteristic tripartite system of ornamentation richly covered with floral ornaments, faun-masks, etc., in Renaissance style. But his daggers remind more of the German lansquenet-types. Though we find various purely decorative sheaths with nicely performed cruciform designs, leaves, lilies, etc., topics without a special contents or allegorical scenes, the most characteristic and interesting sheaths are those with the particular Swiss scenes, or with historical, biblical, legendary and mythological scenes, all of them showing the whole spirit of the Renaissance.

Most characteristic of all is the famous scene *The Dance of Death* where the jewelers have used the work by Hans Holbein as their source. This theme is known from art in Basel as early as about 1312 on one of the walls of the Dominican monastery. But it was particularly with Hans Holbein that it got a new life and became widely popular among the artists of the time. The drawings by Holbein are to be found on various dagger sheaths, among which a gilt specimen dated 1572 in the Hist. Mus. of Basel, is noteworthy. The other important theme, of national character, is the legend about Wilhelm Tell and Gessler, representing various episodes of this story. This Old German legend about the skilled archer or crossbow-man and his little son is known from several versions in Northern legends. Saxo Grammaticus, the author of the *Res Gestae Danorum from the 12th century*, in his chapter X, 7, 1, tells the same story about the royal housecarl and famous archer Toke, son of Palna, who was forced by his king, Harald Bluetooth, to shoot away an apple from the head of his son with his arrow. Just like Wilhelm Tell he kept one arrow ready for killing the king as a revenge if he failed his shot. The scene with Wilhelm and his crossbow is represented on several sheaths, but other passages of the legend are represented too. Among the other types of themes are representations taken from Greek and Roman history, legends, mythology, poetry or scenes from the Old Testament. We find e. g. the death of Virginia, the death scene from Ovid with Pyramus and Thisbe, as seen on the dated sheath from the Mus. Hist. of Berne, dated 1569, Jephtha's daughter, Saul, Samson, and even the parable about the prodigal son, represented on

an elegant dagger, now in Basel, dated 1585, and probably a work by the Basel-goldsmith Jeremias Faesch. This silvergilt luxury weapon was once in the collection of Remigins Faesch, who died in 1667. Several daggers exist the sheaths of which are true jewels and master-pieces of goldsmith's work. A mould for such sheaths with slight variations is seen in the Hist. Mus. of Basel. No dagger made from this mould is known. The life of Lot, the foundation of Carthage, the stories about Murcius and Porsenna are among the best known themes.

A luxury dagger in the Wallace Coll. in London of unusual shape has a beautiful, cruciform grip; the sheath is of the usual shape, and with a little chain fixed to it for the special manner of suspending it. The author explains the manner of wearing the daggers, suspended horizontally at the right side of its wearer. The picture-scenes start at the ferrule and continue from left to right. This is the current manner of wearing it. But Niklaus Manuel Deutsch the Younger shows another manner. The way of wearing it with the little chains is seen in the luxury specimen from Wallace Collection. However some of these dagger types could even be worn in vertical position.

There are several stages in the development of the ornamental system of the sheaths and their various parts, starting with the decorated daggers represented amongst others by Urs Graf in his drawing from 1516, in the drawings by Heinrich Aldegrever with the tripartite «drums», to Holbein, who created his first theme with the Dance of Death in the years between 1523 to 1540. Probably he was the inventor of the horizontal scenes with his first representations of the Dance of Death. The Wilhelm Tell scenes are later. The oldest representations on the sheaths of fleur-de-lis and the cross probably occur on the stained glass by Jorg Sollade, from 1552, now in Hist. Mus. in Basel.

The series of dated daggers seems to start about 1563 with a sheath representing the legend of Tell, now in Musée de l'Armée in Paris. The latest known specimen, dated 1592, is in the same museum. Art representations let us know that these dagger types still could be found in use early in the 17th century. With the introduction of the long sword their importance was lost.

The author's investigation of the Holbein-daggers gives a survey of this particular Swiss type of dagger sheath, specially in regard to the decoration, themes and chronology. At the same time we find a statement of the existing specimens and their present whereabouts. The author gives the sources of the history of the themes used by the artists. There are good references to literature and the article is richly illustrated.

A. BR. H.

FL. DEUCHLER: *Die Burgunderbeute; Inventar der Beutestücke aus den Schlachten von Grandson, Murten und Nancy, 1476-1477*, Bern, Stampfli & C., XXII, 418 p., illust.

En moins d'un an, la puissance des «Grands ducs d'Occident» se brise et éclate au choc contre les montagnards suisses. Grandson (2 mars 1476), Morat (22 juin 1476), Nancy (5 janvier 1477), trois batailles qui marquent l'effondrement d'un état qui, par sa richesse et par sa splendeur, rivalisait avec tous les royaumes chrétiens.

Le butin fait par les Suisses fut d'une richesse extraordinaire. Les ducs de Bourgogne étaient des amateurs d'art raffiné; il suffit de penser aux trésors que, malgré les déprédations de toutes sortes, existent encore à Dijon... De plus, les armées d'alors traînaient en campagne les meubles, les tapisseries, les objets précieux, qui formaient un cadre splendide à la vie d'un haut baron.

Ces simples remarques suffisent à marquer le grand intérêt que le «butin de Bourgogne» revêt pour l'historien, pour l'archéologue et pour l'artiste. Cela d'autant plus que, dans la plupart des cas, les objets ainsi conquis furent officiellement distribués aux villes ayant pris part à la lutte, c'est à dire que leur origine est prouvée d'une façon authentique.

Toutefois, du fait même de cette dispersion, il était difficile de repérer l'endroit où se trouvent déposées nombre de pièces et de saisir, d'un simple coup d'oeil, l'ampleur de l'ensemble conservé. C'est précisément pour répondre à cette double question que Fl. Deuchler a dressé l'inventaire que l'on recense ici.

Après une étude, très documentée, sur les guerres de Bourgogne, sur l'origine du butin et ses caractéristiques, ainsi que sur les sources écrites contemporaines, vient le catalogue des objets subsistant et des chapitres successifs sont consacrés aux bijoux et objets précieux, aux tapisseries, aux étendards, aux manuscrits, etc.

Deux chapitres de l'ouvrage intéresseront particulièrement les lecteurs de GLADIUS. Le premier est relatif aux 26 pièces d'artillerie prises par les Suisses sur les armées duciales qui ont été conservées en totalité ou en partie, et qui sont aujourd'hui déposées dans les musées de La Neuveville, de Bâle, de Morat, de Paris, de Saint-Gall, de Soleure et de Biel.

Chacune de ces pièces est représentée soit par une photographie, soit par un dessin. Une description, normalisée, indique notamment, le lieu où elle fut prise, le musée qui la conserve, la cote sous laquelle elle y est enregistrée, les dimensions, le poids, le matériau (bronze ou fer forgé), etc. La description est suivie d'un commentaire très dense et la notice se termine par le relevé de la littérature consacrée à la pièce. Enfin, l'auteur nous renseigne sur les canons dont l'existence n'est connue que

par les inventaires ou autres textes et il faut applaudir au large emploi des sources narratives et diplomatiques qui est fait tout le long de l'ouvrage. Ce catalogue s'avère fort instructif. Par exemple, il en ressort qu'environ la moitié des pièces conservées sont de fer forgé. Il est vrai que les canons que nous possédons ne constituent qu'une partie du total conquis sur les armées duciales. Il est vrai aussi que le parc d'artillerie ayant été totalement perdu à Grandson, Charles le Téméraire fut forcé, pour le reconstituer rapidement, de réquisitionner le matériel ancien existant dans ces états. Tel doit être le cas de la bouche à feu déposée au Musée de l'Armée de Paris (cote N 34). Mais il faut remarquer aussi que les dix pièces conservées à La Neuveville furent prises à Grandson et qu'elles sont de fer forgé. On peut donc conclure que les bourguignons utilisaient largement le fer forgé malgré qu'à cette époque, le bronze apparaissait déjà comme le matériau par excellence. En 1494, lors de l'expédition d'Italie, Charles VIII traîne avec lui une artillerie imposante, due en grande partie aux fondeurs de son père Louis XI, et ces canons sont de bronze.

La question des projectiles (boulets de pierre et boulets métalliques) et de leur fabrication, celle des affûts (dont les pièces conservées à La Neuveville offrent des exemples fort intéressants), celle des attelages nécessaires pour transporter les canons, etc., peuvent aussi être étudiées d'une façon concrète et le catalogue est un instrument de travail de premier ordre pour toutes les recherches concernant le développement de l'artillerie dans le dernier quart du XV^e siècle, époque qui marque le passage des engins primitifs à l'artillerie moderne.

Quant au chapitre consacré aux armes diverses—épées, hallebardes, pavois, etc.—il ne présente pas évidemment l'intérêt exceptionnel de celui qui précède mais, néanmoins, il s'avèrera être fort utile à l'historien et au chercheur qui pourront disposer d'un ensemble d'objets *datés*, servant de point de repère.

Des annexes sur l'héraldique et la vexillographie bourguignone et autres sujets connexes, ainsi qu'une ample bibliographie méthodique et des indexs, complètent ce volume, impécablement présenté, bien imprimé, sur de l'excellent papier et aux illustrations (en noir et en couleur) aussi belles qu'abondantes.

J.-F. FINÓ

J.-F. FINÓ: *Forteresses de la France Médiévale*. Préface de Jean Hubert, Paris, Ed. A. et J. Picard & Cie., 1967, 492 p., 144 ill.

With this work the author has produced a book of the greatest importance to all who takes interest in ancient military architecture, history

of the Middle Ages, arms, armours, artillery, poliorcetics, technology and art of war. Not only to investigators interested in that kind of themes, but to all investigators of political and cultural history as well as students of military architecture this book must be considered a valuable present. It may be used as a sort of guide to castles and fortresses of medieval France from the end of the Roman empire until about 1500, but at the same time it is a manual and a reference work to military and cultural life of France during this space of about one thousand years. The topic is rather extensive and comprises a widespread material. As a matter of fact it would be impossible in a work of about 500 pages to treat the more than 10,000 castles and fortifications as well as fortified towns of France together with some castles from Spain, Germany, Italy, Bohemia and the Holy Land. The author has made a very instructive selection among the most important and characteristic buildings and has taken into consideration all those which may be considered mile stones in the history and development of castellology. He has personally visited and examined all the castles treated in his book. For that reason he has had to travel all over France, visit castles and fortified cities in several countries, investigate architectural fragments and other kind of objects in numerous museums in order to examine objects of interest to his work. Among the foreign places of particular interest to this work is e. g. the fortified city-walls of Avila in Spain, the castle Karlstejn in the Karpates, the Cruzader's castle Crac des Chevaliers in Syria and various others.

All of these foreign castles are of interest to the history of development of castles in France. Even the Danish Viking training-camp, Trelleborg, has been investigated. Among the French castles and fortifications are several of great historical importance, such as Avignon, Carcassonne, Chinon, Château-Gaillard, to name a chosen few.

The book itself is an important achievement, which has demanded examinations in numerous fields, archaeological as well as armeological, investigations in archives in regard to documentation, inventories, accounts, historical literary sources such as annals and chronicles, etc. The author has a fine knowledge of military archaeology, ancient technology and ancient arms and armours. For that reason he has been able to combine the various components to a whole, which makes the book a most useful manual to investigators of medieval civilization. He has contributed to solve many problems and to represent this epoch in new and interesting aspects. The history of the fortifications has not been separated from the political, technological or armeological history. The book is a synthesis of the investigations and for that reason it gives a coherent survey of these very epochs of the Middle Ages.

The archeological sources consist of the fortresses themselves with

their moats, ramparts, walls and towers, more or less preserved donjons and other buildings. The archaeological objects from such buildings as well as fragments of decorative details from the fortresses have been placed in museums, often in more or less known local provincial museums. The literary sources are many: inventories, letters, documents, accounts, bills, privileges, manuscripts of ancient Roman military and poliorcetic authors as well as medieval military authors such as Vitruvius, Vegetius, Ammianus Marcellinus, Frontinus, Hyginus, Isidorus de Sevilla, Ægidius Romanus Colonna, Marinus Sanutus Torsellus, Villard de Honnecourt, Konrad Kyeser and several others, as well as the early renaissance artists and technicians such as the most important drawings by Leonardo da Vinci. Chronicles, annals, edicts, laws and the like have been carefully examined.

The book comprises an introduction and two main-chapters; each of these chapters have been parted into a series of chronological sections. The second main-chapter, «Quelques Réalisations», treats a series of castles and fortifications, city-walls, fragments and ruins of castles, all of them examined by the author on his many travels. The work represents a systematical survey, period for period, with all details and aspects of a castle, its situation, technics for the construction, armament, effectives, poliorcetic advantages and disadvantages. The parts treated in the chapters are: the late imperial Roman time, the dawn of feudal period, the Cruzaders' time from Langeais to Château-Gaillard, the days of Saint-Louis, the Hundred Years War, and as a last chapter the development of artillery and other types of firearms, concluding with the Royal Power.

The Middle Ages were a period of great activity in regard to construction of fortifications, and there hardly exists any region of France (just as in Spain) in which one cannot find at least one fortified medieval building or ruins of castles with their ramparts and moats. To a complete investigation of the castles the buildings themselves do not suffice. Numerous facts must be taken into consideration. Great part of the castles have played an important part to history and daily life, not only in the days of their first construction, but even in far later time. They have undergone alterations, enlargements, improvements and rebuildings in accordance with the demands of new times. Renewals often have been undertaken in the 16th-18th centuries and present difficulties to the investigators. Systematical excavations and investigations such as those made e. g. at Dura-Europos and other fortifications from Antiquity never have been undertaken. For that reason a series of problems accumulate. Important examinations, such as analysis of the soil of the ramparts and moats, the soil of the castles themselves and their nearest

surroundings, must be done. Air-photos often give excellent support with their shadow-marks, crop-marks, soil-marks and the like. Modern time archaeology has at its disposal a series of technical means. As a further support comes a series of other means such as representations of castles in art, illuminations, seals, stained glass, etc., besides the various classes of literary sources.

The principles of fortification only changed little during the centuries almost up to our time, when quite different war means came up and were taken into use, such as explosives of various kinds, airplanes, bombs, etc., all of them forcing the systems of fortification to find new ways and methods.

The Romans in their golden age had no need of fortifications for defence. When the empire entered its decline, and when the enemies invaded the imperial regions and became a veritable danger at the end of the 3rd and the beginning of the 4th centuries A. D., fortifications virtually became a necessity. To the days of Constantine the Great a considerable part of the Roman encintes of France owe their origin. The Romans absorbed the subdued nations' advantages and omitted their disadvantages. As to workmanship they had sufficient help. Numerous and important constructions were created. Human workmanship was the most important means of the Romans, just as it had been to the Greeks. Mechanical and technical resources were more or less unknown to them. Animal power was not exploited, hydraulic wheels and water power rarely utilized, although the Romans had overtaken the hydraulic wheel from the Greeks and even improved it.

As to the constructions and their shapes there is a remarkable difference between the Mediterranean world and Central Europe. Influence from ancient Rome, e. g. from Vitruvius, do we find in the Byzantine fortresses, which were veritable fortifications, as well as in the Arab castles, which have taken their inspiration from Roman and Byzantine military architecture.

The first chapter, «La fin de l'empire», examines the early period of the Middle Ages and states that the role of the Gaulish fortifications is rather weak in regard to influence upon fortifications of the Middle Ages. The Roman Limes still were of some importance against the foreign tribes outside the Roman frontier lines. After the long and peaceful period when the turbulent tribes, coming from the East, became a menace to the frontiers the Roman rulers found it necessary to defend their frontiers with strong castles. The last part of the 3rd century A. D. and the following century saw a new activity among the Roman architects of castles. During these years of the late Roman empire and the beginning of the Middle Ages the weapons in use were to some

extent Roman, while others were adoptions from the Barbarians. There is a clear difference between the Roman legionary's armament and that of the auxiliary soldier. The auxiliary weapons little by little conquered out the Roman types. With Alexander Severus a cavalry similar to the Iranian *catafractarii* was adopted, with *lorica squamata* or mail shirt, depending upon the epochs and the categories of warriors, oval or round shields, swords of *spatha*-type together with cavalry lances. Among the auxiliary weapons were particularly axes with double edges, bows and arrows, slings and crossbows. In Antiquity the Balearian slingers had enjoyed great fame for their skill. Of particular interest is the stele now in Musée du Puy representing a Gallo-Roman crossbow with its quiver. Vegetius mentions types of crossbows in use in the imperial armies. As to the early Middle Ages we find material from the contemporary tombs as well as from representations in art objects. *Framea*, *francisca*, *ango*, *scramasax* and the like are examined by the author as well as the methods for producing the types of damascening, the European pattern-welded, and the Oriental watered steel. It is of great interest to see how the author has placed the weapons used in the time of the castles in their connexion with the castles and with the technics for building. The *poliorcetics* and the *effectives* are treated after each chapter. *Poliorcetics* originally were practised by the Romans, not by the Barbarians. The Romans had taken it over from the Greeks, Assyrians and Egyptians. As to various types of engines we find them mentioned and described by such military authors as Vegetius, Ammianus Marcellinus and various others.

The Barbarian fortifications mostly consisted of wooden buildings reinforced with stone and earth, with their hutments for the men and the tower for the chief. The time of the Great Migrations plunged Gaul into a grey chaos. After the re-establishment by Charlemagne and his first successors, when the fortifications had been more or less abandoned, a new stream of wars and disturbances started with the Viking raids and the Norman invasions. The Scandinavians trained in their camps of a type like that of Trelleborg during wintertime. Every spring they made their piracy invasions in Western Europe, as well as to the North and East. Owing to the various changes of life, the necessity of protecting oneself, the new structure of society which little by little had grown during the reign of Charlemagne and his successors, the feudal system took its fixed shape, that of a pyramid with the king at the top, the grand vassals and the lower vassals. In the lapse of time this feudal system underwent modifications, but its main-structure was kept. In this system the castle became the very capital of the feudal world. Here the lords gathered their vassals, here they held their court, administration,

tribunal, armies, etc. And among such capitals the small wars were numerous. The primary role of a castle was the military. It constituted a base of operations for the fights between neighbours. As to the juridical rights and privileges to build fortified castles problems are rather delicate and difficult to solve. The right belonged to the king and the greatest feudatories. But it varied after regions and periods. Everybody was not allowed to construct a fortified castle even if he could afford it economically.

Although ancient materials and manner of construction had not been quite forgotten in Gaul, greater part of the military buildings were made of wood as seen e. g. in the Bayeux-tapestry. One of the most interesting sources to ancient technics of this kind is to be found in the work by the monk Theophilus: *Diversarum artium schedula*. The carpenter was a person of importance as seen in temporary sources. «Architectarii id est carpantatorii, architectus est magister carpantatorius.» For the construction of a training camp as that of Trelleborg about 8,000 big oak-trees or a forest of about 200 acres were necessary. Oak was the favoured sort of wood, felled in winter time at full moon according to ancient traditions. Regulations in regard to armament exist from the reign of Charlemagne. As to the effectives of the armies in his days service was compulsory and proportional to the wealth of the vassals.

During Migration time the art of poliorcetics had almost disappeared in Europe. Contemporary references to war-engines are rather few. Charles the Bold in 873 sent for Byzantine engineers to construct new and effective engines. The solid and heavy engines which came into use in the 12th and 13th centuries had not yet come to the Occident, though they were in use in the Near East.

The period of 11th-12th centuries saw the foundations of a series of new castles and new towns. Western Europe needed no longer to defend itself against new pirate invasions. On the contrary! The Cruzades deliver the proof. Social conditions were changing among nobility as well as among the civil population of the municipal communities. Military life and organization differed from the former periods. With the series of new universities military literature from Antiquity was dispersed and studied as important sources to art of war, architecture, equipment, etc. Kings and princes let build fortresses and castles in order to fight each other. Daily life in the donjon of the fortified castle was rather tedious in this dark, humid floor with the smoking fire places constantly with fire but without warmth, and with few and uncomfortable pieces of furniture. Hunting for the lord, falconry or embroidery for the mistress of the house and her girls and the

constant feudal fights which have their explanation in the fact of boredom, took up their time.

Technical and mechanical matters play a still more important part. Quite a series of improvements and innovations are taken into use. The same is the matter with the iron-industry. Better forges, masonry to replace the ancient wooden parts of the constructions and many other improvements are introduced. In spite of numerous difficulties in regard to transport-problems by land or by sea building material is brought over long distances from one place to another. Illuminations from contemporary mss. tell about it, such as e. g. Rabanus Maurus: *De originibus*, in Bibl. Monte Casino; Herrad von Lantsperges: *Hortus deliciarum*, and several others.

As to the armament of this period the seals of the time give good information. Kings and noblemen in full military equipment with helmet, mailshirt, shield, sword and lance, on horseback, and with their pennons and banners are informative. The Bayeux-tapestry, the enamelled tomb plaque from Mans representing Geoffrey IV le Bel, from after 1151 and probably about 1175, supply the scarce archaeological material preserved. Nasal helmets are preserved only in a few specimens, swords and lances are far better on. The wars against Byzantine and Arab armies taught the occidental warriors to improve their armament, particularly their body defense with still more complete mailshirts, little by little reinforced by means of cuir bouilli and iron. The sword to a still higher degree becomes the weapon of the lord and knight. One of the most formidable weapons for the Cruzaders was the crossbow, several times prohibited by the Church, amongst others at the Lateran Council in 1139. The effectives even in these centuries were not great.

As to poliorcetics the use of war-engines got more expanded than before, and new or improved types were taken into use. The military architecture had to take this into consideration. Both Cruzaders and Arabs had war-engines, and Christian literary sources as well as contemporary Arab sources give information of their use. The Arabs were skilled technicians. From them and from Byzantium the Occident learned quite a lot, just as the Occidental inventions were taken over or improved by the Arabs. The types of engines as well as the types of arbalests are described in the Arab ms. by Murd ben Ali, from the days of Saladin (1137-1193). Among the interesting representations of the time are several illuminations and, not least, the relief from the church of Saint-Nazaire in Carcassonne from the beginning of the 13th century. Joinville has quite a lot of references to such engines in his History of Saint Louis and he notes the superiority of the Arab engines. Interesting representations are to be found in the illuminations of the ms. *Las*

Cantigas del Rey Alfonso el Sabio, from about 13th century in El Escorial. Among the most terrible weapons used in those days was the Greek Fire. It is worth noting here that the outstanding representation of Greek Fire and the siphon for launching it occurs in the illumination, fol. 34^v in the Byzantine ms. by the kuropalates and annalist Scylitzes, now in Biblioteca Nacional in Madrid. (See: GLADIUS, vol. V, p. 140, fig. 24.) This illustration probably dates from the end of the 12th or the beginning of the 13th century. By some mistake in former days this illustration is almost always referred to as being from a ms. in the Vatican library (Vat. Gr. 1605). This mistake is found in almost all books and articles dealing with Greek Fire and gunpowder.

As to fortifications these centuries are most important. The progresses are going on rapidly. In this new and rapid evolution two phases must be taken into consideration, one from the end of the 10th century to the beginning of the 12th century, the period of the first medieval stone castles, and the second period till the beginning of the 13th century, a period which corresponds almost to the «Romanesque» castle. But it is rather difficult to give exact limitations for chronology and style. The donjon still is the residence for the nobleman and his family and at the same time it is the center of defense, from where the orders and instructions are directed. As to the development of the «Romanesque» castle, excellent examples are to be seen in Gand, Gisors, Château-Gaillard and several others. A particular example is the castle of Caen, built by William the Conqueror.

The castles of the 12th and 13th centuries had to be defended against all kinds of attacks, surprises, traitors, etc. Three main-departments—so to speak—must be ready: the basse court for the stalls, the granges, etcetera, and in time of danger even for the neighbouring peasants, their families and animals, the second part comprised the chapel, the garrison, magazines and in cases of siege the cavalry horses, while the third part was for the protection of the donjon with the nobleman and his family. Basements contained rooms for the auxiliary troops and prisons. During the century of Saint-Louis the transformations, started in the foregoing century, went on rapidly. Political, social and economically it was a period of progress. Even to the feudal world it meant progress. It is the growth of chivalry and the period of woman, with the courts d'amour, poetry, romances, troubadours and with an increasing number not only of castles but even of towns with wealth and power in growth. The military constructions, to a still higher degree, belong to the king, the sovereign, in order to protect strategical points, newly annexed provinces and new frontiers. France has entered a period of proportional peace. Some towns have been better fortified. Only the very rich noblemen

can afford the construction of a comfortable and adequate castle-palace. The inferior nobility continued their life in the ancient, more modest castles. A characteristic type of castle is the building, outside fortified, inside more comfortable and only of a relatively little value in regard to defense and war, the «château-de-prestige».

As to technical development the artisans and craftsmen get still more specialized. It is the time of the first guilds and organizations with their statutes, chartres and cartulaires. The technical progresses are noted e. g. in the types of vault constructions, the carpenters' compositions of beams for towers and roofs and the like. The complicated construction still needed more specialists.

The military equipment corresponding to this period consists of mailshirts reinforced with iron-pieces, gaunts, mailstockings and a solid iron-helmet. The manufacture of mail ameliorates. Various manners of composing the iron-rings are known, differing from one workshop to another. Surcoats of precious textiles and gay colours and adorned with coats of arms cover the Cruzaders' mailshirts against the burning sun and the rain at the same time as they yielded a kind of protection against arrows and bolts. Besides the iron bacinet we now find the heavy helm, which became the symbol of chivalry and was overtaken by heraldry, with its significant and often picturesque crests. For practical use in war it got a short lifetime, but for tournaments and in heraldry it got a long life, the tournament-types varying for the purposes. The sword still was the knightly weapon, one, a short specimen, at the saddle, another, longer type, for use at foot. Axes and maces were influenced by the Near and Middle East. The crossbow got still more expanded. The effectives had overgrown the effectives of the earlier periods and infantry little by little augmented in importance, though cavalry still was the main arm. As to a garrison in such a fortified castle the number of warriors seems to have been rather modest in modern sense. But many factors had to be taken into consideration, such as e. g. maintenance with provisions, which sometimes had to be transported from distant places, baggage, armament, reparations and manufacture of weapons, a work which sometimes had to be undertaken in other far away places and transported to the castle.

In regard to poliorcetics the epoch was of importance, though there is no much difference as to types from the preceding periods. But the various types of engines played a far more important role. Their effects were not overwhelming. Greek Fire never got such an importance in the Occident as in the East. War fire consisted in torches with resin and the like. Naphtha was almost never in use. The humid climate of the Northern parts of France and the rest of Europe further made the

effects dubious. The Arabs had learned quite a lot of poliorcetics from the Byzantines. No doubt the Arabs knew the saltpetre at an early time. Avicenna from the 10th century speaks about Sal de Assios. Joinville in his history mentions the use of war-fire among the Arabs. The Saracens used Greek Fire from their war-engines. Explosive grenades were in use among the Arabs in these centuries and probably a kind of gunpowder. Maybe the Arabs knew about a kind of gunpowder already in the 12th century, but the occidental peoples did not know it. Interesting in that respect is the ms. by Nedjm Eddin Hassan Alrammah, who died in 1295. This author, at least, knew about it. Drawings from his ms. in Bibl. Nat. in Paris let us see the various types of Arab pyrotechnics. One cannot pass over a mention of the ms. named *Liber Ignium ad Comburendos Hostes* by a certain Marcus Graecus probably originally a Byzantine ms. The recipes from this ms. were spread over great part of Europe in the following periods. The use of combustibles producing various kinds of suffocating gasses were known among the Saracens, and the Cruzaders learnt from them, but the Occident in future concentrated more about the composition of gunpowder. The ms. by Konrad Kyeser from about 1400 contains several illustrations with pyrotechnical objects and the use of noxious gasses.

The Hundred Years War and its many battles, dearth, epidemics and various other evils was a hard blow to life in medieval France. However art in its various branches made progresses in spite of all these evils. It was a period with building of many and solid fortresses. The civil building was more or less paralyzed. The risky life made towns and nobility build defensive castles and houses as well as city walls. However, luxury advanced, and we find in the documents and inventories of the time mention of precious tapestries together with furniture, jewellery, art objects, etc. Among kings and princes are many of a refined taste. Collectors of art objects, of precious books with miniatures are known, such as e. g. the Duke Jean de Berry, Philippe the Good, Louis d'Orléans and many others. Names of famous miniaturists still are known.

Kings and dukes had a rather extensive household with chamberlains, secretaries, a numerous staff of housekeepers and servants. The queens and noble ladies were surrounded by a multitude of servants of various positions and degrees. Their castles were veritable courts. The life no more displayed in the Grand Salle. It afforded a series of rooms and halls, luxuriously furnished with tapestries, furniture, art objects, etc. The castles had become fortified palaces, defended by a garrison of officers and soldiers. Architecture changed. The plain walls outside and inside, entrances, portals, windows and the like were adorned with architectural framings, sculptures, reliefs, coats of arms, etc. Technics had

made considerable progresses. Manners of construction as well as the types of material advanced too.

Important are the progresses in regard to military equipment. The mailshirts had been still more reinforced with iron *ailettes*, *cubitières*, *genouillères*, etc. Brigandines were in favour among the lords. The unpractical heaume got out of use, the bacinets with particular shapes of vizors were the characteristic head defense. Armours had entered a period with improvement almost year by year, according to experiences from the battle fields. Iron hats were wellknown, such as e. g. the chapeau de Montauban. Pavases, crossbows, English longbows played an important part. Among the crossbows we find types almost like a kind of light artillery. An interesting Moorish crossbow from that time is the one found in a village Mecina Bombarón, in the Alpujarras outside Granada, a type which differs widely from the usual occidental crossbows. Inventories let us know about the contents of arsenals. In the Hundred Years War cannons for the first time were taken into use in the battle field. The effectives had augmented. In the most important battles of this war about 18,000 men fought at Crézy, 10,000 at Poitiers, and 11,000 at Azincourt. The feudal armies did no longer suffice. It is the time of the creation of the professional companies. Froissart tells about them. Towns and municipal communities had their hired companies. Various ordinances were established, some of them for cavalry, others for infantry. The franch-archers formed a kind of milice living in peaceful times by their civil occupation, in war times convocated to military services and paid with a small sold.

The 14th and 15th centuries mark an important epoch in regard to fortification and military architecture. There is a tendency to build the castles higher. A greater separation between the part for the lord with his family and the garrison, servants, stables, etc., is noted. The dwelling of the squire and his family is going to be a comfortable palace with leaden tubes for water, even from long distances, to kitchens, bathrooms, etc. In some castles bathrooms with tubes for hot water from the kitchen have been found. Nevertheless many castles still were old-fashioned and fortified.

The improvement of artillery and the increasing use of cannons as well as increasing royal power contributed highly to the development of military architecture towards the end of the Middle Ages.

The last part of the Middle Ages still is the age of the strong fortifications, thanks to the interaction between various factors. One of the most important was the growing interest and improvement of artillery, another important factor was the increasing royal power. As propulsive force the gunpowder no doubt was known already in the 12th century,

but the effective use of it cannot be literary documented in an adequate manner till the 14th century. The *Cronique de Gand* from 1313 does not merit credibility. But the *Registro delle Provisioni* from Florence from 1325 (or 1326) mentions both bullets of iron and metal cannons. The ms. of *Milemete*, from about 1326, in Christ Church Coll. Oxford, is important for its illustration of a metal cannon with its projectile, an arrow, and for the artillerist about to fire it. In France artillery is mentioned in 1338 and 1339 together with the mention of gunpowder. The sources from France, year by year, are augmenting.

Besides the new artillery the ancient war engines are still in use in the 14th century. It is not before the 15th century that this kind of weapon gets more effective. We can follow it in the inventories from e. g. the Bastille from 1428 and following years. The so-called coulevrines are represented in Konrad Kyeser's *Bellifortis*. Several European museums keep in their collections early specimens of artillery: Gand, Edimbourg, Madrid, Bruxelles, Tower of London, Paris and several others museums. Various types and sizes came up, such as cannons, grand coulevrines, coulevrines bastardes, faucons, fauconneaux, etc. Hand-firearms came up, such as the *Vedelspangbosse* of Denmark and the types known from Sweden. Books about artillery were written, *Livre du secret de l'art de l'artillerie et cannonnerie*, from 15th century, and various others from 16th century. Reports of the effects caused by mines and artillery in the 14th and 15th century are important sources. As to the fortifications it takes some time before the fortresses and castles take the new weapon into consideration. In the first time it is without effects. Little by little the new weapon increases in importance. During the last part of the 15th century and the beginning of the 16th century the constructors of military architecture had to take it into consideration in its two aspects, from that of the besiegers, and used from inside against the besiegers. The already existing castles become reinforced, new fortresses are constructed under the new architectural aspects. New and strong materials have had to be used. A new style and type of buildings and of towers comes up. Low towers with cupoles, double storeys with casemates, and all parts of the new system come to live almost up to modern time, at least until the first world war.

The factors which gave the coup de grave to the feudal castles were the new political structure and the royal power. The ancient character of the fortresses were abandoned, because the old type of vassals with their private, strong castles and fortifications were not tolerated anywhere by a king. Their military significance got lost and the castles became more or less a sign of prestige and adornment. The Absolutism

in 17th and 18th centuries put an end to the castles and private fortresses and killed the donjons of the now desarmed barons.

After his examination of the medieval fortresses in all their aspects: architecture, material, style, situation, defense, armament, effectives, poliorcetics and the like the author passes on to a more specialized examination of various castles of importance for the investigations. The selection of examples must have been rather difficult, because of the numerous castles and fortifications as well as fortified towns. An exact account of the history of each castle would fill many volumes. The author has made a very instructive and excellent selection and gives precise informations about each of the castles of this part of his book. Elaborate descriptions accompanied by maps, drawings and photos make this chapter a most useful handbook. Architectural importance and historical informations are treated here.

The book concludes with a detailed orientation in regard to literary sources. «Orientation Documentaire» gives the list of the numerous archives and research centres, museums and collections of importance to the investigator, and it is followed by an elaborate bibliography and repertoires, antique and medieval sources, manuscripts, chronicles and illuminations. One part contains lists of literature referring to political and social life, military organization, technics, juridical questions such as the right to build fortresses, armament, castellology and at last a list of the monographical descriptions of the castles in alphabetic order and with good indices and references to special literature.

It is a book to all who are engaged in investigations of castellology, armeology, military and social life of the Middle Ages. With its all-round treatment not only of military architecture but also of the life inside and outside the castles, the feudal life and, not least, with its important bibliographical chapters, this book is an important manual. It bears witness of its author's great knowledge and interest in these matters.

A. BR. H.

JACQUES HARMAND: *L'armée et le soldat a Rome de 107 à 50 avant notre ère*. Extrait hors-commerce: *L'armement romain à la fin de la République*. Paris, Edit. A. et J. Picard & Cie, 1967, pp. 53-98, 397-406, ill.

With this investigation the author intends to give an exact account of the Roman soldiers and their equipment in a rather limited, but very important period of the Roman history, the last part of the Republican

era with the wars of Caesar in Gaul and in Spain. He points out that no epoch-making renovations took place during this time; but an amelioration of the ancient types and a tendency to uniformity among the legionaries is to be noted as well as a transition to better and more adequate weapons. The examination of the weapons is a parallel to his investigations of the effectives and the tactics of the time.

It is the period in which the foundations of the Roman empire were laid and the lines were drawn for the future political structure and life of this empire which should come to reign over all the Mediterranean world, greater part of Europe and extend so far to the East as almost to Persia.

The army and its weapons as a matter of fact played a most important part in this development. One might expect to find detailed information among the sources to the history of the Roman power in this very period in which Caesar conquered the highest civilized part of Western Europe and fought some decisive, hard battles on the Iberian Peninsula, during the second Civil War (49-45 B. C.).

The military equipment of Ancient Rome and Italy has been exhaustively and excellently treated by various investigators, e. g. Paul Couïssin in his book: *Les Armées Romaines*, from 1926, besides in various articles. The author therefore has numerous references to these work with corrections as well as affirmations and supplements. The investigation, however, still leaves questions open.

The sources—literary as well as monumental—are rather scarce for this very limited space of time, and the author has sifted them in order to use the most exact and best dated documents and monuments. The contemporary literary sources do not contain systematically treated descriptions of the ancient military matters. They give occasional although often important informations. An adequate documentation as that by Polybios for earlier periods is hardly to be found here. Contemporary, or almost contemporary, monuments often suffer from an uncertain chronology. Their dating sometimes is more or less disputable.

For literary documentation the author mostly refers to the descriptions by Caesar himself of his Gaulish wars and the wars in Spain and in Africa, to Corpus Caesarianum, or the correspondance of Cicero. The monumental evidences are taken from two important monuments: the relief in Louvre, the altar of Domitius Ahenobarbus (the so-called Louvre-altar) and the representations from some of the relief slabs of the Iberian monument from Osuna in the province of Sevilla, the antique Urso. With some reservation he considers the battle scenes on the sides of the Arch of Orange (Vaucluse) as well as the statue from Vachères (Basses-Alpes). The mausoleum at Saint-Rémy is considered Augustaeum or

Tiberian. In spite of its probable commemorations of some of the battles from Caesarian time it contains some reminiscences from Macedonian and Hellenistic time and it may have Hellenistic patterns.

The archaeological objects, the weapons themselves carried by the Roman legionary or by the auxiliaries, of course belong to the most important documentations, and here we have relics from one of the most important sieges and victories by Caesar, that of Alesia in the year 52 B. C. (Alise-Sainte-Reine, Côte-d'Or), and for the auxiliary soldiers in the group of weapons from Urso, now Osuna, from the years 46-45 B. C., Caesar's campaign in Spain during the second Civil War. According to the author the weapons from Alesia probably must be considered a group of congeries armorum after Caesar's victory and for that reason with more Barbarian weapons than Roman pieces. Only very little Roman weapons are to be found in this congeries and their identification seems a little problematic. At Osuna there probably exist remains of an old arsenal. No doubt one here finds less Roman weapons than at Alesia and more Barbarian, that is to say Iberian weapons, belonging to the auxiliary troops. These remains from Osuna are of considerable importance because they give us a good picture of one of the most important groups of auxiliary forces and its equipment. Some more fragments from other parts of the Roman world might be added. The picture painted by these remnants and monuments is rather weak. But after all they suffice to give a general idea of the legionary and the auxiliary equipment in the period between 100-50 B. C. An important question is what or how much the Romans had learned or adopted of elements and influences from their adversaries in the East as well as in the West. From Gaul and from Spain evidence exists that they have made some innovations and adopted various elements. Their almost contemporary wars in the eastern regions, where they had had good possibilities to get renovations, did not leave important traces—at least not in this epoch. The rich possibilities for innovations and improvements from the Eastern and Asiatic world only left rather few traces.

After the introductory chapter about the documentation the author goes to examine the legions, the infantry auxiliaries, the cavalry and the artillery and as a last chapter he treats the officer's equipment.

The contemporary literary sources confirm that the offensive legionary weapons in the days of Caesar were pilum and sword. The representation of pilum in the monumental art is extremely rare. The best documented specimen probably occurs on one of the reliefs on the Iulian mausoleum of Saint-Remy in the hands of a soldier of uncertain nationality. Pila were found in Alesia with heads and shafts of various

shapes. Are they remains of Gaulish weapons according to Roman patterns? Or are they Roman weapons for some reason or other placed in the congeries? Several types have been found at Osuna, some of them all-iron. They may be the lances mentioned by Diodorus, a kind of pseudo-pilum like the specimens from the camps in the province of Cáceres in Extremadura, from the days of Sertorius. The types from Alesia may be compared with types from 2nd century B. C. from Numantia and Renieblas in Aragón. They may have been used as a kind of hasta. Maybe we here have an explanation of the disappearance of the legionary hasta.

Documentation of the sword is less abundant than that of the pilum. The gladius hispanicus had been in use since 3rd century B. C. No doubt it is represented on the Louvre altar as a rather isolated specimen, just as isolated as the pilum on the reliefs of Saint-Remy. Two fragments of such a gladius have been excavated at Osuna. One of them—the best preserved—corresponds to the representation on the Louvre altar.

As to the defensive weapons most investigators have agreed on a heavy panoply. The shields seem to have been of the Gaulish type, oblong oval and convex scuta of wood covered with leather and with an oblong boss and vertical bands from top to foot. They have a parallel in the Gaulish wooden scutum from Fayum in Egypt from 2nd century B. C. with the exception that the mountings here are wooden. About or at 50 B. C. a diminishing of the oblong scutum for practical reasons seems probable. About 50 B. C. there may have been another type of shield too, the tegula.

According to the Louvre altar the soldiers wore mailshirts without sleeves but with a shoulder-epaulette, and reaching the middle of the thighs. In this soldier's dress we probably find a heritage from the rich soldiers of the time of Polybios.

In regard to the helmets two types for infantry-men occur on the Louvre altar: the romano-celtic type, which soon disappeared, and the romano-corinthian, which could still be found in Augustaeon time. From Alesia is a helmet together with a number of paragnathides of a pattern different to those on the Louvre altar, covering the face to a much higher degree and anticipating such types of helmets as those from Hagenau and Weisenau. The panoply of a Roman legionary probably had a weight of about 18-20 kilos. There seems to be a tendency to a better protection of head and body, just as a tendency to more uniformity is noted. But individual and personal taste is seen in regard to ornamentation and to the use of gold and silver for decoration. The author too treats the often discussed problem of galea and cassis.

The auxiliaries and their equipment are represented in the archaeological objects from Osuna and the reliefs with warriors give excellent though provincial and primitive illustrations. The Iberian auxiliaries show more conservatism and more individualism in regard to equipment. The auxiliaries tactically formed an excellent complimentary part to the legionaries in war. To their characteristic weapons belonged bows and arrows as well as slings. About four types of arrow heads have been found in Osuna, probably of Spanish or Lusitanian workmanship, from about 46-45 B. C. Projectiles for slings have been found here too with a variety as to types, and some of them with the abbreviated name of Cnejus, elder son of Pompejus. For hand-to-hand fight the main sword was the machaira-shaped *falcata*. A good specimen, only missing part of its handle, was found in the province of Cáceres, probably from the days of Sertorius. In the battle of Munda in the year 45 B. C. such types were in use. One of the Osuna-reliefs has an excellent representation of an Iberian auxiliary with *falcata*. But *gladius hispanicus* is documented for the same period, as seen in another Osuna relief. The legionaries no more used the dagger, but in Spain the particular Spanish type was still in use among the auxiliaries, and it is known from a fine specimen, also from Cáceres. Javelots were found in great numbers, of iron like the native type: *olosiderique*. Heads for lances, pikes, spears, harpoons, tridents, etc., were found in the heaps. The Osuna-reliefs let us see the use of a peculiar type of head-protection. The bodies do not seem to be protected neither with mail, nor with metal pectorals. Only a short tunic is found. The shields show a type of *scutum* like that of the Louvre altar besides the circular *caetra*. Both types are represented on the reliefs. There may be a tactical difference in the use of the Iberian *scutum* and the *caetra*, but this is still a question.

Caesar re-established a permanent cavalry, composed of various nations. The Gauls used their long *La Tène III* sword. In Spain they wore their *gladius hispanicus*. The regular Roman horseman is seen on the Louvre altar. At his left he wears a light edition of the *gladius hispanicus*. Weapons for legion and cavalry still seem to be a little mixed. In Gaul and in Spain the *tragula* with *amentum* was common among the regular troops. Some of the iron heads from Alesia may be from such *tragulae*.

In regard to body protection the Celtic and Belgian horsemen were dressed in more or less complete cuirasses of leather or metal. The iron *salade* from Notre-Dame-du-Vaudreuil with its cheek-protections shows the type of head protection. Several other specimens have been found in Switzerland. Many of the *paragnatides* from Alesia may have belonged to such helmets. The Celts may have worn mail-shirts. The

regular Caesarian cavalrymen are represented in the horseman on the Louvre altar. His helmet is of an exceptional shape with its odd *couvre-nuque*. In Caesarian time there is a Celtic influence in the Roman helmets. As to the shields a type of *parma equestris* like that found in Cáceres from the days of Sertorius probably belongs to the equipment.

A special interest is attached to the artillery. This kind of weapon is no new in the Roman armies, wellknown as it had been through almost 350 years. Scipio had used artillery in his campaigns in Spain, e. g. at Numantia in 133 B. C. But it had not been used to such an extent as it came to be during Caesar's campaigns. It formed part of the legion and did not constitute a special corps. Each legion had its own field-ordnance, corresponding almost to modern time machine-gun groups. Caesar seems to have preferred lighter types, such as the *scorpio* for slender arrows.

More heavy types probably were used in the East. Of the greatest interest is the apparatus which in 1911 was excavated in Ampurias, the antique Emporion, near Barcelona and now in Museo Arqueológico in Barcelona. It is a *katatonian*, three-spithamian, arrow-shooting machine. Although only parts of it has been preserved, sufficient remains for solving various problems, not least concerning details of the *peritretes* and *coinicides* of the Hellenistic *euthytonon*. It has a close parallel in the representation on the Vedennius stele from Augustean time, now in the Lateran Museum in Rome. The nomenclature of these engines is difficult, and already in the days of Caesar it was very confused. There is no clear distinction between *catapult* and *ballista*. Investigators generally use to name the arrow-shooting machines *catapults* and the stone-throwers *ballistae*. The author follows Sir Ian Richmond in his terminology and prefers to name the arrow-shooting machines *ballistae* and the stone-throwers for *catapults* in analogy with the terminology of the Middle Ages.

The author concludes his investigations saying that the examinations have not been exhaustive. He has tried to point out the facts of the armament of the Caesarian potential and to supply the picture already given by other investigators.

The conclusions probably must be that the Romans of the days of Caesar have not taken advantages of the experiments from their wars in various parts of the mediterranean world and in Central and West European regions. From the Oriental wars they had learnt almost nothing. It is only later that the cavalry from the Middle East influences the Roman military matters. The development of the *pilum* had begun before the year 58 B. C. As to shields and helmets some in-

novations probably took place under influence from Gaul and the wars of Caesar against the Celtic armies. One can only testify that when the second Civil War started, the individual equipment of the legions in Gaul were superior to the equipment of the legions in other parts of the empire. Archaeological and literary indications support this opinion. Caesar has tried to procure an equilibrium between the tactic armament of the permanent forces, but no more. The alteration of the offensive weapons in the 1st century of B. C. consisted in an amelioration of the already existing types, but not in a more or less revolutioning action. For the auxiliaries of the provinces matters differed. The importance of the artillery must not be left out of question.

The equipment of the officers always depended upon their participation in the battles. We find parade armours from post-marian time. A documentation of the officer's equipment is more difficult than that of the soldier of rank and file because there are less literary description and no informative monuments. According to existing monuments they were still dressed in accordance with Hellenistic mode. Then it is a question, if they were really dressed so or not?

The investigations by doctor Harmand with its exploratory details from a most important period of the Roman history are of great interest. Concentrated as they are, from a limited period, with critical examinations of the sources and with erudite documentation they call upon archaeological interest. The wars of Caesar in Gaul and the hard battles in Spain during the second Civil War belong to some of the most important epochs in European history of military art. Examinations of the weapons used in these decisive battles and sieges—by the Roman legionaries, by the auxiliaries and by the Barbarian forces—are here seen on the background of the military organization of the late Republican time. Their development is a parallel to the development of the armies of Caesarian time. The book has several illustrations, particularly from the Louvre altar, the Osuna reliefs, Celtic helmets as well as the Ampurias ballista. The bibliographical references and notes are extensive and instructive.

A. BR. H.

ANATOL KIRPIČNIKOW: *Les Armes de la Russe Médiévale* (en russe).
Moskva-Leningrad 1966, 2 vols., 33 figs., 69 h. t.

R É S U M É

PREMIER VOLUME

LES ÉPÉES ET LES SABRES

Le présent ouvrage est consacré à l'étude des armes blanches russes du IX^e au XIII^e siècle. Il offre un tableau aussi complet que possible des matériaux archéologiques, arrangés systématiquement et datés. Il décrit l'apparition, le développement, l'extension et l'utilisation au combat des épées et des sabres, ainsi que des coutelas et des poignards. Cet ouvrage contient aussi des schémas typologiques des épées et des sabres qui montrent leur évolution du X^e au XIII^e siècle, et des tables précisant la répartition géographique des trouvailles et leur datation. A la fin de cette étude se trouve un catalogue détaillé des objets.

CHAPITRE 1

SOURCES, TECHNIQUES ET MÉTHODES DE L'ÉTUDE DES MATÉRIAUX ARCHÉOLOGIQUES

Ce chapitre contient une étude critique des objets, des inscriptions, des motifs décoratifs et autres. Il fait des suggestions d'ordre méthodologique. Il analyse des sources concernant les armes du combat corp à corps et il apporte une contribution valable non seulement à ce présent volume, mais encore au volume suivant du même auteur consacré aux piques, aux haches de guerre, aux massues, etc.

CHAPITRE 2

LES ÉPÉES (183 ex.)

L'auteur a lui-même nettoyé à l'aide d'un acide, nommé le réactif Gein ($\text{CuCl}_2\text{NH}_4\text{Cl}$), les lames de façon à faire apparaître les divers poinçons. Ces poinçons, fort nombreux, constituent une nouvelle source historique de grande importance, car ils permettent de localiser les centres de fabrication des armes blanches et de tracer l'évolution de l'idéologie de la chevalerie féodale. 60 par 100 de toutes les épées de la fin du IX^e jusqu'au début du XI^e siècle, à en juger d'après leurs poinçons (noms de forgerons, divers signes en forme de croix, de cercle ou de fer à cheval) ont été fabriquées très probablement dans les ateliers carolin-

giens de la région du Rhin. La provenance des autres épées, de même époque, reste à établir. Certaines portent des signes alphabétiques, des figures géométriques jusqu'au ici uniques, des motifs en damasquinage, sur d'autres ces caractéristiques ont disparu ou bien n'y ont jamais figuré. Aux environs de l'an 1000 on fabriquait en Russie même des lames portant le nom de l'artisan, la preuve en est une épée avec l'inscription suivant en ruse: «*Liodota* (ou *Liodosa*) *Kovali*». Ce fait est affecté également par la typologie des épées (pour leur classification est adopté le schéma de J. Petersen devenu international). Vers l'an 1000 on voit apparaître des formes indubitablement locales (Type A local), qui té-



Épée russe. XI^e siècle (A. N. Kirpičnikov, vol. I, pl. XIII).

R. 1224

moignent de la modification de la poignée d'épée traditionnelle des Francs. Après une époque de tâtonnement et de recherches dans le domaine de formes originales dans les années 1000-1100, le développement de l'épée russe au cours des deux siècles suivants, se conformera de nouveau—avec quelques modifications—au «standard» européen. Aux XII^e et XIII^e siècles on utilisait en Russie des épées de tous les types connus à cette époque en Europe Central et Occidentale. Dans leur majorité il s'agissait d'épées ayant des pommeaux en forme de disque (Type VI). Cependant à côté d'épées proprement romanes, il y avait alors en Russie des exemplaires comportant des poignées tout à fait particulières d'inspiration probablement locale (Types I, II, II-A). Au cours du nettoyage des épées du XI^e au XIII^e siècle on a découvert onze pièces indisputablement importées présentant des noms d'artisans occidentaux, des formules latines et des marques de contrôle. L'interprétation hypothétique des abréviations sur trois épées du XII^e-XIII^e siècle permet d'affirmer leur caractère religieux. L'hypothèse de la fabrication locale d'épées au XII^e-XIII^e siècle est confirmée également par l'analyse typologique, par certains poinçons (ornements, figures et signes, motifs en damasquinage) ainsi que par une icône du XII^e siècle portant l'image d'une épée aux signes d'un prince russe. Au cours de toute la période pré-mongole l'épée était employée par des soldats de métier en premier lieu comme arme d'estoc et de taille.

CHAPITRE 3

SABRES (150 ex.)

La lame courbe a apparu en Russie au X^e siècle comme une arme d'origine orientale. Dans les régions avoisinantes de la steppe, c'est le sabre qui était particulièrement populaire comme arme de combat à cheval. Au cours de X^e-XIII^e siècle il n'a cependant pas éliminé l'usage de l'épée. L'évolution de la lame du sabre présente les caractéristiques suivantes: elle s'est allongée, sa courbure s'est accentuée et son poids a augmenté. La classification détaillée des sabres a été effectuée non d'après leurs lames, mais essentiellement d'après leurs gardes. Aux XI^e-XIII^e siècles étaient surtout répandues des gardes en forme de losange (Type II). L'évolution de la garde tendait à assurer la protection circulaire de la main et à neutraliser les coups de l'ennemi de quelque côté qu'ils ne viennent (Types II-A, II-B, III). Le perfectionnement de la garde a eu lieu aux XII^e-XIII^e siècles d'abord dans les villes du Sud de la Russie et ne présente aucun signe de dépendance à l'égard du sabre des nomades. A la fin de ce chapitre sont étudiés des scramasaxes (10 exemplaires), des

coutelas et des poignards (5 exemplaires). Au combat ils étaient utilisés comme armes auxiliaires d'estoc et de taille.

SECOND VOLUME

LES LANCES, LES JAVELINS, LES HÂCHES D'ARMES, LES MASSUES, LES FLÉAUX D'ARMES

Le présent volume est la suite de l'ouvrage précédent du même auteur, consacré aux épées et aux sabres du IX^e-XIII^e siècle (voir «Les armes de la Russie médiévale», vol. 1). Les moyen du combat corps à corps, tel est le sujet des deux livres. Celui-ci offre un tableau des matériaux archéologiques du IX^e-XII^e siècle, arrangés systématiquement et datés. Il décrit l'apparition, le développement, l'extension et l'utilisation au combat des lances, des hâches d'armes, des massues et des fléaux d'armes. Il y s'agit également des javelins et des massues en bois (doubina). Ce volume contient aussi des schémas typologiques et des tables. A la fin de cette études se trouve un catalogue détaillé des objets.

CHAPITRE 1

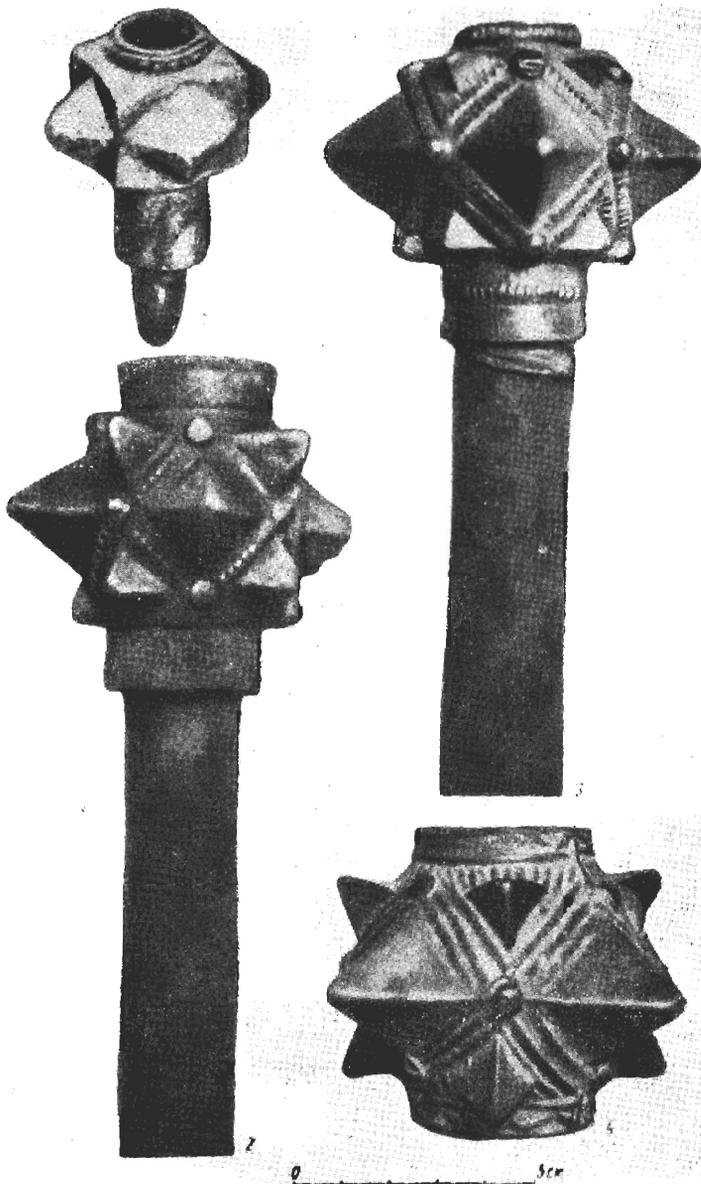
LES LANCES (754 ex.) ET LES JAVELINS (47 ex.)

La lance était une arme des plus employées au combat corps à corps. Son importance a surtout accru dans la période où la cavalerie devient la force principale des troupes féodales. Les guerriers et les armuriers de Kiev du X^e siècle ont utilisé les meilleures formes de la lance, apparues en Europe occidentale (Type I) et en Orient (Type V) en combinaison avec des échantillons slaves (Type III). Si au X^e siècle il existait trois formes principales de la lance (Types I, III, III-A, III-B et V), au XI^e-XIII^e siècle c'est la pique qui devient prédominante. Cette dernière s'est révélée en guise de lance de cavalerie. Au XI^e-XII^e siècle on voit apparaître en Russie l'épieu massif, ayant la forme de feuille de laurier. Cette époque est aussi caractérisée par l'étrécissement de la lance, qui avait la forme de triangle allongé, traditionnelle pour le moyen âge (Types III-B et IV-A). Quant aux javelins de jet (soulitsa), leurs formes imitaient certaines des pointes de lance et l'emploi de ces javelins cédaient sensiblement à celui de la lance.

CHAPITRE 2

HÂCHES D'ARMES (573 ex.)

D'après leurs formes et dimensions les hâches d'armes se divisent en deux groupes: a) les petites hâches spéciales se distinguant par leur



Massues russes de Kiev. XII^e-XIII^e siècle (A. N. Kirpičnikow, vol. II, pl. XXVIII).

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construction et petite dimension (Types I-III); b) les hâches de «petites formes» (dimensions courues: la longueur de la lame, 9-15 cm.; sa largeur, 10-12 cm.; le diamètre de la tête de hâche, 2-3 cm.; le poids, jusqu'à 450 g.). Elles servaient d'instruments universels, aussi bons pour la vie en marche qu'au combat (Types IV-VIII). On dirait qu'elles étaient des copies en miniature des hâches ordinaires. Le perfectionnement de la hâche était caractérisé non par l'invention des formes nouvelles pour la lame, mais par la création d'une tête de hâche simple et solide et par une certaine modification des proportions de la partie tranchante. Toute la variété des formes des hâches se forme au X^e siècle au plus tard. Vers le XII^e siècle elles deviennent de plus en plus unifiées, ce qui s'exprime dans la prédominance des types I et IV-A. Au X^e siècle la hâche était l'arme la plus importante des troupes d'infanterie.

CHAPITRES 3 ET 4

LES MASSUES (102 ex.) ET LES FLÉAUX D'ARMES (127 ex.)

Les massues ont apparu en Russie au XI^e siècle, empruntées au Sud-Est. Elles ont atteint leur plus large extension au XII^e-XIII^e siècle où l'on commence à fabriquer des pommeaux en bronze ayant des formes complexes et parfaites (Types III-IV). La comparaison des moulages de bronze des massues a démontré que leur fabrication était concentrée en premier lieu à Kiev et à d'autres villes du Sud de la Russie. Leur extension dans le pays et à l'étranger faisait naître parfois des imitations locales. Le développement de l'armement défensif a suscité au XIII^e siècle l'apparition des massues aux arêtes et des massues à bec (Types II-A et IV). Les massues étaient utilisées au combat corps à corps pour étourdir l'ennemi. A côté de la massue la noblesse et les simples guerriers utilisaient également en tant qu'arme de choc les fléaux d'arme. Leurs petits poids en os ou en métal sont remarqués en Russie depuis le X^e siècle. C'est Kiev qui était un grand centre de fabrication des fléaux d'arme au XII^e-XIII^e siècle. L'origine et l'extension des fléaux d'arme indique leur rapport au combat de cavalerie. Dans la plupart des cas les fléaux d'arme russes se distinguent par leur originalité locale et dans le nombre de trouvailles européennes, ils se classent parmi les plus anciens.

«La conclusion» dresse le bilan au développement des armes du combat corps à corps en fonction de la tactique du combat, de la formation des armes et du changement de la situation politique et militaire. L'issue de la bataille dépendait de l'arme employée au combat corps à corps, c'est pourquoi on attribuait à sa fabrication une importance de premier ordre. L'arsenal de la technique militaire s'est formé en Russie

au IX^e-X^e siècle en même temps avec la formation de l'Etat féodal et de son armée. Jusqu'à l'invasion des Mongols les espèces essentielles de l'arme ont suivi un développement graduel. Quand même la puissance de l'arme allait toujours croissant ce qui amenait bien souvent à la modification non de toute la construction mais de ses détails. L'armement de la Russie médiévale allait de pied avec son époque et durant trois siècles il a suivi une voie complexe pleine de recherches et de découvertes techniques. Cet armement a été créé dans une situation extrêmement tendue, causée par les guerres à deux fronts: contre les nomades d'Orient et contre certains voisins de l'Europe occidentale. La technique militaire russe du X^e-XIII^e siècle s'enrichissait constamment de réalisations des Orientaux et des Occidentaux. D'autre part, l'étude des moyens de combat russes a une valeur européenne mesurée par la grande contribution de la Russie au développement de la culture d'armurerie au moyen âge.

A. K.