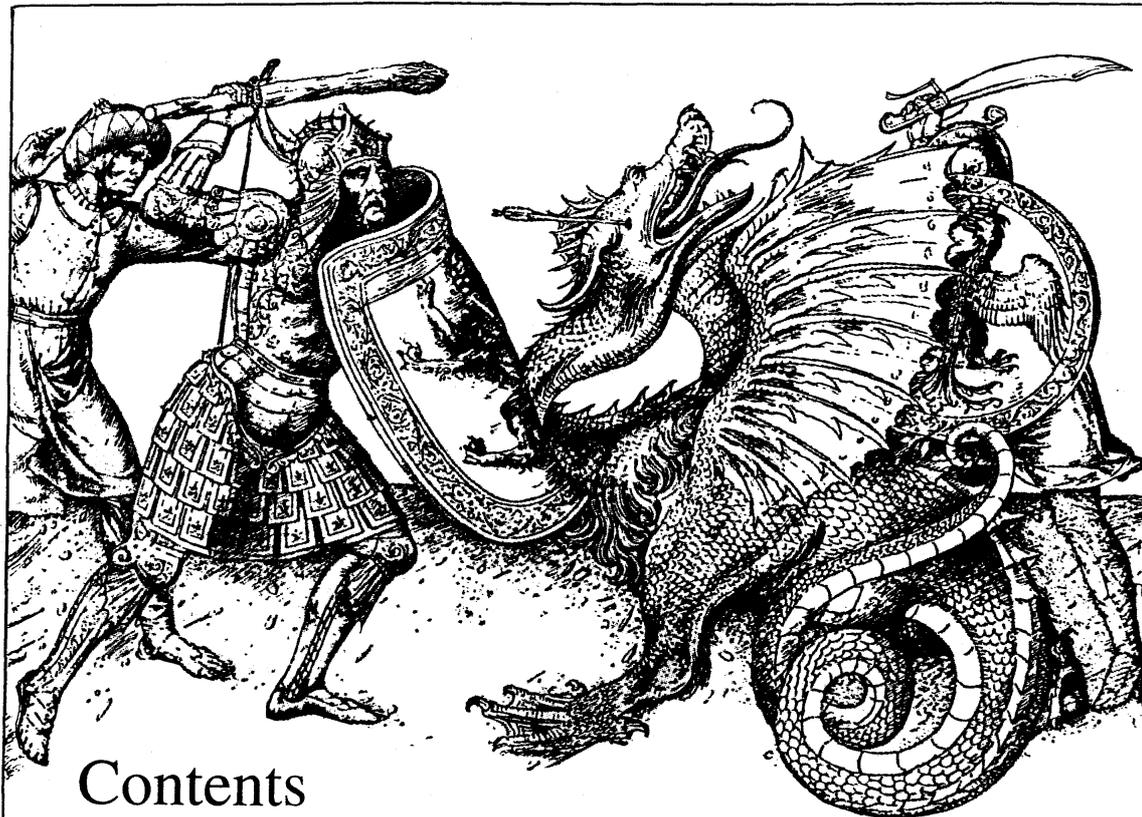


La voix de la
Compagnie de
Saint Georges

DRAGON

The Voice of the
Company of
Saint George



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Editorial

Your editor has gone "on-line" and is dodging heavy traffic on the "information highway." Seriously, if this is the future, there is not a lot to look forward to! Research takes the form of electronic "conversations" which rarely, in my admittedly limited experience, get anywhere. This is (I am glad to say) no substitute for direct research in a serious library (not to mention settling down with a few books and a drink in front of the fireplace on a cold winter's night), although it can be very amiable, even addictive. It certainly does have its uses: the book reviewed on page 18 was pointed out to me by kind electronic correspondents. But all the information you ever wanted is definitely *not* at the end of your fingertips, or available by pressing buttons - it still resides in painstaking observation of contemporary illustrations and documents, and long may it remain so!

We hope that the new section *Questions & Answers* on page 20 will give rise to some correspondence from readers and prove conducive to our receiving some new input and articles. The majority of articles submitted are still in English with German in second place, and although this reflects the proportions of members' nationalities (or rather, mother-tongues), we would still like to see a much greater contribution from the French-speaking members, particularly in view of the fact that, unlike the Germans, there are a handful who cannot read the English articles. Even if we cannot hope for original articles in French, we are still in search of someone willing to translate English or German articles into French so that the magazine can present a fair spread of languages.

NM

Write to Dragon!

We welcome articles or letters for publication in Dragon. These should be submitted to the editor (address above, but better, send an E-mail to 100601.41@compuserve.com) Articles should be sent on a 3.5 inch diskette, preferably in "Text" format, so that they may be "read" by any word-processing programme. We cannot promise to publish typed or hand-written manuscripts (except typewritten MSS in 12-point type) as the time required to re-type these out is not often available. Please contact the editor for any technical information required.

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Livery Clothing, circa 1460– 1480

by Gerry Embleton

Livery Clothing was issued, usually twice yearly, by a king or noble to his servants, soldiers and retainers as part payment for their services. Often these garments – or complete suits – were in the lord's family colours, but frequently they were chosen at whim, or choice of colours was governed by price or availability. The colours and cloths might indicate rank or function within a household, the more expensive cloths normally reserved for the higher officers. This practice gave a nobleman the chance to display his wealth, generosity and power, and at times a fortune was spent on high quality wools, silks and brocades, and lavish amounts of gold and silver decoration and embroidery. Arms and armour of good quality were also handed out to many who served as soldiers and household servants.

A special occasion frequently meant yet another issue of clothing for the entire court such as green and white, or red for a royal wedding, or black for mourning. A triumphal entry into a city, the signing of a treaty, or a visit by the king might require all present, noble, soldier, craftsman and citizen, to be given hoods, coats or entire suits in the same colours.

Badges – embroidered, cut out of cloth or occasionally of gold or silver, were issued in their thousands.

Guilds, associations and political "parties" frequently wore their own distinctive colours, as did contingents of soldiers from various cities or serving under a particular captain.

In time of war, permission was granted for lords, knights and esquires to dress their men in some sort of distinguishing uniform, or coloured garment such as an over-jacket, or give them badges or marks to wear. This was a practice usually frowned upon in peacetime as too strong an outward demonstration of power.

It was therefore possible for a soldier in the employ of a generous lord to accumulate quite a wardrobe. Last year's livery might be re-used by his family or dependents, or worn off duty.

In the late fifteenth century the most common distinguishing mark for a soldier was the "national" cross – the red cross of St. George on white for England, white on red, or blue for France, St. Andrew for Burgundy, etc.

These distinguishing marks might be fixed to the armour or sewn directly on to brigandine and

jack, or on the clothing, on hat, hood, shoulder, arm or thigh, or more usually back and breast.

We know from written accounts that they were frequently worn on special livery jackets, sometimes in their lords' colours and perhaps incorporating his badge as well as that of the king.

In 1481, Edward IV decreed that all soldiers taking part in the Scottish campaign should wear a white "jacket" with the cross of St. George and their captain's badge, presumably on the left breast or in the centre of the cross. Although we have many written accounts of all these practices, illustrations of livery other than the cross are rare, and of badges rarer still.

Many illustrations of soldiers show no insignia at all, each soldier wearing his own coloured clothing and the armies only distinguished by banners, but as many of these illustrations show classical armies, Julius Caesar's or Alexander the Great's, this is not surprising.

It is difficult to imagine the professional soldiers of a medieval noble going into battle *without* clear identification. To do so would be to risk death from friend or foe alike. Literary sources abound with references to distinguishing colours and badges.

It cannot be emphasized enough that the soldiers retained in the service of a nobleman were normally well paid and equipped, and regularly issued with new clothes. They did not usually straggle along in ragged hose and rusty armour. They were professionals whose hire and pay depended on good appearance and suitable equipment. They were part of the demonstration of wealth, success and power that was so important to anyone wishing to gain - and retain - a position in medieval politics.

In this article we illustrate some of the different styles of livery jackets shown in fifteenth century illuminations and paintings, and our drawings of those used by Burgundian troops are based on contemporary written descriptions.

We must emphasize that these are reconstructions, carefully based on fifteenth century accounts, embroideries, paintings and sculptures. There are no surviving examples, so a considerable amount of (hopefully) intelligent guess work has been used. We have intentionally varied the patterns slightly and made some richly decorated and others less so to convey the variety

that we believe existed. No particular heraldic design can be linked by documentary evidence to a particular cut, or richness, of livery jacket.

We would be grateful to hear from anyone who can offer more information on this subject.

PLATE ONE

A. Burgundian mounted archer

The St. Andrew's cross is picked out in studs on a fabric covered breast plate or some sort of brigandine. Note his riding boots and spurs, and his shooting glove.

(late 15th c. engraving. Master WA.
Bibl. Royale, Brussels)

B. Archer bodyguard of Charles the Bold

More than one document illustrates the duke escorted by four of his archers, armed with bows or glaives. All wear short, puff-sleeved, doublets or jacks with the St. Andrew cross. Details vary but the constancy of the main features of costume and arms suggests that they were his usual guard, wearing everyday dress, rather than full livery and armour. A similar "undress" costume can be compared with "full dress" in the two well known illustrations of the Scottish archer guard of King Charles VII of France (Musée Condé, Chantilly)

(Chronik der Burgunder Kriege,
c.1480: Diebold Schilling)

C. Burgundian archer

One of a group wearing blue and white brigandines with thin red crosses. All are uniformly dressed and equipped.

(Bibl. Nat., Paris)

D, E, EE. All the Swiss chronicles show fully armoured men at arms with crosses on their armours. We have found no records (so far) of painted crosses on armour. Duke Charles's Abbeville ordinance of July 1471 states that each man-at-arms must have blue and white plumes on chamfrain and helmet, and a vermilion velvet cross to attach to his armour.

F. A soldier with the white cross, the

"true badge of the king" of Charles VII, on his brigandine. When worn on brigandines, the crosses are frequently (but not always) smaller than those on livery jackets.

(Bibl. Nat., Paris)

G. A second illustration of the Duke of Burgundy's escorting archers, from a later chronicle by Diebold Schilling.

(Bernar Chronik c. 1484)

H. Burgundian archer with short sleeved, high collared, jack. These are carefully drawn in the chronicles, usually on Burgundian archers exclusively.

(Bernar Chronik c. 1484)

I. From an illustration that shows several soldiers wearing "sleeved" brigandines bearing the fleur-de-lys of France.

(Bibl. Nat., Paris)

J. An English prisoner with red and white livery over a blue jacket.

(Bibl. Nat., Paris)

K. A good view of a fairly common type of livery jacket with large armholes and full skirt. It is richly decorated and worn over an arming doublet.

(Caesar Tapestries, Bern Hist. Mus.)

L. The red cross of England worn on a coloured jacket.

M. This is a waist-length livery jacket with the cross of St. George worn over a skirted brigandine.

(Chronique d'Enguerrand de
Monstrelet - Bibl. Nat., Paris)

N, O, Q-S, U. Livery jackets of the same design as 11, but plainer, are worn by pages and soldiers in King René of Anjou's "Le livre des tournois du Roi René", in white, red or blue, blue and buff, brown and white, and black and white. Some have wide arm holes, some fit tightly. Some have full sleeves.

(Bibl. Nat., Paris)

P. Brigandine with small St. André cross.

(Miniature of the Battle of Montlhéry,
1465: Bibl. Nat., Paris)

T. A very common style shown in many different manuscripts, in various

colours, usually with a small cross and with or without coloured binding around arm-hole, neck or skirt.

V. Bowman from the Caesar Tapestry, made in Tournai in 1465-70. Typical of the richly embroidered livery jackets that might be worn by household bodyguards and elite troops.

(Hist. Mus., Bern)

W, WW. Two English archers from a 15th century illustration of the Battle of Crécy (1346). One wears a green jacket, the other murray. Both have small red crosses trimmed with yellow binding.

(Bibl. Nat., Paris)

X. Guards in English livery, from a miniature of Charles d'Orléans, prisoner in the Tower of London.

The figures are tiny but enlargement reveals a yellow edging to the white livery jackets with the red cross of St. George.

The thickness of the yellow binding, wide in our drawing, may simply have been dictated by the width of the artist's brush.

(British Museum, London)

PLATE TWO

A. English archer with white livery and red cross. His short sleeves are turned up and edged with gold or yellow, as are the skirts.

(Bibl. de l'Arsenal, Paris)

B, C, D. Examples of the short sleeved style shown in 1 and variations. Note the lacing at the back and side of 4.

(various manuscripts)

E. Abbreviated livery jackets, tied-on crosses and waist-length tied-on panels seem to have been worn with full armour, the cloth cut so as not to interfere with the moving plates. These men-at-arms wear the red cross of England or the black cross of the Bretons. In the 1460's the Duke of Brittany had an archer body guard that wore his livery.

(Bibl. Nat., Paris)

Plate one



Plate two



Copyright © G. A. Embleton

F. These two soldiers wear a similar style of brief livery jacket but over mail shirts.

G, H. These clearly show the cut of jackets which might carry embroidered badges, and richly display the colours of a powerful noble.

(*"Caesar Tapestries" c. 1465/1470: Bern Hist. Mus.*)

I. French royal trumpeter painted by Fouquet. His clothes are white, his rolled-down hood dark red. Trumpeters and musicians are frequently shown in livery colours even when others wear motley clothes.

(*entry of Charles V into Paris: Bibl. Nat. Paris*)

J. A French crossbowman wearing a fairly common style of jacket, sometimes in livery colours. It has fairly full slashed sleeves.

(*Bibl. Nat., Paris*)

K. Miniature showing an English squire holding a herald's horse. His well-cut jacket has its slashed sleeves tucked into his belt. Livery clothing in all sorts of civilian styles and colours was issued as well as "heraldic" jackets for immediate identification.

L. A typical version of a Royal badge, that of Louis XI of France.

M. A 15th century miniature of Hugues de Lusignan, Comte de la Marche in 1242 shows the count in 15th century clothes. His red jacket bears a richly embroidered gold "B" on his breast. His followers, dressed in red and blue, have a simpler version of the same badge.

N. A royal huntsman of the French king Louis XI wears a blue livery jacket embroidered in gold with a badge incorporating initials and decorative devices. His clothes are half red, half white, the colours adopted by Louis in 1469

O. Clearly a Burgundian archer, the significance of the double "R"s on his breast is so far unknown.

(*Berner Chronik 1484*)

P. A miniature of the battle of Tewkesbury shows a finely embroidered gold rose in outline only worn as a badge and displayed on a red banner. A contingent from Canterbury bound for the Calais garrison in 1470 was issued with red *jackettes* with white kersey roses.

(*Ghent Library*)

Q. One of the Earl of Warwick's retainers wearing his red livery and silver ragged-staff badge. In January 1458 all his 600 men forming part of the Calais garrison wore this uniform.

R. This Burgundian soldier wears an unidentified badge on his thigh: badges were frequently displayed on thigh or arm. His livery jacket has striped decoration, not uncommon in contemporary illustrations.

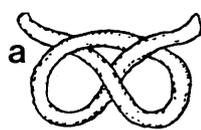
(*late 4th century miniature*)

S. From the same illustration a crossbowman with the Burgundian firesteel badge on his crossbow quiver. Flints, steels, flames or a sprinkling of sparks seem to have been freely used by the Burgundians to decorate clothes, tents and tent & lance pennons.

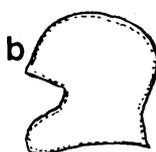
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Typical English livery badges

A. Stafford



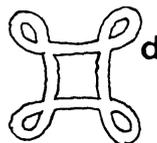
B. Thomas Howard, Duke of Norfolk



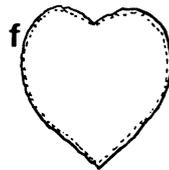
C. John de la Pole, Duke of Suffolk



D. Bowen



E. Courtenay



F. Earls of Douglas



G. Neville, Earls of Warwick



Recette du jour

Fèves nouvelles. Faites les boullir plus que baiennes. Puiz prenez foison percil et petit de sauge et d'isope, et broyez tresbien. Et apres ce broyez du pain, et une pongnee d'icelles mesmes broyez avec pour lyer, puis couler par l'estamine. Puiz friolez le remenant de vos feves en lart, se c'est jour de char, ou en huile ou en beurre, se c'est jour de poisson. Puiz mettez vos feves en eae de char, se c'est a jour de char, ou en l'eae des feves, se c'est a jour de poisson.

Menagier de Paris II v no. 94 (vers 1410)

Faites cuire les fèves nouvelles dans de l'eau bouillante (mettez-y quelques écorces pour avoir un bon bouillon de légumes). Prenez-en une petite poignée et enlever leur peau. Broyez ces feves dans un moulinex avec du persil et d'autres herbes fraîches et une poignée de mie de pain frais: ce sera votre liaison. Faites frire dans du saindoux les autres fèves. Mettez la liaison dans une grande casserole et chauffer, tout en versant petit à petit du bouillon ou à défaut, l'eau dans laquelle les fèves ont cuites. Vous devez avoir une soupe pas très épaisse. Rechauffer avec les fèves et servez immédiatement avec du pain.

NM

Firearms in the Republic of Genoa

by Bruno Chionetti

One of the most interesting chronicles of war in Liguria in which we find accounts of the use of firearms is the *De Bellum Finariensis* of Giovanni Maria Filelfo. He personally followed the war between Genoa and the Del Carretto family of Finale, a small territory 70 kilometres west of Genoa. An attack was launched by the Genoese in 1448 when Milan, which often helped Finale, was in deep crisis. The Genoese particularly hated the Del Carretto family because they made a habit of offering haven to adverse parties exiled from Genoa. For the first time, the Genoese employed a many small bands of mercenary troops, and used artillery in support of their crossbowmen. The town of Finale was built in two parts: one by the sea, guarded by a castle on the shore; and the main walled town a kilometer inland at the junction of two rivers, with a large fortress on a hill.

The Genoese recruited more than 6.000 men, but the Finalese without allies could hardly summon more than 500 to 1.000 men. The Genoese shipped all their equipment to Finale, and laid siege to the seaside castle. It was 50 metres above the beach, and the Genoese first built wooden towers (*bastide*) around it to install the artillery on the two flanks of the hill. In eight days they fired 163 shots from three bombards throwing 500 *libbres* (about 150 kilos) stone balls. The castle walls, which were at the most a metre thick and made of soft stone, quickly fell. The shots were fired from an estimated 200 metres, and proved very effective.

The Genoese were not newcomers to fire power. Guns were probably introduced by the French who ruled Genoa and Savona during the last decades of the fourteenth century. In that period we find for the first time in inventories of defensive weapons, mentions of *bombarde*, small cannons and gunpowder. In 1425 at least four *bombarde* were in use on the town walls of Genoa, and the first mention of them in Savona dates from 1412 when the Marquis of Monferrato attempted (in vain) to lay siege to the town with two cannon.

Handguns, called *serbottane*, were also in use by this time. They are mentioned in the weapon inventories of many castles, and seem to occur as frequently as crossbows by the latter part of the century. Many of the Finalese are reported to have been injured by handguns in the battle just mentioned.

The Finale battle continued with the Genoese moving siege engines forward to the main town, but they were constricted to a very narrow angle, from a distance of 400 to 500 metres. From this higher position, many balls fell into the town: 390 were found intact within the walls after the battle. But from such a distance, and under constant counter-attack by the Finalese, the bombardment proved ineffective. The Finalese established an alarm system, ringing a bell in the highest tower as soon as the watch saw the enemy ready to shoot, and only two deaf old women were killed. The castle itself was out of range.

The siege lasted a long time, and the Genoese then attacked another stronghold in a valley fifteen kilometres away in order to divert the Finalese defense. It took the Genoese ten days to move one bombard there. They broke down the outside walls by mining, and managed to position the cannon to bombard the inside curtain wall of the castle. Looking at the place today it must have taken a tremendous effort. The 150 Finalese packed into the small fortress, which was almost completely destroyed, were eventually defeated by starvation. We are told that a single shot killed 15 men.

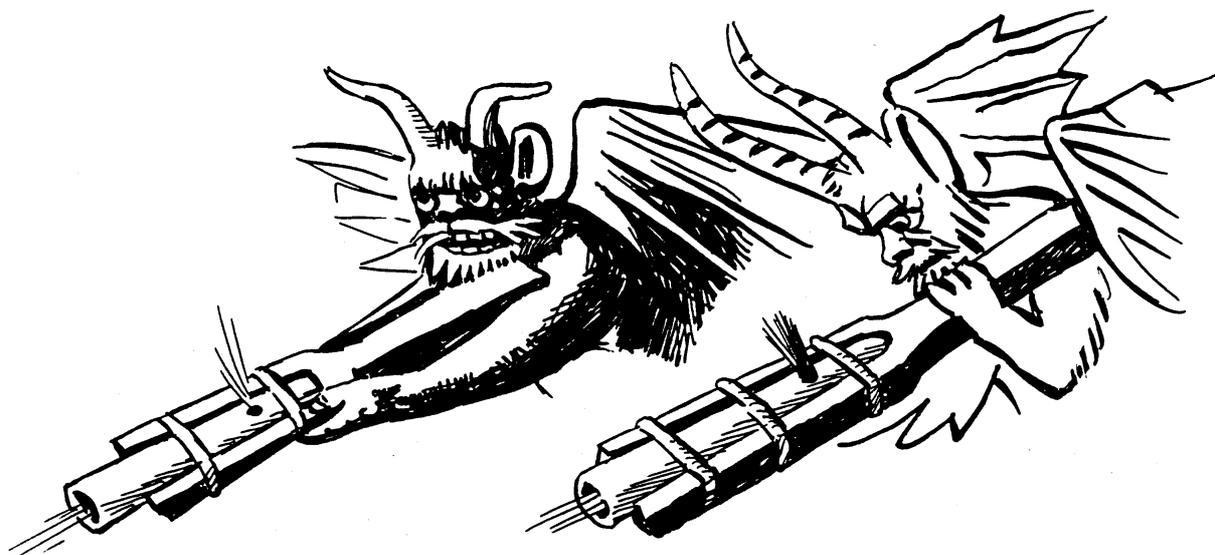
With five cannon, the Genoese could fire more than 500 shots in a week: a stonemason made more than 100 balls in a day.

Finale eventually surrendered after the castle was taken by treason. In the following period, Genoa ruled over the whole Riviera. No major battles took place, and as all the existing castles were obsolete in that they could not withstand contemporary artillery, firearms in the area were not modernized. Apart from naval weapons, up-to-date artillery was only introduced to serve modern fortresses in the first half of the sixteenth century. However, in the march areas, especially near the Tuscan border, the republic introduced much artillery, and the fortress of Sarzanello, built in the last quarter of the fifteenth century, is one of the first examples of strongholds constructed with artillery in mind. Many *serbottane*, *bombardelle* and *scloppettis* appear in inventories of the period, together with recipes for making powder and shot, and instruments for making balls. The inventory of the fortress of Pietrasanta is particularly interesting: in 1484 it was garrisoned with 100 men, with 25 small wall cannon, ten larger cannon and 25 handguns. Small cannon were made of

bronze or iron, and shot lead balls, whilst the bigger iron bombards threw stone balls, or a mixture of nails and shrapnel. By the end of the fifteenth century, firearms prevailed over the crossbow, and sarbataneri (handgunners) were recruited, together with firearms experts from Germany and Flanders.

The first record of firearms in surviving

illustrations occurs as late as 1490, in wall paintings by Canavesio in Briga (see illustration below). Two devils are firing very old-fashioned looking short handguns with plain wooden stocks: one holds the stock into his shoulder, and the other above the shoulder: this charming illustration concurs with the Church's condemnation of firearms as diabolical!



At Sea, by Gerry Embleton

Although some modern writers insist on emphasizing the difficulty of cross channel travel the medieval sailor was just as experienced as his Viking predecessor and, for that matter, his Nelsonian descendent. They knew their boats, the wind, tides and weather signs and in fair weather and time of peace the channel must have been packed with ships. The fishing fleets were out whenever it was possible and the merchant fleets as often as they could. There were more days when wind and weather kept ships in port, and more risk than in modern times when radio can bring fast rescue, but more true sailors. There were pirates, both outside and within the law and raiders from ports at war with each other - or the Royal and Ducal navies, full of soldiers and cannon. Charles the Bold's ordinances include regulations for the government of warships, which

include day and night signals, tactics, etc. Sometimes vessels of opposing sides plied their trade during hostilities, protected by "the small print" in treaties designed to keep political powers in fierce conflict, but the wheels of trade running smoothly (if somewhat quietly). Medieval rulers were experienced at making war with one hand and doing "deals" with the other.

Recent studies of the ships of the period indicate sophisticated and surprisingly large vessels afloat, and in general a very high level of seaworthiness in ship design.

Rival navies fought not only at sea. The Swiss chronicles illustrate heavily protected vessels and rafts, armoured with wood and looking remarkably like American civil war "ironclads" hammer at each other, or castles on the shore, with bombards and cannon

Military Organisation in Switzerland at the Time of the Burgundian Wars

by John Richards

The brunt of German/Swiss military might in the fifteenth Century was carried by arms-bearing, mostly unmarried young men between 14 and 20, at the most 25 years old. These young men would be members of fixed organizations that were grouped, in the countryside according to parish, valley or county and in the towns and cities according to guilds. These organizations, called *Knabenschaften*, or "troops of boys," were the mainstay of medieval wars and their feeling of collective pride often bubbled over into acts of war, particularly during festivals where feelings usually ran high. During Shrovetide, New Year and other religious festivals, they would band together and move out into the neighbouring vicinity to steal cattle, destroy property, demand ransoms and cause general havoc. At the same time, their main *raison d'être* was to protect their own neighbourhood from such raids. The chronicles of the late fifteenth century often show these young men, dressed in the latest fashion, their long hair partly covered by a turban and a mass of ostrich or peacock feathers, displaying their pride in being considered the elite.

Most of the training, military expertise and traditional customs of war were passed on through these organizations, and through constant practice these *Knabenschaften* could be potent and enthusiastic, if not always very disciplined, forces. It must not be forgotten, that with the rapidly increasing population of the fifteenth century, these youths would form a substantial part of the local population and as most had not yet completed an apprenticeship or training of some description, and were not yet married, they were considered by military leaders to be the most expendable. It was for this reason that these lightly-armoured (the degree of armour depending on their standing in society), highly mobile, reckless and somewhat unreliable troops, armed mainly with the halbard, sword or

arquebus, were usually grouped in the *Vorhut*, the van or "forlorn hope". The main body of troops, or *Gewalthaufen*, was made up of the older, mostly married men whose higher degree of discipline enabled them to manoeuvre in a fixed formation such as a pike block and to support the van when things went awry. The chronicles show well-ordered formations, often in step, with a high degree of armour protection. The front ranks often wear complete body-armour, the legs left free for greater mobility, while even the rear ranks wear at least a breastplate, helmet, bevor and arm-protection. The formation would form around the banners, with the elite halbardiers protecting the banner-bearers, and arquebuses, crossbowmen or archers protecting the flank, while manoeuvring was carried out to commands passed on by drum, fife, trumpet or horn. The function of this main block was to provide stability and support for the young men of the van, to stop them fleeing and to provide shelter from an attack by cavalry. In the Burgundian wars it would appear that the *Gewalthaufen* was only under serious threat at Grandson, where it came under fire from the powerful Burgundian guns and here discipline under fire won the day for the Confederate army.

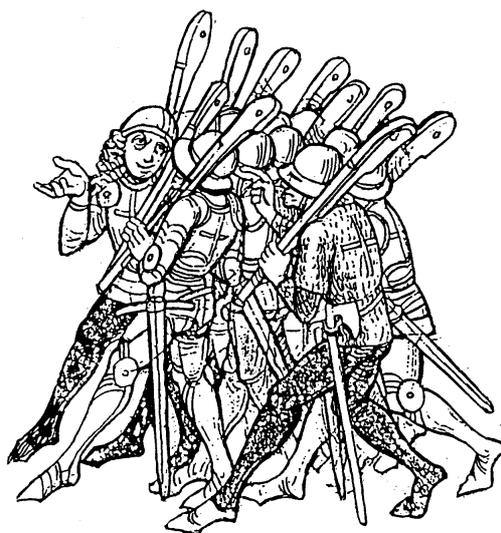
At Morat (Murten) and at Nancy, the Confederate *Gewalthaufen* supported the *Knabenschaften* as they stormed, outflanked and routed the Burgundians.



Arsenals and Equipment

Although the quality and type of weapon used during the medieval period was still largely a matter of personal choice and resources, there were increasing attempts, particularly by the cities, to standardize equipment, particularly with regard to guns. The arrival of the cannon on the medieval battlefield meant that armies needed the organisation and logistics to acquire, store, transport and work them, and this organisation gradually spread to all aspects of arming and

equipping soldiers. At the end of the fifteenth century, it was the cities that could afford the highly paid gunnery masters and other artillery and siegework specialists, and it was therefore here that most of the modernization of military logistics was carried out. Apart from artillery, the cities would regularly purchase siege-equipment, tents and transport vehicles for food and ammunition. The governments of the cities also started to have a larger influence on the arming of footsoldiers, insisting for example on the use of halberds and pikes. As these weapons could only be effective when used by formed bodies of men, the cities ensured that a stock of such weapons was readily available, and began employing their own people to make them, rather than importing them from outside. In city accounts, we find payments for halberds, pikes, breastplates, arquebuses, crossbows and above all, ammunition. Up to the beginning of the fifteenth century, such weapons were stored in the town hall. Later, as the cities gained in wealth, the arsenals became expensive, highly decorative show buildings, containing enormous quantities of weapons; they were often displayed to visitors, particularly visiting diplomats, for nothing else was so indicative of the might and wealth of a city than the state of its armoury. However, despite the attempts of the governments to achieve a standardisation of weaponry, to lay down the required standard for the equipment of footsoldiers or to train the armies, the military organisation of the time was still governed by at least a degree of inefficiency and at worst, complete disorder. Personal equipment seldom met the requirements of the instructions laid down. In the arsenals, modern weapons were stored next to obsolete guns, booty from past wars, ammunition of all sizes and indescribable rubbish of all kinds. At the end of a list of instructions for the standardisation of equipment, the scribe notes: *God knows how they will be implemented.*



Although in time of war the arsenals would be

opened and equipment loaned, it is clear that careful inventories had to be prepared of the equipment issued. Weapons that were lent out were not returned and often councillors, such as those of Zürich, issued instructions that those not returning arquebuses and crossbows within eight days were to be treated as thieves. Missing items of personal equipment would be borrowed from friends or neighbours, and where soldiers preferred their own version of a weapon, items from the arsenal would be swapped or sold on. When, after the battle of Grandson, the Bernese turned to Lenzburg for further support, they noted that those who stayed behind should lend their armour to those taking part in the muster. In Wil, the following order was posted:

And he who has armour and does not need it, there being someone who has mustered who does not have armour, then he who has armour should lend it to he that does not, so that this armour may be a comfort to him.

A list of equipment prepared in Lucerne in 1425 shows how a soldier could equip himself with borrowed material:

Hosang has (borrowed) 1 breastplate and 2 arm defences [Stoess] from old Baepstin, 1 bevor from Lienhard and 1 helmet from Goedlin.

In a similar list prepared in 1437, the wife of Huber loaned Henslin Hiltprand 1 breastplate. This reference

shows that women, particularly wealthy widows, were responsible for the maintenance of their husbands' equipment. The Lucerne "Armour Order" of 1st October 1438 noted that *we have also ordered, that those of our citizens and those living here, widows and orphans, whom we estimate to have pensions of 20 pounds, 30 pounds and 40 pounds should have [in addition to the standard armour] a coat of mail, which is a good armour. Those with a pension of more than 40 pounds, i.e. 60 pounds, 70 pounds or 80 pounds, should have two breastplates. Those with more than 80 pounds should have a complete armour for every additional 40 pounds of*

pension.

During the fifteenth century the governments started to check the personal equipment of the men of military age on a regular basis. In the country, the people (organised according to community, parish or judicial area) were ordered to come together on certain days during the year and show their weaponry and armour to the local leadership. House to house inspections were organised and lists were prepared of the equipment seen, particularly of armour. Any gaps in the required equipment were punished by fines. An order issued by the rulers of Zürich in 1382 states that *nobody should pawn their armour, either to pay their taxes or to pay a debt. Nor should anyone, either Christian or Jew, loan anyone money on an armour or pledge armour as collateral. If anyone should contravene this order, he or they should have their armour taken from them and be punished in such a way that all others will be warned. Also, everyone should maintain their armour as is required. He who has learnt a craft and has 30 guilders or more to his name and no debts, should maintain a complete armour: a breast and back-plate, a helmet, leg armour and a lance of good quality. He who has not learnt a trade but has a fortune of 50 guilders or more and no debts, should also keep a similar armour. He who has less than 30 guilders and no debts, whether he has learnt a trade or not, should be told by the troop commanders how he should be equipped. And the commanders should go from house to house and should tell everyone, as described above, that they should be well equipped. And when a person has been told and he then appears on a certain day without this equipment, he should pay a fine of half of a mark.*

Such orders were issued constantly throughout the fifteenth century and lists, called *Harnischrödel* or "armour musters," prepared during the *Harnischschau* (literally "armour show") would be used as reference for future years. The occasion of a *Harnischschau* would

also be used to hand round general instructions and laws governing the behaviour in the field. In some of these lists, we even find the names of the leaders and the numbers of men under them, occasionally with their type of weapon, e.g. halbard, pike, arquebus or battle-sword. At first sight, these bureaucratic listings show a well-organised military system. However, in many cases the listings prepared at such musters tended to be very imprecise and probably never showed the true state of the military. In the Lucerne muster of 1443, for example, an attempt was made to organise the ratio of weapon types thus:

Item - He with a dot before his name should be a shooter (i.e. crossbow, bow or gun), Item - He with a dot after his name should carry a pike, Item - He with two dots before his name should carry an arquebus, Item - Those who have not been marked should all carry a halbard, Item - And all who carry a crossbow, arquebus or pike, should also carry a sword or a good long dagger.

Since these musters tended to occur during festivals, it was impossible to keep a large body of men standing still long enough to write down all the names correctly, not to mention checking a soldier's identity. This meant that lists contained names of dead men and men who had moved away, while other men could avoid the muster (particularly, one assumes, if the condition of their armour left something to be desired!).

Diebold Schilling notes that *it was at that time a praiseworthy old custom, for the good of the city of Lucerne, that all citizens would come together on the great Zinstag during the Autumn fair [in 1478, the "Great Zinstag" fell on the 6th October] and, after the evening meal, put on their armour and practise the use of weapons. This happened at night, so perhaps much went undone that should have been done, and it would have been better to prevent this. But arrogance caused things to be left as they were. At that time, it was law that the use of arms be practiced and the old people paid more attention to this than people do now.*



The picture in Schilling with this entry (Folio 130r) shows Lucerne units with invited units from Entlebuch, marching through the Baselgate at Lucerne to take part in the "armour-show" on the *Zinstag* during the Autumn fair. They march to the accompaniment of drums and carry mostly pikes.

It should however be noted that all of this lack of organisation was totally irrelevant in a time of war. At a muster at the start of a military campaign, more people would appear than were ever noted in the lists and it was possible to afford the luxury of sending the worst-equipped (usually also the most notoriously undisciplined) men home — a most dishonourable punishment, and incentive enough to insure that one's armour was up to scratch.

Although we can find little evidence for the existence of a standardized drill governing the training and manipulation of halbard, pike and arquebus in the field, we can assume that it was impossible to manoeuvre formed bodies of troops without some system of orders, and we know that much was governed by the use of acoustic instruments such as drums, bagpipes and fifes. Military organizations would however have had ample opportunity to practise the use of their chosen weapons and much would have been handed down from generation to generation. Pikemen, for instance, would have learnt by

example on which shoulder to carry their pikes, how to turn from side to side without becoming entangled, and how to deal with footsoldiers or cavalry. Manoeuvring their fixed formation would however have required far more skill, and here it is certain that drill was implemented. Whether or not much complicated manoeuvring was done, (or was even advisable), in formation on the battlefield once the army had formed its ranks facing the enemy, is a matter of conjecture. We know for example that the Confederate army maintained a coherent, formed pike-block under fire at Grandson, but were in complete disarray by the time they had crossed the *Grünhag* at Morat. At Nancy they were able to encounter the enemy only after crossing a stream and negotiating a thick hedge, so the formations were broken up. Even the Burgundian army, influenced by Roman organisation and tactics and considered by the medieval world to be the most modern and highly trained army in existence, broke and ran at Grandson after a particularly complicated manoeuvre had been ordered (the front ranks had been ordered to about-face and retire a certain distance to allow the artillery a better view of the enemy). However, whatever the level of drill, we can be certain that it was far more advanced than the "undisciplined hordes," so beloved of modern history books.

Illustrations based on the Schilling Chronicles.

Laundry for the Company of Saynte George

At last John Howe has found an illustration of a 15th Century washerwoman at work showing clearly her wash-board.

She beats the dirt out of the washing with a wooden bat. It would be good if we could reconstruct her equipment. Does anyone have more information on 15th Century washing techniques and soaps?

From 'Le Christ et la Vierge au Lavoir' (Christ and his Mother washing).

Johannes de Montevilla: "Itinerarius" 1488, Jean Priiss Bibliotheque Nationale et Universitaire de Strasbourg K 2490 folio F 1 verso



Ausbildung der Landesverteidigung in Württemberg in der zweiten Hälfte des 15. Jahrhunderts

von Hartmut Writh

Graf Eberhard der ältere hat die Weiterentwicklung oder Professionalisierung seiner Landesverteidigung mit großen Engagement betrieben. Dieses war in der zweiten Hälfte des 15. Jahrhunderts in Europa eine Zeit der Raubzüge, regionale Kleinkriege, Rechtsunsicherheiten und Machtverschiebungen, auch dringend angeraten. Den Kern der württembergischen Streitmacht bildeten nach wie vor die Reiterei. Diese setzte sich traditionell aus Lehensleuten, adeligen Dienern und ihren berittenen und gewappneten Knechten zusammen.

Das eidgenössische und das burgundische Vorbild führte aber auch zum verstärkten Ausbau der Fußtruppen. Hier wurden besonders die Artillerie und die Schützen gefördert. Die Geschütze, Büchsen und Armbrüste wurden überwiegend in Nürnberg und Italien eingekauft.

Für die Entwicklung ist kennzeichnend, daß im Amt Urach 1469, 3% des Aufgebots und 1489, 20% des Aufgebots, Büchsenbeschützen waren.

Aber nicht nur die Ausrüstung, sondern auch die Ausbildung wurde ab den siebziger Jahren deutlich gefördert (war hier ev. Burgund ein Vorbild?). Ganz besonders entwickelte sich das Preisschießen, getrennt nach Armbrust und Büchse. Die Aufgebote wurde sogar zu Wettkämpfen über die Landesgrenzen hinaus entsandt. Dieser Trend ist auch auf zahlreichen Illustrationen der Zeit nachvollziehbar (Hausbuch, eidgenössische Chroniken). Im württembergischen Staatsarchiv gibt es zwei Dokumente, die konkrete Informationen hierzu liefern:

1) Ausschreibung der Stadt Herrenberg für ein Armbrust- und Büchsen-schießen.
1478 August 24

Vogt, Bürgermeister und Richter sowie Schützenmeister und Schießgesellen der Armbrust- und Handbüchsen-schützen zu Herrenberg laden durch des hochgeborenen Herren, Herrn Eberhard Graf zu Württemberg und zu Mömpelgart etc. des Älteren, unseres gnädigen Herren, seiner Gunst versichert auf den 24. Oktober zu einem mehrtägigen, getrennt ausgetragenen Wettschießen der Armbrust- und der Büchsen-schützen nach Herrenberg ein. Für diesen Wettkampf sind zahlreiche "Kleinod" als Preise ausgelobt!

2) Befehl zur Aufstellung einer Landestruppe
1481 August 31

Eberhard der Ältere teilt zu Tübingen mit, daß er zusammen mit Eberhard dem Jüngeren neue "Rüstungen" (Verteidigungsorganisationen, nicht der Körperschutz ist gemeint!) beschlossen habe und daß im ganzen Land Knechte zu Roß und zu Fuß ausgelost werden sollen. Er befiehlt, im Amt Tübingen 200 "der werlichsten und geradsten Knecht zu Fuß" auszuwählen, sie gleichmäßig mit Handbüchsen, Armbrüsten, Lanzen und Hellebarden auszurüsten und dafür zu sorgen, daß jeglicher mit seiner "Gewehr", die ihm zugeteilt wird, auch die Schützen, also bereit sei und es auch übt und lernt, diese wohl zu gebrauchen! Auch sol diese "Rüstung" (Wehrorganisation!), künftig aufrecht erhalten werden! Ausgewählte, die durch Tod oder sonstwie ausfallen, sollen also ersetzt werden.



Formation and Organisation of the Defence of Württemberg in the second half of the fifteenth century.

by Hartmut Wrieth

Count Eberhard the Elder eagerly developed and professionalised the defence of his lands, something which was indeed advisable in the second half of the fifteenth century, a time of raids, regional wars, uncertain laws and shifts of power.

The core of the Württemberg army remained the cavalry, consisting of vassals, servants of noble descent and their armed *Knechte* (soldiers) on horseback. Following the example of the Swiss Confederacy and Burgundy, the infantry was also improved, special care being given to the training of gunners. Cannons, guns and crossbows were purchased mainly in Nuremberg and Italy.

The following figures clearly show this development: in 1469, 3% of the Urach array were hand gunners, in 1489 their number had increased to 20%.

Starting from the 1470's however, special attention and support was given not only to the equipment, but also to training (again perhaps

following the example of Burgundy). There was a vast development of shooting competitions for both crossbow and handgun. Arrays were even sent to competitions in other countries. This trend is evident in many contemporary illustrations (Hausbuch, Swiss Chronicles).

Two documents of the *Württembergisches Staatsarchiv* give specific information:

1. Invitation of the Town of Herrenberg to a shooting competition for crossbow and handgun.
24th August 1478

Vogt, Burgermeister, judge, gun-masters and members of the shooting guilds of Herrenberg invite in the name and assured of the favour of our gracious lord the noble count Eberhard the Elder of Württemberg and Mömpelgard etc., to a shooting competition lasting several days and held for crossbowmen and handgunners separately, at Herrenberg on the 24th of October. There will be many valuable prizes.

2. Order to set up a defence troop for the country.

31st August 1481

Eberhard the Elder informs the Vogt of Tübingen that he has decided to build a new defensive force and that Knechte on foot and on horseback shall be chosen by lot throughout the country. He gives the order that in Tübingen 200 of the most "capable and upright" foot soldiers be chosen; to arm them with handguns, crossbows, pikes and halberds and to guarantee that everyone - including the hand gunners - be ready to learn and practise the handling of his weapon.

This force shall be maintained on a permanent basis. Those who drop out because of death or other reasons shall be replaced.

(Translation Regina Karl)



The Fletching of Arrows: a detailed look at techniques

by Clive Bartlett

There has recently been a lot of discussion about whether arrow fletchings were tied down as well as glued, and whether the glued area was coloured or not.

Like everything, there is no simple "yes or no" answer to this. The historical period, the country and the type of arrow all have to be defined. For the purposes of this article I shall restrict the period to the second half of the fifteenth century and the first quarter of the sixteenth - the widest period that could possibly be covered by the Company of St. George. Let me start by saying that, first, I have not seen a single illustration showing Italian or German arrows with tied-down fletchings and, secondly, in north-west Europe feathers were either only glued down or, if thread was applied, the feathers were spirally bound for their entire length. I have yet to be convinced that any illustration shows binding at the fore or fore-and-aft ends only (though the latter was, and is, the Japanese practise). Modern "longbow men" usually tie the fore end down to stop the front of the feather lifting. Otherwise there is a danger of discovering, after a shot, that your arrow has only two feathers - and then noticing that the third one is sticking through the fleshy part of your bow-hand. Victorian archers were content to just add a "blob" of extra glue to the feather fore-end - and some modern archers practise this too.

There is no doubt that the long, large, triangular-shaped feathers on the large diameter English war arrow (a type also used by the Flemish and the French) were both glued and tied on. Readily available evidence for this is illustrated by 1: the Zamorra Tapestry (Flemish, second half of the fifteenth century) 2: the arrow found in 1878 in Westminster Abbey (English, date unknown but post 1465) 3: arrows recovered from the *Mary Rose* (English, 1545, which can be accepted as examples of the typical English war arrow - the Westminster example is identical) 4: the Flodden memorial window in Middleton Church, Manchester (English, c.1515).

The other very common type of arrow, often featured in Flemish and Italian illustrations, has feathers in a shape now known as "parabolic", though often longer at the fore end - which makes them more graceful-looking than their modern counterpart. The Italian versions are usually cut very low. The shafts can be of any diameter, often

tapered (like most English war arrows) and usually with a large bulbous nock. They almost always have some type of small bodkin or broadhead, though a small, simple target "pile" would be quite legitimate. I have never seen these arrows with tied-down fletchings. Good, readily available, illustrations can be found in 1: *The Garden of Earthly delights*, Hieronymus Bosch (Flemish, fifteenth century) 2: *The Martyrdom of St. Sebastian*, Mantegna (Italian, c.1481 - the "version" in Vienna) 3: *The Martyrdom of St. Sebastian*, Antonio Pollaiuolo (Italian, c.1475) 4: Portrait of Antoine, Grand Bastard of Burgundy, Rogier van der Weyden (Flemish c. 1460).

The colouring of the feather area on "unbound" arrows is for protection against moisture. Though it is far easier to apply wax or polish to an arrow before it is fletched, this obviously severely impairs the adhesive qualities of the glue. Therefore a thin film of glue was first applied all over the arrow in the area to be fletched and the feathers stuck on. The space between the feathers was then usually, but not always, painted. Occasionally the whole "shaftment" area was painted (this is the area, below the nock, that is "framed" between the string and the bow when the bow is strung but not drawn). There is also a little evidence that during the later fifteenth century the art of "cresting" was practised. This consisted of painting a few coloured bands, of various widths, in the shaftment area below the feathers, which possibly originated as a form of identification (oddly, the arrows in the Mantegna painting, listed above, appear to show cresting bands under the feathers. This is either a variation on normal practice, done to prove me a liar, or implies that someone did a very careful painting job). The rest of the arrow was then waxed or polished.

There are two reasons for tying down the feathers. The first is connected with the reason for having long fletchings and is to do with giving support to the shaft of the arrow. For technical reasons (which, for lack of space, I will not go into here), if an arrow snaps as it is being shot, the breakage will occur in the shaftment area. The second reason is to do with production and logistics. English war arrows were made to a government specification and in phenomenal numbers, either by contractors or government-conscripted flatters. Production was continual,

year by year, and intensified in advance of a planned campaign. Therefore the arrows had to be able to withstand lengthy periods of storage and the rough handling of campaign service. It could also be assumed that many would be used more than once. It is my opinion that the government Ordnance department, mindful of the carelessness that can occur in mass-produced items, and with an eye to the water-based glues then in use, stipulated that fletchings were to be tied down as well as glued to ensure that the feathers did not simply drop off when the arrows came to be used and re-used. However, one thing leads to another - the thread itself now has to be protected, otherwise it can easily break through mishandling, during transportation, or when passing through an object or the undergrowth. Therefore a thick layer of glue (or perhaps wax - cf. below) was painted over the top to protect it. In fact, it is more likely that this second layer was applied beforehand and, whilst it was still "tacky", the thread pulled into it (personal experience has convinced me this is the better method).

On "bound" arrows, the space between the feathers can also be coloured, but this is not necessarily paint. There is a reference from Edward I's Household accounts at the end of the thirteenth century for the use of *viridio greco* on arrows. This has to be verdigris, the green "rust" of copper (my dictionary gives the origin of the word as *viride graecum*, "Grecian green"). On English war arrows, it is my belief that the glue used for the thick second layer over the thread was mixed with verdigris (a green tint is shown on all the *Mary Rose* arrows I have seen). The reason for doing this is not known, but it may make the glue more waterproof - although there is an "old wives' tale" from the furniture trade that verdigris can act as an insect repellent - which would have been very useful for keeping moths away from the feathers during storage. It may have been that other fletchers mixed in some other medium, hence the different colours seen in some illustrations.

However, to complicate matters, there is a French treatise called *L'art d'archerie* published at the end of the fifteenth century which states "...You must know that there are only two sorts of shafts, the glued and the waxed...". The late nineteenth century editor added a footnote: "...according to whether the feathers were glued on, or fastened with waxed silk. M. Gallice

*informs me that he has found in a dictionary by Nicob (1616): 'Sheaf: all glued shafts, iron-headed, for archery. 'Glued', i.e. whose feathers are glued and not waxed' ...". And Gerry Embleton has recently informed me of a mid-fifteenth Burgundian reference to "...green wax for feathering arrows...". I can only say that, subsequent to reading *L'art d'archerie*, I experimented with using wax based compounds - but I can in no way work out how to successfully apply them to the shaft. The bowyer and fletcher Chris Boyton has suggested that by "waxed", they refer to the glue and verdigris compound. Alternatively, it may be that "waxed" is simply tying with thread, while "glued" implies use of the compound. The question remains open.*

If no additive was used on "bound" arrows, and no paint on "unbound" then, as hide, fish and plant glues are almost colourless, this area would appear plain.

Now, all the above is a very restrained answer (and the colouring of the actual feathers was not raised in the question). There are many, many variations. So please don't write in with "Ah, but I have an illustration by Hans Thimbleweaver showing boomerang-shaped arrows with no feathers, painted with zig-zag lines and bound along their whole length with barbed wire" (...though, come to think of it, judging by my score I must have been shooting some of those at the last competition...).

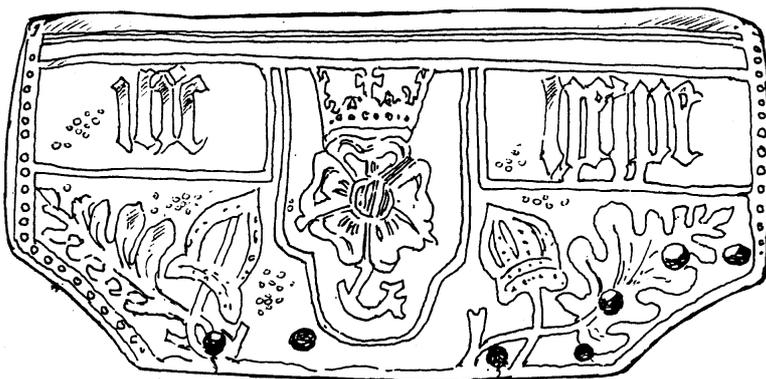
It appears that a few people have been kind enough to buy the booklet *The English Longbow man 1330-1515* that I was commissioned to write. Unfortunately, the publishers cut the text and captions to ribbons, so much so that I am seriously thinking of producing some kind of substantial *errata*.

In the meantime, I am concerned that some readers, who may be re-enactors, will use the illustration of the archer's bracer in the British Museum as a model to copy! Therefore, to try and reach as wide a readership as possible, I am publishing the full caption in this edition of *Dragon*.

This archer's bracer is of *cuir bouilli* (hardened leather) and decorated with a crowned rose, acorns and oak leaves and the words *ihc helpe* (Jesus help). The decoration was originally enhanced with gilding and colouring. Because of the rose and crown, and the design of the wording, the bracer has been dated to the early sixteenth

century. Measurements (dimensions not exact) are: length 4 inches (125mm); width 5 inches (147mm); thickness of leather 1/8 inch (about 3mm). It has been assumed that the fastening has always been by a thong passing through the holes. However, the holes do not completely "pair", there being nine holes on one side and seven on the other, all randomly placed, and in most cases disfiguring the decoration. During a close examination, kindly arranged by Dr. Gaimster of the British Museum, I was able to establish that the original fastening had been by a tongue and buckle, or two tongues, on the end of "Y" shaped straps riveted to the bracer - a common medieval method (and one which features on some of the surviving *Mary Rose* bracers). At some date, anywhere between the sixteenth and nineteenth centuries, through age or accident, the four original rivet holes, now enlarged and included with the others, had been ripped (the tears are just visible in the photograph, below the holes first and third left) and the method of fastening changed.

¹ British Museum. Catalogue reference BM MLA 1922, 1 - 10, 1



Master E.S. *The Martyrdom of Saint Sebastian*

Book Review

An alternative to Arbeau

De Practica seu Arte Tripudii (On the Practice or Art of Dancing), by Guglielmo Ebreo of Pesara (William the Jew). Edited by Barbara Sparti, Oxford University Press, New York 1993. ISBN 0-19-816574-9

I make no apologies for reviewing a book that has already been on the market for two years, but which has heretofore escaped my attention, and no doubt that of other members.

Although Thoinot Arbeau's *Orchésographie* (1588) remains the earliest text that can be qualified as instructive and clear, Ebreo's work, illuminated by Barbara Sparti's translation and excellent introduction, gives us a fascinating glimpse - and I use the word advisedly - of courtly dancing just at the time of our interest, in the 1470's.

Unlike *Orchésographie* however, this is definitely *not* a practical manual for modern reconstitution; it is a scholarly book, but one that should be on the shelves of anyone remotely interested in early dancing: you don't get much earlier than this, after all!

More and better -quality illustrations would not have been amiss - but then we should not be too fussy: we are lucky to have the book at all!

NM

Rushlights: how to make and use them

by Nicholas Michael

Rushlights, also called candle-rushes or rush-candles, were certainly in use in Europe from time immemorial up to well into the 19th century. Oddly enough, the Romans do not seem to have used them (nor the Scandinavian countries, where suitable rushes did not commonly grow). The cheapest form of lighting, they seem to have been ubiquitous, from palaces to peasants' hovels.

In spite of their certain antiquity, the first irrefutable references to rushlights in Britain date from the 16th century. Shakespeare refers to the rushlight in *Taming of the Shrew*:

And be it moone, or sunne, or what you please:
And if you please to call it a rush Candle,
Henceforth I vowe it shall be so for me.

To make rushlights

There are quite a few texts giving specific instructions on the making of rushlights, and although these date from the nineteenth century, there is no reason to think that the method was any different in earlier times.

First, find your rushes... These were of two types, the soft rush, *juncus effusus* and the common rush, *juncus conglomeratus* (the tall waterside rushes, called reedmace were not used for rushlights). A botanical reference book with illustrations may be necessary to locate the right variety, but other types could work perfectly well, although I have not tried using the "wrong" ones.

Cut the rushes about 12-18 inches long, and soak them for a couple of days, weighing them down if necessary. Then peel them of their skin, but leave a little thread (about a quarter of the circumference) all the way up the rush, so the pith has some foundation (this is easier said than done!). Hang them up to dry, thoroughly.

Soak the dried rushes in suitable fat (see below). They should not be dripping - just enough so that the pith absorbs it. The original vessel in which the rushes were soaked was called a "grisset," a long boat-like affair. Obviously for the purposes of reconstruction any suitable container can be used, an old oil drum or whatever: the amount of fat required is quite small, and has only to cover the rushes. Drain them well before use.

The fat

Rushes were impregnated with fish and vegetable oils, or the kitchen drippings of animal fats. I use any old cooking oil because it's so

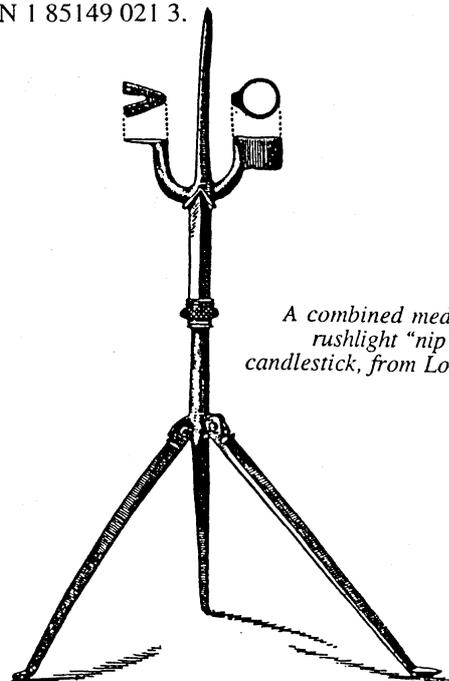
convenient (and odourless), but if authenticity is the order of the day, fish oil, bacon fat, suet etc. should be used. There is also evidence that both olive and rapeseed oil were used. If the fat is a solid type, like suet, it will first have to be melted and made scalding hot before immersing the rushes in it. Suet has the advantage of solidifying in cold temperatures, but it is a messy operation at any rate.

Using rushlights

Originally, rushlights were gripped in a "rushnip", a plier-like device, or wedged between a candle holder which had a spike on the side. I have never come across any rushlight support previous to c. 18th century. If anyone comes across any earlier source, I should be grateful to hear from them. In practice, of course, a piece of splintered wood or any support at hand suffices!

The angle is important: for maximum economy: fix it at around 45 degrees to vertical. For best light, it can be fixed almost horizontally - and lighting both ends gives a double light - burning the candle at both ends!

Apart from painful and smelly experience, I am indebted to John Caspall's *Making fire and Light in the home pre-1820* published by the Antique Collectors' Club, Woodbridge, Suffolk, 1987. ISBN 1 85149 021 3.



*A combined medieval
rushlight "nip" and
candlestick, from London*

Questions—and Answers

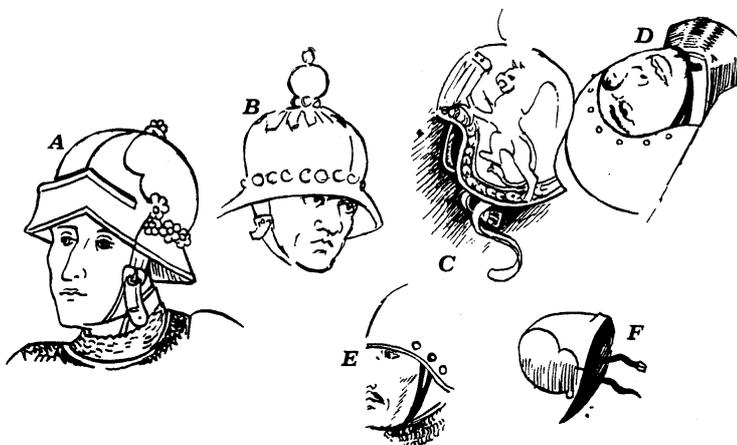
Q. I have seen a helmet chin strap fastened with a buckle suspended on a short leather strap from the left side of the helmet, the long (right hand) part of the chin strap passing up through the buckle.

A colleague says this is wrong. Do you have any references please?

Harvey Bowen.

A. I have looked very hard and found very few fifteenth century illustrations of chin straps and even fewer of buckles, which may simply be due to the fact that many details in miniatures are usually simplified by the artist, and we quite frequently see them in modern books reproduced larger than their original size.

Some helmets were apparently fastened to the back of the shoulders by a strap and buckle and some simply tied on under the chin. One or two illustrations show the chin strap



passing *outside* and over the bevor and buckled under the chin. It is difficult to imagine how a soldier could have run - and fought - without a chin strap to keep his helmet firmly in place.

As far as I know no fifteenth century helmet survives with its chin strap intact, although a few linings or traces of them survive.

A few examples are illustrated and as you can see, the position of the buckle varies.

A. Brass of Sir William de Tyringham. 1484 (Tyringham, Bucks)

B. Beauchamp Pageant. Illustrated c. 1485-90.

C. Drawing by Pisanello for a medal of Alphonso V of Aragon (in the Louvre).

D. Flemish tapestry c. 1480 (in Zamora Cathedral, Spain)

E. Flemish illustration, c. 1480. Several sources show divided straps like this one.

F. Flemish miniature c. 1470.

Q. Do you have any references of the mail "shorts" that were worn by fifteenth century soldiers? How were they held up?

Dietrich Pott

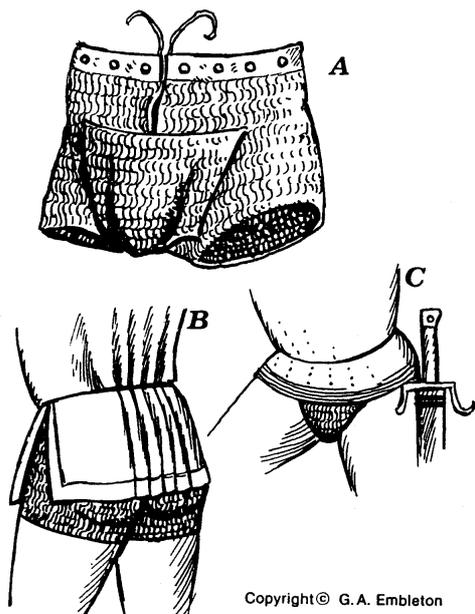
A. "Braies d'acier" are described as part of the equipment of archers and pikemen in the 1471 ordinances of Charles The Bold, Duke of Burgundy and they appear in many manuscript illustrations, although none show how they were supported (B & C).

In the Augsburg Armourer's book known as the Thun Sketchbook (now lost) was a drawing of a pair (A) in conjunction with a full harness. There is a waist band with what look like holes for points.

In one of Thalhoffer's works is an illustration of a mail shirt which incorporates a mail flap and codpiece built into the rear, passing between the legs and fastened in front.

Surviving examples of mail shirts like this with a well-fitting, tailored flap do survive.

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