ARMS & ARMOR

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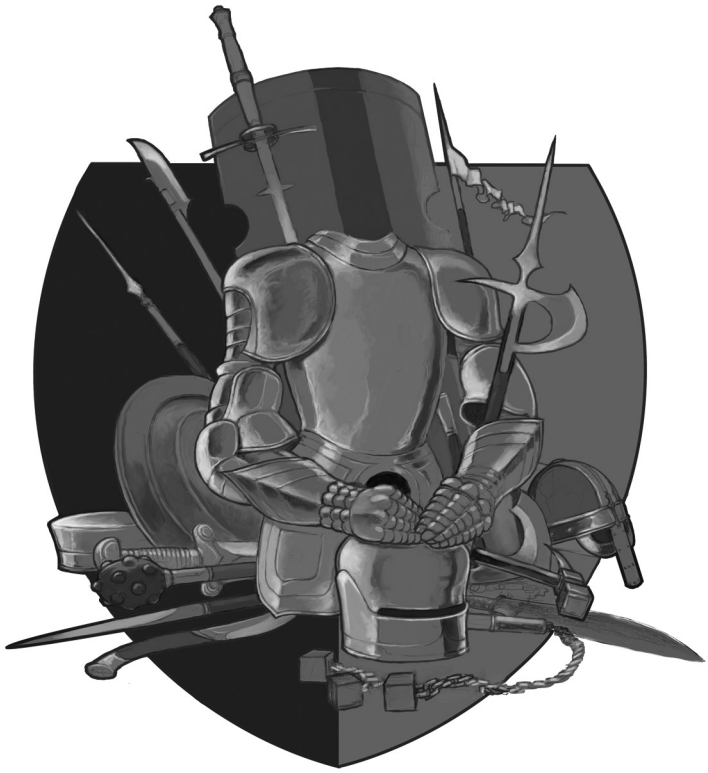


INTRODUCTION

Welcome to **Arms & Armor**. This list and brief description of weapons and armor has been compiled in parts as requests from those playing the game, Steve, my own interest in weapons and armor from the days of yore, and as a result of continuing discussions and disagreements at the table over the specifications of the weapons our characters and their enemies employ in battle. That said, I would like to make several things clear.

This product has been written as a supplement for **Castles & Crusades**, in particular, and role playing games in general. This is basically an illustrated guide to weapons and armor with what we consider to be the important information about each one. As such, information regarding the historical significance of the weapons or armor, their impact on battles, their impact on the history of warfare, and its evolution over time has not been addressed. Nor has much mention been given to fighting styles and use beyond the basics of each weapon.

This tome is not scholarly and not intended to be such. Although I have tried to ensure that all the information included is as accurate as possible, I do not have the background or resource material to create books such as those written by Ewart Oakeshott and others. The naming and categorization are based on commonly accepted terms and categories. However, it should be noted that there is much disagreement over this in the scholarly literature and amateur weapons community. Some categories and naming are mine and some are based on the works of others. In a few cases, I have created my own weapons. I have noted these.

The information contained herein is compiled by me from notes, various books, the internet, and various other resources I had on hand or could acquire. Even with that material, I found that I had to cull weapons and armors, conflate a few and simply ignore vast swaths of others. Man has been making weapons for 100,000 years or more. In the last 10,000 years, the number and nature of weapons has increased dramatically and in the last 5,000, the means of killing has increased astronomically. There is not enough room or time to cover it all. I have tried to produce a cross-section of weapons from time and place such that, when choosing weapons for your game, a large assortment of options is now available.

This book has been divided into three parts with several sections in each part. The first part concerns armor. A brief description of armors and shields are provided. The second part concerns weapons. This part has been broken down into clubs, swords, knives, spears, etc, and a brief description provided. Please reference the table of contents for a closer look at the subsections. The third section contains role playing game related statistics. The index provides a ready page reference for those in need of one.

ARMOR

Body armor is primarily a passive defense. Meaning that the armor's purpose is not offensive (though pieces such as the gauntlet could be used offensively) and that it offers protection once a blow has landed. It is understood that fighting in armor entails managing the placement of the body or components of the armor in such a way as to deflect or render a blow less effective. Some may consider it active in that regard. For this discussion and for the stats presented, however, armor is considered passive. Active defense involves the use of shields, weapons and maneuvering.

Armor has been designed over the past several thousands of years using a vast array of materials and designs. Some were effective, others less so. Some are effective against specific types of weapons while having less utility against others. There never has been a perfect set of armor. Weapon makers have always discovered gaps, holes or weaknesses in armor. The armorers responded accordingly, constantly improving armors. Armor design reflects this back and forth exchange.

Armor design and availability are also dependent on other factors. Technology, skill, and resources limit the types of armor available to any group of people. The method of production for armor is extremely important with regards to its availability (without the proto-industrialization of plate production the plate of the renaissance would never have been so common). Armor design had to incorporate the wearer's fighting style and weapon use.

Weight and bulkiness are major considerations when armor is designed.

Morphology of Armor

The following illustration is of a full set of gothic plate mail. Many of the parts and pieces are noted. This should serve to allow the reader to more correctly identify the parts of armor. Though the illustration is of plate armor, many of the pieces correspond to other types of armor as well.

Illustration 1.0 Field Plate

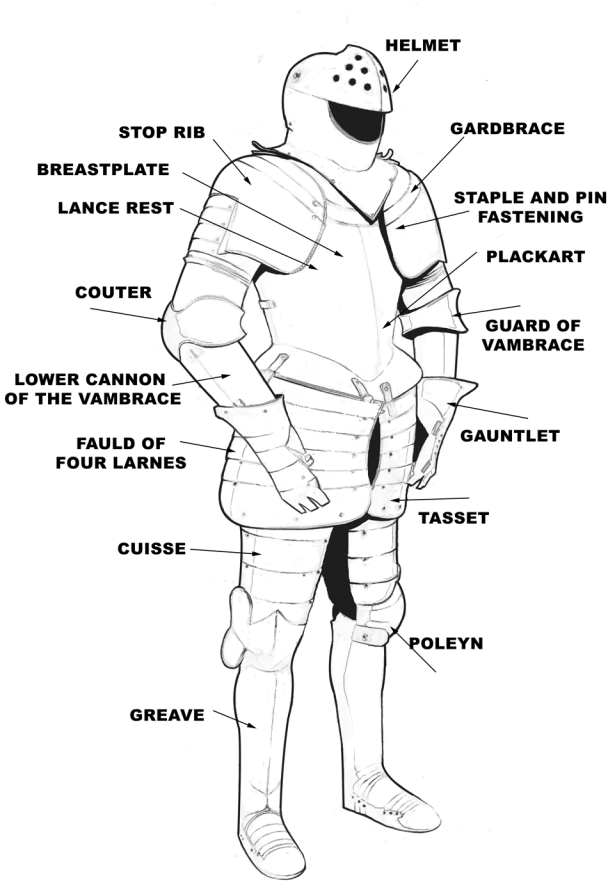
I have included a partial list of the components of a set of armor. This is based on late medieval armor. This list should suffice to describe the various components of armor found throughout the world. For example, the armor used to cover a samurai's thigh is named a haidate. This could just as easily be called a fauld.

COMPONENTS OF ARMOR

AILETTE: Square or round metal plate worn on the upper shoulder. This is either part of the plate armor or added to mail or other armors. The ailette protects the shoulder area and neck to some degree.

ARRET (lance rest): A metal plate or notch under the right arm pit on a breast plate. It serves to rest the butt of a lance.

AVANT-BRAS: This is a part of plate mail. It refers to the armor for the forearm.



AVENTAIL: A mail skirt that attaches to the bottom of a helm and drops down to cover the shoulders and neck. It is detachable.

BAZU BANDS: A pair of metal plates worn on the forearms. They cover only the outer portion of the forearm.

BEVOR: This is a metal collar and chin guard. It is often worn with a sallet to offer protection to the neck and lower face.

BESEGEW: This is a small round or square piece of metal attached to plate or mail armors and used to protect the armpit.

BRACER: A leather band or strap worn on the wrist and arm to prevent injury to that area when firing a bow. It is commonly used to refer to a vambrace.

BRASSARD: Refers to the entire arm armor for a suit of plate.

CAMAIL: A hood of mail that hangs past the neck and shoulder. There is an opening for the face. It is often worn underneath a helm.

CHAUSSES: The leg fittings for a set of plate.

COURDIERE (couter): This refers to a piece of armor covering the elbow. Usually used as part of plate or coat of plates.

COMB: Part of the helmet stretching from above the eyes to the back of the head. The comb strengthened the helmet.

CUISSARD: A pair of cured, woven leather pads used to protect the upper thighs. It was often worn over mail.

CULET: Metal lames attached to a currais or backplate to protect the lower back.

DEMI-BRASSART: A piece of metal armor used to protect the upper arm. It is usually worn as part of plate armor or coat of plates.

DEMI-JAMBART: Refers to the armor covering the front and upper leg/thigh region. This is metal and usually worn with set of plate armor or coat of plates.

EPAULIERES: A metal plate often attached to a hauberk which protects the front and top of the shoulder.

FALLING BUFFE: A large piece of armor protecting the throat and the lower face. It is similar to the bevor, except it goes up much further on the face and is made of lames such that the facial portion could be lowered.

FAN PLATES: Metal extensions attached to the armor on the elbow or knee. They protect the outside of the elbow or knee.

FAULDS: Two metal flaps that hang over the upper thighs. The flaps are attached to a curaiss or breastplate or other armors as possible.

GAUNTLET: Refers to a glove made of metal and articulated to allow for free movement of the hand and fingers.

GREAVE: Any armor that covers both the front and back of the calf. Usually used in reference to plate armor, but the use of greaves predates the arrival of plate armors by thousands of years.

GORGET: A metal collar that covers the neck and upper chest. It is often worn with a curaiss.

GOUSSET: Any mail used to cover or connect otherwise exposed areas in a suit of armor.

JAMBART: Metal plates worn over the thighs and calves as part of plate armor.

HOGUINE: A piece of mail or metal plate that hangs from the back of a curaiss or backplate and protects the behind and upper rear thigh region.

LAME: Overlapping and articulating bands of metal used to protect the thighs, shoulders, and waist.

MANICA: Segmented bronze or iron plates overlapping one another. The manica was worn on the arm and covered it from shoulder to wrist.

PECTORALE (HEART GUARD): A small 8-12 inch square or rounded plate of bronze or iron covering the center part of the chest.

PIXANE: A mail or leather collar that covers the neck upper chest, shoulders and back.

PLAKART: A piece of metal armor that covers the stomach. It is usually attached to mail, leather or similar type armors.

PLASTEON: A metal breastplate specifically designed to be worn over an aketon and underneath a gambeson.

POLEYN: A metal cap that covers the knee. It is articulated and worn over mail or with plate armors.

REREBRACE: A piece of armor used to protect the upper arm. The armor usually covers at least ¾ the circumference of the arm or the whole upper arm. It can be made of plate, mail, scale, leather or other applicable armor types though it is usually used in reference to plate armors.

ROUNDREL: Pieces of metal used to protect and reinforce areas of armor that are exposed as a result of joints. Typically these are round and found on the shoulder, elbow and knee.

SABBATON: Plates of metal used to offer protection for the foot. These are articulated to allow movement of the foot.

SHINBALD: Any armor for the front of the calf and protects the shin. The armor can be metal, leather, or even bone.

SPAULDER: A single piece of armor that covers just the shoulder. It can be worn alone, over mail, or as part of plate armors.

TACES: Strips of metal attached to a breastplate to offer protection for the upper thighs and posterior region.

VAMBRACE: Metal plates used for the forearm. Often used as a part of plate armor or a coat of plates.

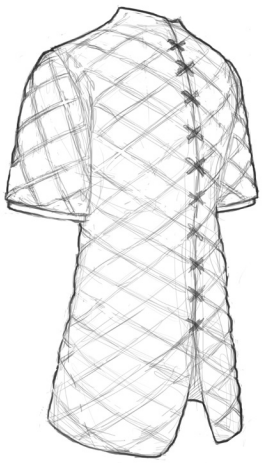
VISOR: Part of the helm that covers the eyes, nose and mouth. It is retractable.

BODY ARMORS

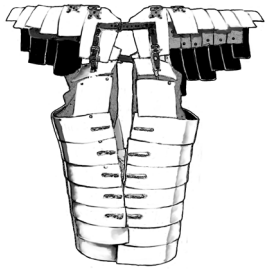
Armor covering the body and worn like clothing has been extant for thousands of years. The primary purpose of body armor is to deflect or render harmless a blow from a weapon. The type of body armor worn usually reflected a fighting style, whether in individual combat or as a mass of troop, technology available, and skills of the artisan making the armor. The earliest and simplest armors are made of leather and hide and cover various portions of the body. Wood, bark, shell and bone were also woven together to produce armor. Later, woven materials were used to create thicker and more reliable armors. With the advent of metallurgy, bronze and then iron and steel were used to create even more complex and reliable armors.

To be useful, armor has to fulfill two essential functions. It must primarily be able to fend off some blows, especially from missile weapons and those weapons it was designed to be used against. Secondly, the armor must not be so bulky to wear as to hinder the movements of the person wearing it. Although all armors reduce one's maneuverability to some extent, none of the armors used consistently across the ages hindered the wearer's ability to use their weapons or fight and move. Otherwise, the armor would have been discarded or replaced. There is, of course, a trade off; greater protection versus greater maneuverability.

The armor types described below are, for the most part, categorized into construction types and not into culturally specific types. The exceptions should be clear. Those listed as culturally specific type generally fall into a construction type and are supplied for interest and as examples of how the construction types can be applied to historical types. Many armors sound quite similar. The differences in some armors are the manner in which the components are attached to one another and, if applicable, their backing. Splint, for example, has plates sewn to one another and then attached to a backed whereas laminar has plates sewn directly to a backing material. The functional difference between the two could be dramatic as laminar armors tend to offer greater mobility and freedom of movement.



AKETON: The aketon is produced in a similar manner to padded armor. It is a jerkin constructed of a quilted cotton, canvas, leather or wool stuffed with the same or other pliable material. It is more tightly quilted than padded because the intent of the aketon (for this discussion) is to be worn under chain or plate and other armors to help prevent chaffing, cutting or bruising that might occur otherwise from wearing that armor alone. However, it can be used as armor as well and adds a layer of protection with the other armors described in this section. The aketon can be made for full body coverage or just a jerkin. It can also be made as an undergarment for a horse's barding. The aketon was developed along with chain and plate armors.



BANDED: Please reference splinted armor. This armor type only exists in the role playing game community.

BREASTPLATE, BRONZE AND STEEL: The breastplate consists of two metal plates that join under the arms to cover the breast and back. The breastplates were made of bronze and later iron as that became more plentiful and the metallurgical technology to produce it developed. Each portion of the breastplate is constructed to fit the person wearing it and often patterned with insignia or faux musculature. Less expensive versions were plain and functional. The breastplates served well to fend of slashing blows and missile weapons. This armor was used widely in Rome and ancient Greece as well as later in the European Renaissance.

BRIGANDINE: This armor covers primarily the chest, upper arms, and upper thighs. The brigandine is constructed of small metal plates sewn into or riveted to a canvas or a leather backing. The outside is covered with a canvas, cotton or leather covering that is likewise sewn to the metal plates. This enables the plates to stay together. The brigandine is a durable and

tough armor that allows great flexibility. It takes considerable skill to make properly. It was developed in the in the late Middle Ages and early Renaissance in Europe.

BIRNIE: The birnie is a very short mail hauberk. This mail armor is distinguished from those like it by its size and design. The birnie only covers the torso. It does not cover the arms, legs or upper thigh/groin region. It is put on as a pull-over shirt is worn. The birnie is designed to be worn over an aketon.

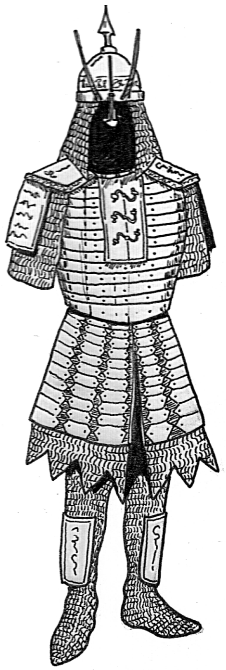
BYRNIE: This is a mail shirt. The byrnie only covers the torso and upper arms. It is worn as a pull-over shirt would be. As with other mail armors, there are usually gaps in the armor; in this case, underneath the arms. However, more expensive byrnies have those gaps covered. The byrnie is not designed to be worn with any other type of armor.

GAMBESON: The gambeson is constructed in the same manner as padded armor. It is a quilted armor of cotton, canvas, wool, or leather and stuffed with the same or other pliable material. The gambeson, however, is designed and tailored to be worn over other armors. It can be made to be worn over leather, chain, padded, field plate, and even (though very rarely) over full or gothic plate. Because the goal is to be worn over other armors, the gambeson is bulky and loose enough to make it unsuitable to be worn alone for armor. The gambeson could be produced to cover just the chest or as a full suit. It could also be produced for a horse's barding. The gambeson also served to protect the armor beneath it from the elements.

HIDE ARMOR: Hide from rare or fantastic beasts can be used to make armor. The process of making the armor is much like that used to make leather armor. The hide is tanned and boiled or soaked and boiled to produce a desired shape. A jerkin with upper arms and upper leg coverings is necessary for this to be considered armor. However, full suits can be created with hide. The hide used for this process must be very tough but thin enough to be worn without undue hindrance. For the purposes of **Castles & Crusades**, the hide of any non-humanoid creature with natural AC of 14 or better can be used to make hide armor. It takes immense skill and time and material to create hide armor. This may also be worn with an aketon.

JAZERANT: This is a type of mail armor. The mail is sewn between two layers of other material. Usually the under layer is a padded or quilted cloth and the outer layer leather or quilted cloth. This armor typically only covers the torso, upper arms and upper legs, though full suits would certainly have been possible. This armor originated in the Near East and spread to Europe. The process of making a jazerant, outside of mail production, would have been a fairly easy one.

LAMELLAR, WOOD OR BONE: Lamellar armor is constructed by taking small rectangular pieces of wood (such as ash or bamboo), horn or even bone or similarly hard material and lacing the pieces together in a pattern to create a suit of armor. Many different types of material were used to construct the armor. This usually depended entirely on availability and cost. The suits of armor would be time consuming to make and take quite some skill. Due to the nature of the lacing, this type of armor offered great mobility over similar armor types such as scale, splint, or laminar armors. However, these suits could weigh quite a bit and were very susceptible to destruction in battle due to the exposed lacing. On the other hand, they could be easily repaired by those wearing them. The suit could be worn with an aketon.



LAMELLAR, METAL: Metal lamellar armor is constructed by taking small rectangular pieces of metal and binding them together to form a suit of armor. The plates were placed in a pattern to maximize mobility. The suits of armor would be time consuming to make and take quite some skill. Due to the nature of the lacing, this type of armor offered great mobility over similar armor types, such as scale or laminar armors. However, these suits could weigh quite a bit and were very susceptible to destruction in battle due to the exposed lacing. On the other hand, repairs the to the armor were fairly easy and could be performed by those wearing them. The suit could be worn with an aketon. This type of armor found its greatest use in eastern Asia and is ubiquitous with the Samurai of Japan.

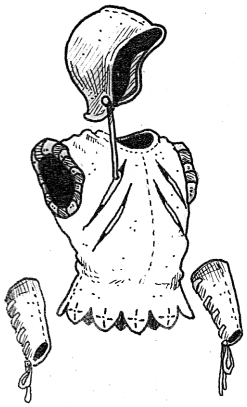
LAMELLAR, LEATHER: Leather lamellar is constructed with small pieces of stiffened or cured leather strung together to form a suit of armor. The leather strips could be formed in many manners and layered over one other to maximize mobility. This type of armor is fairly inexpensive to make though may take some time. The armor could be used to cover the torso, upper arms, and thighs; though, was rarely used to cover much more. It must be mentioned, however, that full body suits were made. The straps holding the armor together are hidden as best as possible, but (as with all armor of this nature) the straps were susceptible to damage. The straps can be readily repaired, however. This armor can be worn with an aketon.

LAMINAR, LEATHER, BONE: This armor consists of bands of cured or stiffened leather, bone, or horn overlapping one another or attached to one another in strips. The bands are attached to one another on the top, bottom and side and often to an interior leather coat. This armor allows for great flexibility and protection when not extended to cover the entire body. The strips are placed horizontally over one another and cover the torso and up arms. Suits that cover the thighs, legs, and lower arms are made as well, though less frequently. This armor

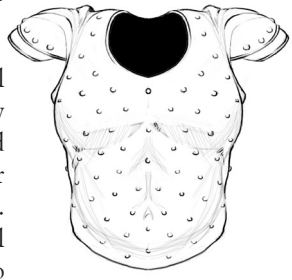
offers good protection against missile and cutting weapons. It is fairly durable as the strapping holding the armor together is often hidden to prevent it being ripped in combat. This armor has been found throughout Asia, the Middle East and Europe and can be worn with an aketon.

LAMINAR, METAL (LORICA SEGMENTATA): This armor consists of bands of metal overlapping one another. The bands of metal are attached to an interior leather coat. The bands of metal allow for great flexibility and protection when not extended to cover the entire body. The strips of metal are placed horizontally over one another and cover the torso and uppper arms. Suits that cover the thighs, legs, and lower arms are made as well, though less frequently. This armor offers good protection against missile and cutting weapons and requires great skill to produce. It is fairly durable as the strapping holding the armor together is often hidden to prevent it being ripped in combat. In the case of some Asian varieties, rivets were used to hold the plates together. This armor can be worn with an aketon and was made famous by the roman legionnaire of the Imperial period.

LEATHER, CUIRBILLI (BOILED LEATHER, CUIR BOUILLE): This refers to a thick leather that has been boiled. Boiling leather in urine, brine, ammonia, or other liquids significantly shrinks and strengthens the leather (though makes it more brittle). The cured leather is then used to make armor. One of the more useful aspects of boiling leather is that it could then be molded into required shapes increasing its utility. Hence, boiled leather has been used to make particular pieces of armor such as greaves, breastplates, hats, pauldrons and many other pieces to fit in specific places. Also, boiled leather has been cut into strips to make scale and lamellar armors. The boiling offered a great improvement over other leather armors but at a slight cost in mobility. Cuir Bouille can be used to make numerous types and shapes of armor. It takes some skill to mold boiled leather as well as more time and materials than normal tanned leather.

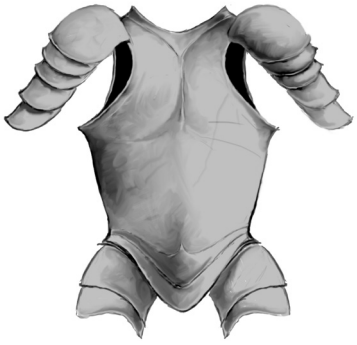


LEATHER, LIGHT OR TANNED: This is a jerkin constructed of tanned leather. The leather is not very thick and offers minimal protection against any weapon but is better than nothing. It can be worn as clothing, is very cheap, and the time and skill to construct it is low. It is often worn under other types of armor or alone. This leather is more easily punctured and cut than padded and suffers degradation more quickly. Leather has the bonus of not hindering the movements and agility of those wearing it.



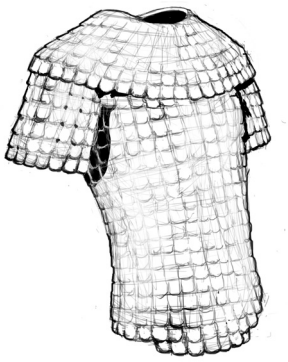
LEATHER, STUDDED: This is a typical suit of leather armor strengthened by small metal studs. The leather is boiled or soaked in brine, ammonia, or other liquids to shrink and fit as desired. The leather then has small metal studs attached to it in tight patterns to strengthen the leather and ward of blows more effectively. It can be worn with an aketon. Studded leather is more expensive and time consuming to make than light leather armor, though does not require great skill to produce.

LEATHER SUIT ARMOR: Leather suit armor differs from light leather in that it is designed for combat. It is a thick leather, tanned and often soaked in brine, urine, or other liquids to shrink and strengthen the hide. The leather suit covers the arms, chest and head and often hangs to the knees. It can be worn under other armors to help prevent chaffing and bruising that might otherwise occur. Leather suits degrade fairly quickly but offer the advantage of a full range of motion for those wearing it. They can be worn with an aketon. They are also very cheap and do not require great skill or time to make.



LEATHER COAT: The leather coat is simply a knee length, 3/4 sleeve thick leather coat. It is relatively flexible, and is often treated to make it waterproof. It serves as much as protection from the elements as is does from weapons.

LORICA PLUMATA: This is a type of scale armor used by the Roman military elite. The scales were small and feather-like in appearance and attached to a leather backing. Though tightly woven and intricate in its patterning, the armor only covered the torso and upper arms. Its combat utility is debatable yet its appearance is quite impressive and a sign of rank. This armor is expensive, time consuming to make and only master armorers could make it.



MAIL: Chain mail, as it is commonly called, deserves its own basic description. The types of chain armors are discussed separately (byrnie, hauberk etc.). This armor is constructed by joining small rings of metal together. The rings of metal could be very small or larger rings depending on the skill level of the artisan, the metal available and the desired effect. The rings are riveted to one another in the back of the loop so that no rivets receive direct blows from weapons. Usually there are 4 links branching from a central link. Five linked mail designs and others are known as well. This armor is generally a very effective type of armor for absorbing cuts and chops and puncturing attacks (it

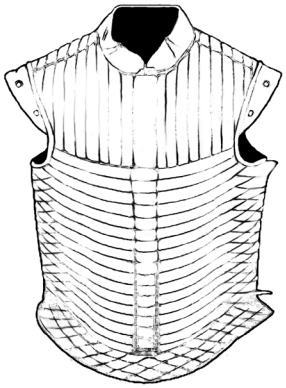
was a mainstay of armor for nearly 2000 years). It could be made of iron and later examples are known to be made of steel. This armor is believed to have been first invented by the Celts but was quickly transported to Rome, the Middle East, and Asia.

MAIL AND LEATHER (BANDED, AUGMENTED): This is a mail armor that has small leather strips laced between the links. This added layer of protection increased the durability of the mail and the protective nature of the armor. There is little historic evidence to suggest this armor actually existed. Bands or strips of leather were used to augment portions of mail to make them stiffer or hold a certain shape but as a whole suit, none has been found (that I am aware of). Also, the leather strips added little more protection than a leather backing would. This would be a rare armor and time consuming to make with little added value for the effort.

MAIL, HAUBERK, HAUBERGEON: This is a shirt of mail (please see chain mail above). This type of mail predominated in the middle portion of the Middle Ages in Europe. The shirt of mail is worn as a pull-over shirt and covered the torso, arms and upper thighs. Usually, there is split in the shirt at the groin to allow for greater mobility and for riding a horse. This armor can be worn with a gambeson and aketon. It has to be fitted to be worn with an aketon.

FULL CHAIN SUIT: A full chain suit consisted of a mail hauberk, coif and leggings, called chauses. The pieces were usually manufactured together, but could also be assembled from separate pieces. The chain suit could be worn with aketon or gambeson, or even a breast plate.

PADDED (QUILTED): Padded armor is constructed by quilting and is often referring to a quilted armor. The shell of padded armor is constructed of cotton, wool, leather, or canvas tightly quilted. The stuffing for the quilted material varies. This can be leather strips, cotton rolls, horse tail hair, wool or any similar pliable material. They were made primarily to cover the torso, upper legs, and usually had high collars (much like a padded jerkin). A suit can also be made to cover the limbs and head as a full padded suit. There are even examples of padded suits for horses (padded barding). Padded armor is not intended to be worn with other. This armor provides a good defense against both blunt and edged weapons and is most susceptible to thrusting attacks. Being made of cloth, it is not very durable over the long term and would require frequent repairs to maintain quality. It is a fairly inexpensive armor and does not require nearly as much skill to make as metal armors such as chain and plate though it is a specialized skill. Padded armor has been worn for thousands of years and up into the late renaissance.



PLATED: Plated armor simply refers to various type of metal plates used to protect the body of the centuries. As early as the ancient Greeks, plated armor has been used. The Greeks used a combination of bronze plate to create a suit consisting of greaves, vambrace, cusraiis, etc. while the Romans had the lorica segmentata. Plated armor such as those mentioned were rarely worn with other armors.

PLATE, COAT OF: This armor is quite literally a coat of plates. Metal plates are sandwiched between two layers of cloth or leather and worn as a shirt or jacket. The plates were sewn or riveted to the underlying layer and slightly overlapped one another. The plates could be small or large, though for this discussion the plates are large. Generally, the coat of plates was used to augment chain armor. Rarely did the coat extend below the upper calves or the upper arms. This armor is much like a brigadine but the plates are larger and overlap. This is widely considered the precursor to plate and mail and full plate armor.

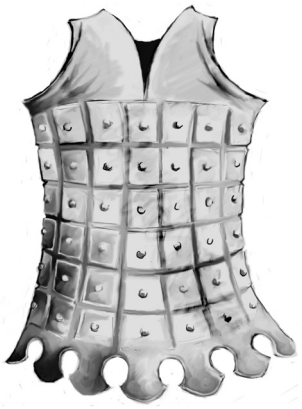
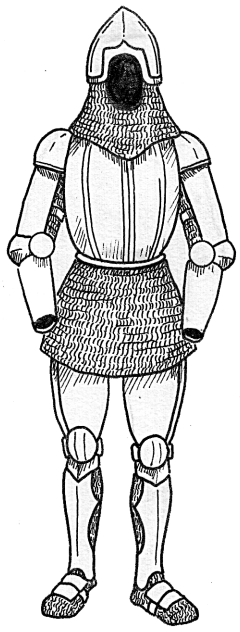


PLATE AND MAIL (LORICA HAMATE, JOSHAN, KALANTAR): This type of armor consists of metal plates stamped and formed to cover specific areas of the body. The plates were then connected by sections of mail. The plates would cover the more vulnerable portions of the body or those areas needing the most protection such as the chest, shoulder and back. The rest of the suit would consist of mail. Full suits of this armor were made with plates covering the forearms, upper arms, chest back and legs all connecting by large and small sections of mail. This armor is more restrictive than just mail but offers better protection. It was developed in Russia or the Middle East in the late Middle Ages and spread thence to the rest of Europe and Asia. It is useful against most forms of attack but lack durability since the plate connection to the mail is weak.



PLATE, FULL: This type of armor refers to the classic knightly ensemble of the later Middle Ages and early Renaissance. These suits of armor are intricately designed suits of iron and later steel plate. It would have covered the entire body in a metal casing from head to toe. Included in the suit are the helmet, curaiss, vambrase, fauld, tasset, etc. The armor is well articulated such that the person wearing it could easily move around and fight normally. Full plate armor offered significant protection from most weapons, especially if augmented by an aketon and gambeson. Plate armor would have come with many extra interchangeable parts depending on the needs of the person wearing it (mounted, afoot, weapons of choice, use

of a shield, etc all required differing configurations). The set is heavy, about 35 lbs, but its biggest drawback is that the wearer becomes very hot very quickly. It could take months to make a set of plate armor and was usually fitted to the person wearing it. The artisan would have to be highly skilled to produce a workable set of plate armor.

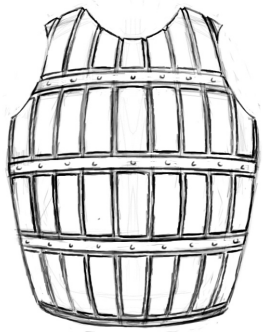
PLATE, GOTHIC (Polish Hussar): The armor represents, perhaps, the highest achievement of armor construction before the introduction of powdered weapons. Gothic armor is constructed as plate armor but with much more attention to detail and the development of fluting or ribbing. Gothic plate significantly increases joint articulation and adds more coverage to previously exposed areas of full plate armor. Fluting and ribbing of the plate also produced an armor that was much more efficient at deflecting the damage from blunt weapons and even piercing weapons. The plate is often highly decorated. It would have come with various attachments depending on the needs of the person wearing it. It is extremely costly and would have required a master armorer to construct. It weighed roughly 50 lbs but was so well designed that, other than its weight, it minimally affected mobility.

RING MAIL: This armor consists of a series of metal rings attached to a leather backed garment. The leather is usually a pliable jack that has been tanned and quilted. The rings are attached by sewing them into the leather. This armor is usually only a jacket covering the torso, upper legs and upper arms though it is possible to have an entire suit made of ring mail. Ring mail is fairly inexpensive and offers decent protection against slashing blows though little against thrusting weapons. It is a European armor of the late Renaissance.

SCALE ARMOR, LIGHT: Scale armor is a type of armor constructed of scales, laced together and to a backing then overlapping one another. This gives scale armor the scaly appearance. The backing material could be cloth, leather, canvas, or other suitable materials to which the scales could be attached. The scales could be made of many types of materials such as bone, wood, cuirbilli, thick cotton and even paper. The consistent overlapping of the scales is the important development in this armor and what provides its protective capacity. Scale armor is time consuming to make and, depending on the material used to construct the scales, it could be quite expensive. It also takes a skilled artisan to create. It was commonly used in Asia and the Middle East. This can be worn with an acetone.

SCALE MAIL, METAL: Scale armor is a type of armor constructed of scales, laced together and to a backing then overlapping one another. This gives scale armor the scaly appearance. The backing material could be cloth, leather, canvas, or other suitable materials to which the scales could be attached. The scales could be made of many types of materials such as steel, iron, bronze or other suitable materials. The consistent overlapping of the scales is the important development in this armor and what provides its protective capacity. It could be worn with an aketon. Scale armor is time consuming to make and, depending on the material used to construct the scales, it could be quite expensive. It also takes a skilled artisan to create. It was commonly used in Asia and the Middle East and Europe. This can be worn with an aketon.

SPLINT MAIL (plated mail): Splint mail is similar to plated mail. This armor consists of a series of metal splints or rectangular sections of metal woven together and overlapping one another. These are the attached to a chain shirt or hauberk. Splinted mail armor can be used to cover the whole body or just portions of it. It has also been used for barding. This armor is good at deflecting cutting blows and missile weapons. Splinted mail is usually made of iron, but bronze and steel could have been used. Splinted mail is time consuming to make and requires some degree of specialized training for the armorer and could be fairly expensive. This armor was common in Asia and the Near East.



SPLINTED LEATHER (plated leather): This armor consists of a series of metal splints or rectangular sections of metal woven together and attached to a leather, canvas, or padded backing. This armor can be used to cover sections of the body or a whole suit can be made of it. This armor type has been used for barding as well. It is designed to deflect cutting blows. It is not as efficient as splinted mail in effecting puncturing blow. This armor is moderately time consuming to make, not very expensive, and requires only moderate skill to make. This armor is common in Asia and the Near East.

GREEK ENSEMBLE: This is a suit of armor consisting of a breastplate, greaves, bracers, an armored skirt, and a corinthian or attic helmet. It was manufactured as a set. Early versions were of bronze, later versions were iron or steel.

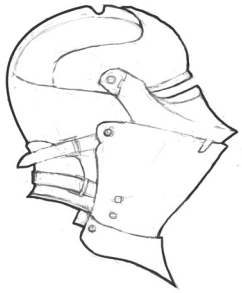
ROMAN ENSEMBLE: This is a suit of armor consisting of greaves, bracers, an attic or gallea helmet, an armored skirt and either scale (plumata) or banded (segmentata)body armor. It was manufactured as a set, and was the armor worn by the Roman army.

HELMETS

Leather or hide helmets offer some protection and have been used for thousands of years. At least 5,000 years ago, bronze helmets were being used. The variety of helms that developed over time is staggering. In sum, helms offer some protection for the head, cheeks, nose, and the back of the neck depending on the make.

Most helmets are designed to deflect blows in order to render them less effective. Much later, with the use of iron and steel, helmets were made thicker and were expected to absorb blows to a greater extent than they were previously. As a general rule, rounded helmets deflect incoming blows and the more square helmets absorb the blow. Most helmets, especially the large ones, are worn over hats or padding to help disperse the energy of a blow and make wearing the helm more comfortable.

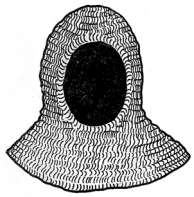
ARMET: A close fitting helm that covers the entire head. Two cheek guards connect at the front to forma a visor. There is often a piece with eye slots that drops down from the top of the helm to cover any remaining exposed portions of the face.



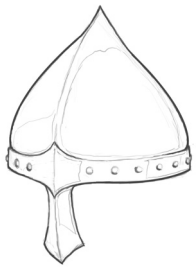
ARMING CAP: A round, leather, canvas, or metal hat that has padding on the interior. This hat is worn underneath a mail coif and most other metal helms.

ATTIC HELM: A close fitting bronze or iron helm. The helm is open faced but with an extended cheek guard that drops nearly to the front and back of the neck. This helmet was used by the ancient Greeks.

COIF, MAIL: A hood constructed of mail. This is separate from the other armor and could be worn under various helms.



CONICAL HELM (NORMAN): The conical helm is shaped like a cone and rises quite a distance above the head. It often has leather attached to the sides and back for added protection. Later a nose guard is added. Conical helms were favored in the ancient Near East and Persia.

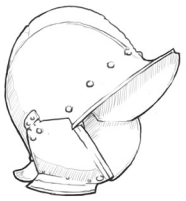


CORINTHIAN HELM: A close fitting bronze or iron helm. The helm has a 'T' or 'Y' shaped opening in front, a nose guard and an extended cheek guard that drops nearly to the neck and a metal extension in back to protect the back of the neck. This helmet was used by the ancient Greeks.

BARBUTTE: A close fitting, metal helm with a rectangular opening in the front and a 'Y' or 'T' shaped eye slot.

BASSINET: The early versions of the bassinet were similar to the arming cap and were worn underneath a great helm. As the bassinet developed, the structure changed and the rear and top thrust up like a cone and a cone shaped visor was placed in front.

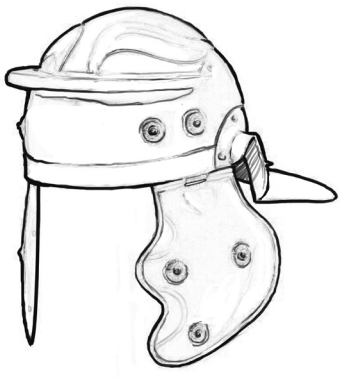
BURGONET (CASQUETEL): A metal helm with a brim covering the eyes and cheek guards that open and close.



CLOSE HELM: A tight fitting helm that extends over the cheeks and across the back of the neck. The helm sweeps out in the back to protect the neck. A visor can be dropped to protect the face.

DOG-FACED BASSINET: Much like the bassinet, except the visor is long and beak shaped, or shaped like a hound's snout.

GALEA (GALLIC HELM): An iron helmet with a neck guard attached to its rear. The bottom of the neck guard sweeps out and away from the upper back. Iron cheek guards are attached to the front. This is a typical Imperial period Roman helm. It could be elaborately decorated to show rank.

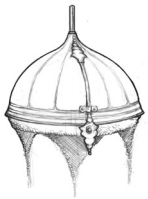


GREAT HELM (HUME, HEUME): A large cylindrical, metal helmet. There is an eye slot across the front of the helm. The bottom of the helm's front dips down to protect the neck and chin. This helm is often worn over a pot-helm.

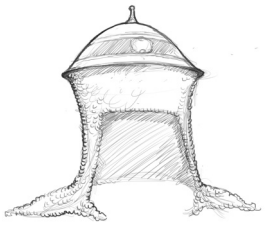
KABUTO: This style of helmet is found in Asia and was made famous by the samurai. It consists of a metal pot-helm with a brim over the eyes. The back of the helm has a pronounced outward curving series of metal straps woven or riveted together to protect the back of the neck.

KETTLE HAT: A metal pot-helm with a large brim running around the side. The brim droops down and offers protection from blows delivered from above.

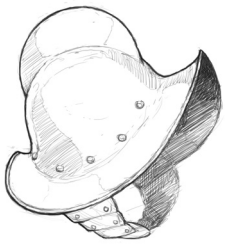
KULAH KHUD: A pot helm with mail hanging down the sides and back. There is a prominent spike on top of the helm.



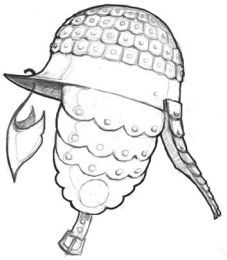
MISIURKA: This helmet has a small round head plate from which a mail skirt hangs. The mail skirt covers the ears, cheeks and the back of the neck, usually extending to the shoulder area. The mail is often replaced with interlaced metal strips.



MORION HELM: This helm has a high comb running from front to back. A brim around the helm sweeps up in the front and back and down the sides. This helm was made famous by the Spanish conquistadores.

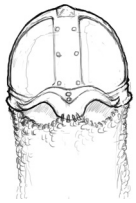


POLISH HUSSAR: A round metal helm with a brim over the eyes. There is also a hinged face plate that can be lowered for battle. Bands of metal strips are woven together and attached to the sides and the back for ear and neck protection.

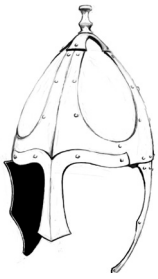


POT-HELM: A small metal, pot shaped helm.

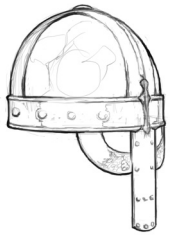
SASSANIAN: A conical shaped helmet. Mail is attached to the base of the helmet and hangs down on all sides reaching the shoulders, upper back and front of the neck. There is an opening for the face.



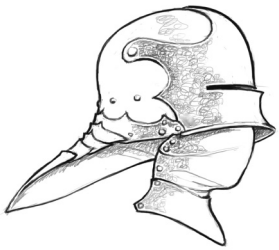
SPANGENHELM: A small round, metal pot-helm with a lame dropping from the comb and stretching over the nose. This helm is typical of the type Vikings wore.



VALSGARDE HELM: A small, metal pot-helm with the addition of metal or leather straps attached to the back. The front has a face guard covering the nose, cheeks and chin. The faceguard presents a frightening visage.

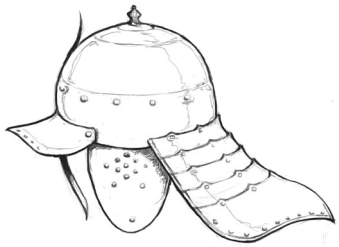


SALLET: A large, though close fitting, metal helm with an eye slot. The lower portion extends to just above the mouth and sweeps back and down over the ears and lower neck.



WAR HAT: A small metal, pot-helm that extends down over the nose. The helm has a wide brim drooping down over the upper face. There are eye slots in the brim.

ZISCHAGGE: A round helm with a brim over the eyes and a nose guard extending down from the helm. The neck and cheeks are protected by a series of interwoven metal strips hanging down from the helms sides and back.



SHIELDS

The shield is likely one of the oldest pieces of armor known and dates well into antiquity. It is likely shields were in use tens of thousands of years ago. It functions to ward of blows from hurled weapon, bows, and hand held weapons. This is managed primarily by deflecting the blow but they are also designed to absorb impact.

The earliest shields are constructed of hide, wood, leather, wicker, bone, horn, or any readily available material and were usually round, rectangular, or ovoid. As technology progressed, shields incorporated bronze and then iron into their construction. Shields were designed for specific purposes and reflected the fighting styles and needs of the time and place they were used. They come in a wide variety of shapes and size from small hand-held round shields to very large rectangular or coffin shaped shields. There are oval, oblong, bilobial, scalloped, square, crescent, and round shields as well as many other shapes.

As a very general rule, larger shields were preferred in large scale battle formations and smaller shields were preferred in individual combat. One notes that the Romans used the scutum, the Greeks used to Aspis, and the Normans used the kite shield in combat formations - and to great effect. In jousting and individual combat, smaller shields tended to be favored. This is, perhaps, because the full effect of the protective value of large shields is in conjunction with other large shields. Larger shields also reduce the mobility of an individual and, perhaps, their capacity to maneuver well in individual combat. Smaller shields would not offer the same advantages as larger shields in massed combat (ie protecting one's companion) but do offer advantages of maneuver in individual combat. Medium sized shields, such as those used by the Vikings would offer some of the advantages of both which is, perhaps, why it is the most common sized shield. But in all cases, the shield would have reflected local fighting styles and weapons use, whether large or small.

Shields suffer the brunt of many blows from weapons in combat. They are made to be durable but could have been rendered useless after repeated blows. Wooden shields would suffer splitting and cracking with a well landed blow. Strengthening the shield with metal rims and a metal front increased the durability of shields but their weight would increase dramatically as well. The heavier the shield, the more unwieldy it becomes. This is a trade-off in design and use.

Shield Morphology

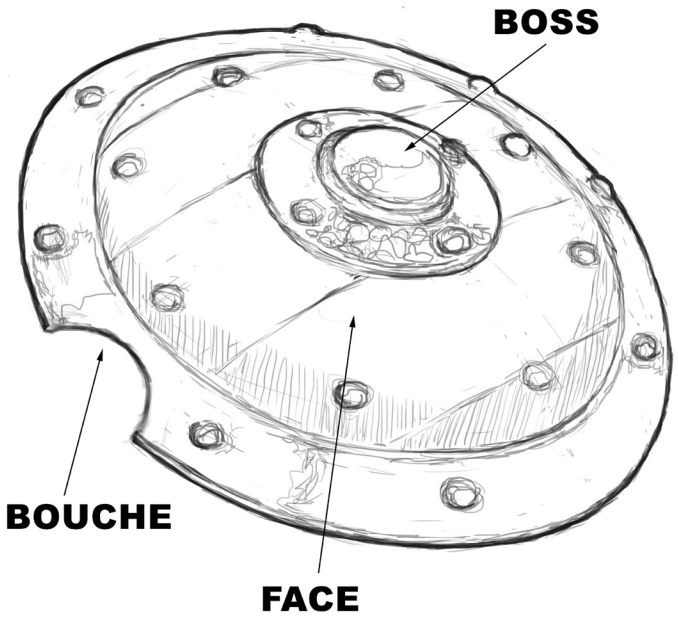
Boss (umbo): A raised metal addition to the central portion of a shield. Typically it is a half sphere but could be any shape. The boss served to strengthen the shield and could be used offensively as well. The boss has had, on occasion, a small spike added to it and, described below, a pistol place in it.

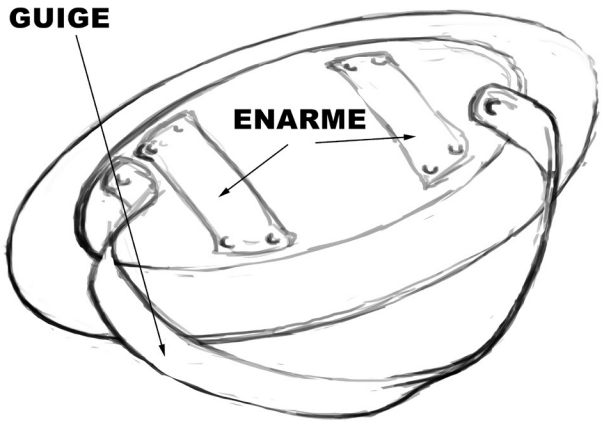
Bouche: A notch in the shield to rest a lance or a pike.

Face: The front of the shield.

Enarme: This refers to the straps or wooden handles in the middle of the shield. This is where the wearer grasps and holds the shield either on the arm or with the hand. The enarmes could be placed centrally or to the side depending on the design and intent of the shield.

Guige: A large strap on the inside of the shield allowing the wearer to hold the shield on the shoulder. This is usually just found on larger shields. Although the guige is often used to make transport of the shield easier, it could also be placed such that it helps distribute the weight when worn in battle.





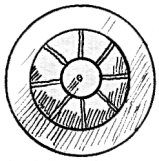
SHIELD TYPES

There are two lists below. The first list gives names and description of various shields found historically. It is not exhaustive but meant to give a sampling of shields and their uses for the reader. The second list describes shields by shape. As a general rule, almost all shields found historically can be placed in one of those shape categories.

SHIELDS BY TYPE

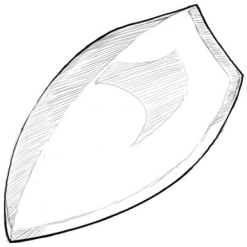
ADARGA: A large, tear shaped shield, usually 30" in diameter and weighed about 7 lbs. The shield is constructed of several layers of antelope hide giving it a rigid elasticity and was primarily used by light cavalry. The shield originated in Moorish Spain. The shield evolved over time into overlapping ellipses.

ASPIS (HOPLON): A large round shield constructed of a hardwood backing with the face and rim covered in bronze. The shield is held on the arm. The unique aspect of the handle is that it is close to the rim of the shield and the elbow rested towards the middle. This allowed great mobility and functionality within a phalanx formation. The shield is about 36" in diameter and weighed roughly 15 lbs.

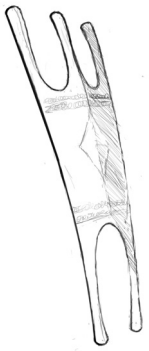


BUCKLER: A very common shield used throughout the Middle Ages and Renaissance. Typically, the buckler measures around 10"-15" in diameter, is slightly bowl shaped or flat and held by the fist behind the boss. It is designed for defense against sword and mace but, being so small, has little added value in deflecting arrows or missile weapons. It can be made of metal or wood. The buckler could be used offensively as a punching weapon and can be fixed with a spike, serrated edges, a hook to carry a lantern, and even a matchlock pistol in the boss. It is truly a versatile armament.

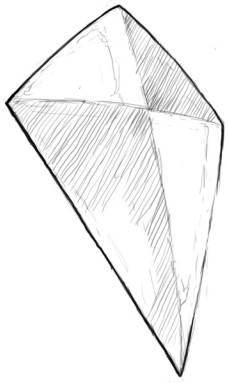
DIPYLON: A figure 8 shaped shield used by the Mycenaeans. The shield is constructed of several layers of wood that are faced with leather. It averages about 40" in height and at the wide edges, about 18" in length. The shield could weigh up to 20 lbs or more. The shield is carried on the arm and had a shoulder strap for extra support. The dipylon allowed for an efficient use of spear thrusts in combat and maneuverability with the sword.



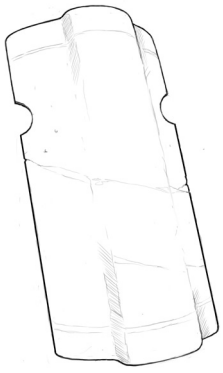
HEATER SHIELD: This shield is shaped like the flat of an iron. It is about 24" wide at the top and 27" long at the bottom point. It is constructed of a light weight, though durable, wood and covered with canvas or leather. It is held on the arm and is light an easy to maneuver.



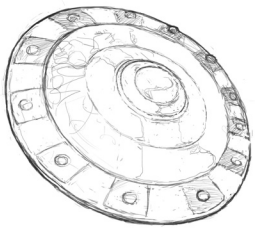
KALASAG: This shield is constructed of soft woods and rattan, strengthened with resin. The shield has three prongs on the top and two at the bottom. The hand grip is only large enough for the three middle fingers with the thumb and pinky used to tilt the shield against incoming arrows or spears. It measures about 42" in height and 15" wide. The shield's primary function is to deflect spears and arrows and is not considered useful in melee as it can be easily pierced.



KITE SHIELD (Norman Shield, Byzantine almond shaped): A tear drop shaped shield with the narrow end pointing down. The shield is constructed of a light weight, yet stout, wood. It was covered in thick leather or canvas (which is often painted or decorated). The shield is believed to have a metal rim, but has a thickened leather rim at the very least. This shield can have a metal boss as well and can be slightly curved or flat. The shield is designed to be held on the arm and not with the hand, though this could have changed depending on the shield's use at the time. The shield appears to have been designed for use from horseback to protect one flank of the rider. However, its use on the ground is also noted and could be used to protect a projected foreleg. The shield averages 48" in length and is about 16" across the top.

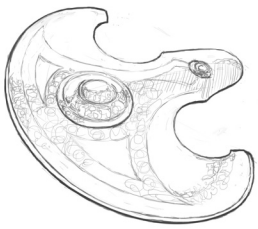


PAVISE: A very large shield ranging from 48" - 60" feet in height and up to 24" in width. The pavise is constructed of thick wood with a leather facing. The top of the pavise is rounded or has a towing central span. This shield was generally carried by crossbowmen and bowmen and set upright as protection. The pavise has a groove on the back to place a support on and can have a viewing grill attached to the top and spikes on the bottom edge to ensure stability. The pavise weighs so much and is so large that carrying it in combat is impossible. It needs to be placed on the ground and stood upright to be used and can be moved forward incrementally. The shield is generally carried on the back.

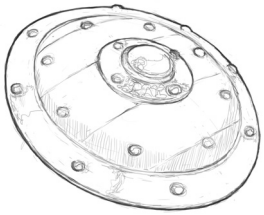


PARMA: A large, round shield constructed of plywood with an iron rim. The shield measured 36" in diameter and weighed about 18 lbs. It has a prominent boss of iron. The shield is used in the early Roman Republic and later by light troops.

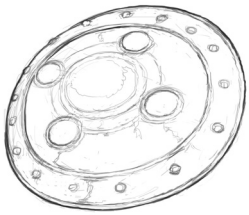
PELTA: A small, half-moon or crescent shaped shield constructed of a wicker backing and covered with leather. The pelta would have offered some deflective value and light protection against missile weapons. It averaged about 24" in diameter.



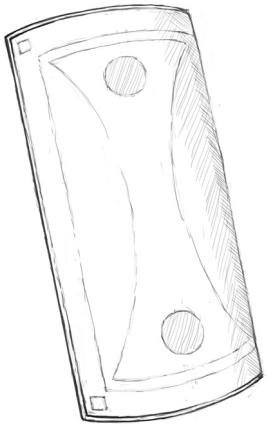
TARGE: A medium sized, round, concave shield found throughout northern Europe in the Middle Ages. It is constructed of wood planks covered with rawhide. The face is often strengthened with metal rivets, brass plates or other material. It is designed to be held by the arm or fist and measures about 18" in diameter.



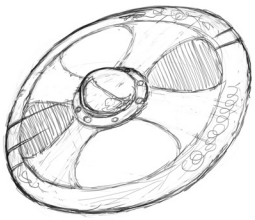
TARGET (ROTELLA): A medium sized, round shield constructed of iron. It is concave and held on the arm. The shield measures about 24" in diameter and weighs about 13 lbs. The rotella is a favored dueling shield but is equally useful in mass combat.



TOWER SHIELD: A generic shield type and covers a wide variety of shields found from Asia to Europe. The prominent aspect of a tower shield is that it covers the wearer from neck to shin and can be up to 18" wide. These shields, in order to be carried and used with some efficiency, are often made of light weight woods, such as wicker or even sticks laced together. This backing is then covered with a leather face. The weight of a tower shield could range up to 15 lbs but is often less. The shield could be rectangular, oval or coffin shaped and is often flat-faced or slightly concave.



VIKING SHIELD (ROUND SHIELD): A round shield constructed of linden, fir, or ash. They were less likely to split and could bind weapons thrust into them or striking the edge if constructed of these materials. The front may or may not have been covered in leather. There is a central metal boss about 6" in diameter in its center. The rim of the shield had a leather or metal band wrapped around it. The shield is made to be held by the fist behind the boss and could weigh up to 15 lbs or more depending on the material used for construction. The Viking shield averaged 36" in diameter.



SHIELDS BY SHAPES AND SIZES

The shapes of shields varied widely in space of time. Even within a single army, the shapes of shields vary widely depending upon the type of troops deployed. For example, a typical roman legion could have troops equipped with a pugnum, scutum, and cetratus just to name a few. The shapes described below could come in varying sizes, but the most common size is listed, if known.

GOTHIC OR COFFIN: There is little evidence for a true coffin shaped shield, though the gothic shield is historically represented. This type refers to a generally rectangular shield with a bottom and top that is narrower than the center width of the shield. These shield shapes saw wide use and were often medium sized or larger. The intent of the design is to reduce the weight of the shield while still offering protection for the legs and easier viewing over or around the top. These shields are typically made of wood with a hide covering and often had a central boss.

ROUND: This may be the most common shield shape. Round shields may be small, medium or large, flat, convex, and, occasionally, slightly concave. Medium and larger shields are typically constructed of wood while smaller shields might be made entirely of metal. They can be held on the fist or the arm with the center of weight toward an edge. Round shields are occasionally covered in plates of metal or may even have a central boss but more often were covered in tanned leather or hide.

BILOBIAL OR FIGURE EIGHT SHIELD: These shields are typically medium sized or larger. They are rare and reflect a highly specific fighting style. These shields are almost exclusively constructed of wood backing with a leather covering. Some have brass or metal plates sewn onto the leather or hide or even directly over the wood. These may be either flat or slightly convex.

RECTANGULAR: Rectangular shields are arguably as common, if not more so, than round shields. They can range in size from small to large. Smaller shields might be made entirely of metal, while the medium sized and larger shields are typically constructed of wood with a hide covering. These shields may be augmented with a central boss, metal overlays, or plate overlays. Large, rectangular shields are often found with large ground troop formations. They are rarely used by cavalry, and then only the smaller shields are used.

TEAR DROP: The tear drop shaped shield predominated in Europe in the Middle Ages, though variations were found elsewhere. These are typically medium sized shields with a slightly rounded top and sides that droop down to a point. They are typically constructed of wood with a leather facing, though metal is also common. They are designed to be held on the arm are most often associated with mounted warriors, though foot soldiers are known to carry them.

OVAL: The oval shield can be found worldwide, but mostly in the less technologically developed civilizations as it favors available material and construction techniques. Oval shields may be made of any material but are almost always wood framed with one or more layers of hide providing the protection.

WEAPONS

Like armor, weapons have been a part of the human experience for countless centuries. They are used for hunting, extending territories, dominations and defense against all the above. They have evolved from the simple club and spear to the very complex, finely crafted sword and pole arm.

The number and type of weapons is almost beyond measure. Societies developed weapons based on their own needs, environments, social structures, and resources available. Changes were introduced depending on where any individual society existed, who their neighbors were and what manner of interaction the two, three or a dozen cultures had. It's a tool and as with any tool, it changes with need, it evolves whether to defend or attack. Weapons often evolved in tandem with armor and shields and tactics on the battlefield. The stirrup changed the method of battle, allowing greater force to the horsemen, which spurred an entire industry of weapons to combat the heavy, mounted knight.

Weapons have a both offensive and defensive nature and a great deal of skill is frequently required, particularly for those complex weapons designed for a specific purpose. Unlike armor, which is largely a passive defense, weapons offer an active defense, whether blocking a blow, disarming, or disabling an opponent.

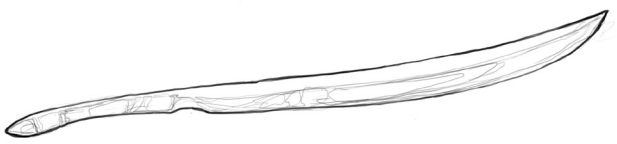
Below are a variety of weapons and weapon types. Though not an exhaustive list, it touches upon the vast array of weapons available to combatants of the period.

CLUB TO MACE

The club is one of the most basic and simple weapons available. Clubs can be simple pieces of wood to elaborate maces used to strike opponents. Clubs primarily cause bludgeoning damage through blunt force impact. They are not designed to cut or slash. However some club designs enable cutting and a well landed blow can cause skin the rip apart. Clubs range in size and shape. The can be small foot long shafts of wood and up to 5' in length. They can be knobby, smooth, balled at the end or elaborately carved. They can also be constructed entirely, or partially, of metal.

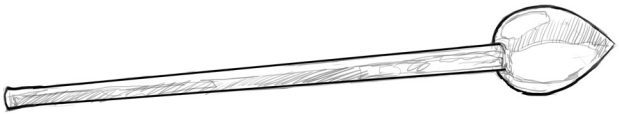
BACULUS: This is a short staff made of hardwoods with a knobby head. It is designed to cause concussive damage and is very cheap. They are about 2' long and weigh about 1.4lbs.

BAGGORO: This is a piece of flattened wood with a handle. It appears as a wooden sword. The edge is sometimes ground sharp. It is about 2' long and weighs approximately 4lbs. This weapon originated in Australia.



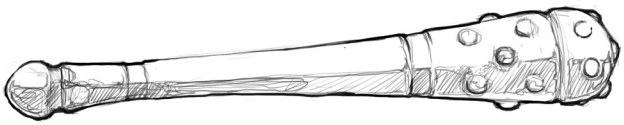
BASTON (YANTOK): This is a 25" inch long rattan shaft used for combat in a Filipino fighting style known as Arnis. The rattan is durable and hard, capable of dealing significant damage and even deflecting sword blows. It usually weighs about 1 pound.

BUDD (TONGA): This club has a rounded knob at the end with sharpened edges on it. It is often thrown at an enemy before entering combat. It is about 16" long and weighs about 1.1 lb. This weapon is of East African origin.



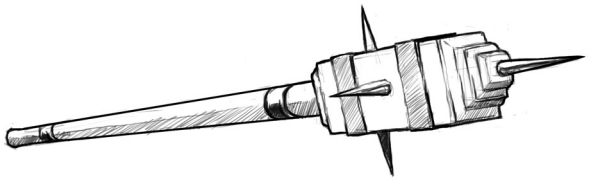
CLUB: A piece of wood about 3' long hardened in fire or with resin. It is used to beat people. It has been used since tools were first made and can be found throughout the world in various forms.

CUDGEL (KNOBKERRIE-AFRICA, KUJERONG-AUSTRALIA): A stout length of wood, usually very straight with one large knob on the end. It works as a walking stick as well as a weapon. They are about 4' in length and weigh about 1.6lbs.



GATA: A war club from Fiji. The club is about 2' in length and weighs roughly 3lbs. It is constructed of various hardwoods or the heartwood of palms. The top is slightly curved and enlarged with a spur on it. These were known to cause great damage and break bones.

GODENTAG (CC): A large, octagonal club. Running 2/3 length down from the tip of the club along each flat portion, are a series of spikes interspersed with long, sharp blades. These are attached as separate rings. The godentag is difficult to wield as it is very heavy. It is approximately 5' long and weighs nearly 10lbs.



GOEDENDAG (PLANCON A PICOT): This weapon is essentially a short spear and club combined. It consists of a 5' long wooden

pole, broadening at the end where a metal spike is attached and is used as a brace for cavalry charges, and thence as a club. It is nearly 6' in overall length and weighs approximately 5lbs.

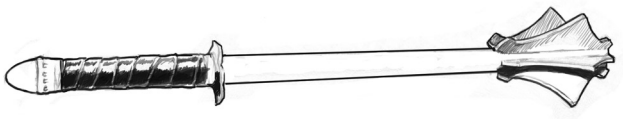
JITTE (Jutte): This weapon is essentially an 18" iron rod with a single hook extending from where the handle ends. The hook extends 1/3 up the length of the shaft. The weapon is designed for defense against swords and for subduing an opponent without drastically harming them. The hooked portion would capture and even snap blades. It weighs roughly 3lbs.

MACE, FOOT ROUND: A simple weapon consisting of a short handle made of wood or iron with a round metal ball attached to the top. It is designed for use against armored opponents to deliver concussive damage. It is about 30" long and weighed approximately 2lbs.

MACE, FOOT FLANGED (pernach): A simple weapon consisting of a short handle made of wood or iron with a round metal ball with numerous flanges attached to it at the top. It is designed for use against armored opponents to deliver concussive damage. It is about 30" long and weighs approximately 2.2lbs.

MACE, LARGE ROUND: A simple weapon consisting of a short handle made of wood or iron with a round metal ball attached to the top. The large mace is designed to be used from horseback against armored opponents to deliver concussive damage. It is about 4' long and weighs approximately 3lbs.

MACE, LARGE FLANGED: A simple weapon consisting of a short handle made of wood or iron with a round metal ball with numerous flanges attached to it at the top. It is designed for use against armored opponents to deliver concussive damage. It is about 4' long and weighs approximately 3.5lbs.



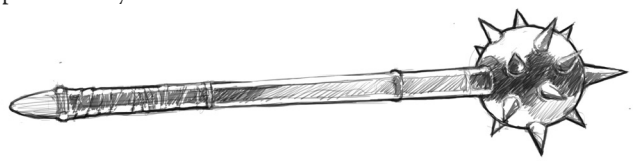
MACE, HEAVY ROUND: A simple weapon consisting of a short handle made of wood or iron with a round metal ball attached to the top. It can only be used two handed and it is designed for use against armored opponents to deliver concussive damage. It is about 5 feet long and weighs approximately 5lbs.

MACE, HEAVY FLANGED: A simple weapon consisting of a short handle made of wood or iron with a round metal ball with numerous flanges attached to it at the top. It is designed for use against armored opponents to deliver concussive damage. It is about 5' long and weighs approximately 5.5lbs.

MAUL, BATTLE: The maul is essentially a giant two headed hammer, much like a sledge hammer, but heavier. The battle maul is about 5' long with a large 15lb, double headed hammer attached to the top. This is an unwieldy weapon in battle as it is heavy, poorly balanced, and takes great endurance and strength to wield for a long period of time. It can, however, deal a staggering amount of concussive damage.

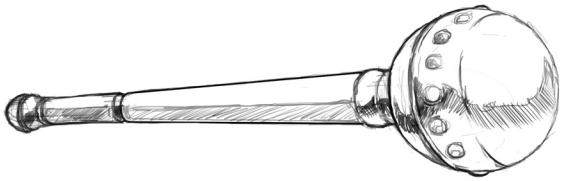
MORNINGSTAR LIGHT: A weapon consisting of a 2' haft with a multi-spiked attachment ringing the top of the haft. It is designed to penetrate armor and deal concussive and puncture damage. It weighs approximately 2lbs.

MORNINGSTAR MEDIUM: A weapon consisting of a 4' haft with a multi spiked attachment ringing the top of the haft. The weapon is designed to penetrate armor, deal concussive and puncture damage, and be used from horseback. It weighs approximately 3.5lbs.



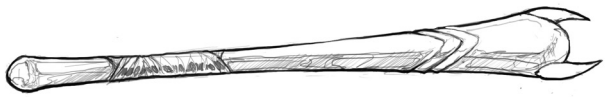
MORNINGSTAR HEAVY (holy water sprinkler): A weapon consisting of a 5' haft with a multi spiked attachment ringing the top of the haft. The weapon is designed to penetrate armor and deal concussive and puncture damage. It must be used with both hands due to its weight and length. It weighs approximately 4lbs.

MUGDAR: This massive club consists of a 2.5' long shaft with a large, round, wooden top. The head is often weighted with lead. They may weigh upwards of 18lbs. This club is usually used for training purposes but rarely on the battlefield.

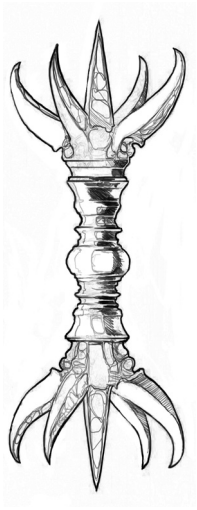


STAFF (quarterstaff, bo): This venerable weapon is simply a 5-7' long pole made of dense, hardwood core material. Lengths vary depending on preference. It is designed for fighting, and a fighting style was derived from its use. It weighs about 2lbs.

TAMABARA: This club consists of a wooden shaft and with a slightly enlarged head with two prongs. The weapon may be used for bludgeoning damage as well as for shallow stabs. It is about 24" in length and weighs about 18oz.

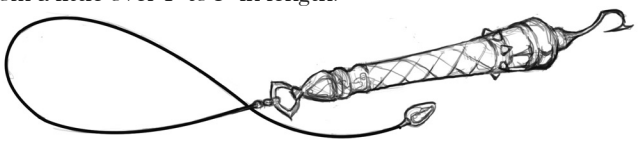


VAJRA: A small club, usually made entirely of metal. There are two heads to the club, each with a ribbing or sharpened ribbing for each head. The club is held in the center so that both ends may be used. Other than religious significance, the vajra is used to deal concussive damage in close melee. It is about 2' long and weighs approximately 2.2lbs.



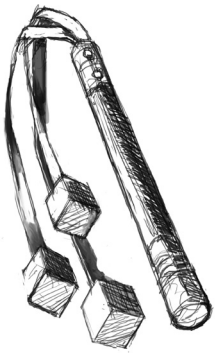
FLAILS OR FLAIL TYPE WEAPONS

Flails are similar to clubs in that they are used deliver concussive damage. For our purposes, however,, they are typified by having a striking platform attached to a handle by leather, cord, or chain. The striking platform, whether it be a ball, spiked shaft or piece of wood hangs loosely from the shaft. This type of weapon includes flails, ball and chain, nunchaku and other similar weapons. Flails could range in size from a little over 1' to 5' in length.

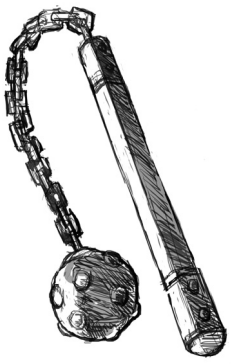


AKLYS: A short club with several spikes attached to it. The club had a leather or rope thong attached so that it could be thrown and then retrieved. The club weighed about 1.5lbs and was 8" in length. The thong could be up to 25' in length.

FLAILS (Light wood): A weapon derived from agricultural use. It consists of a wooden shaft to which a wooden striking head is attached by chains, rope or leather and may have spikes added to the striking platform. It weighs approximately 1.8lbs and is 4' long, 2' of which encompass the chain and striking platform. It causes concussive damage.

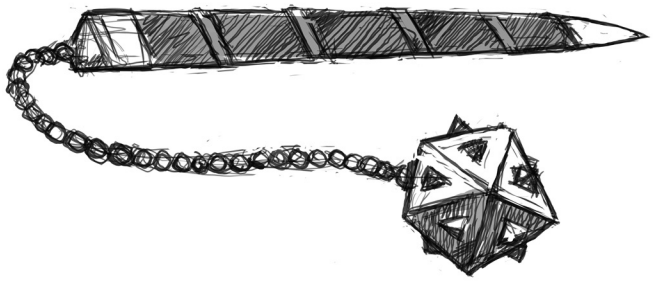


FLAIL (Heavy wood): This flail consists of a wooden shaft to which a wooden striking head is attached by chains, rope or leather and may have spikes added to the striking platform. It weighs approximately 3lbs and is 6' long, 2' of which encompass the chain and striking platform. This can only be used effectively with both hands and is used to deal concussive damage.



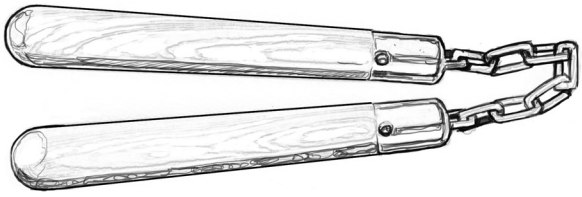
FLAILS (Light metal): The head of this flail is usually a sphere or tetrahedron and spikes may be added to the head. It weighs approximately 2.8lbs and is 4' long, 2' of which encompass the chain and striking platform. It is used to deal concussive damage.

FLAIL (Heavy metal): This flail consists of a wooden shaft to which a metal striking head is attached by chains, rope or leather. The head is usually a sphere or tetrahedron and may have spikes added to the sphere. It weighs approximately 4lbs and is 6' long, 2' of which encompass the chain and striking platform. It can only be used effectively with both hands and is used to deal concussive damage.



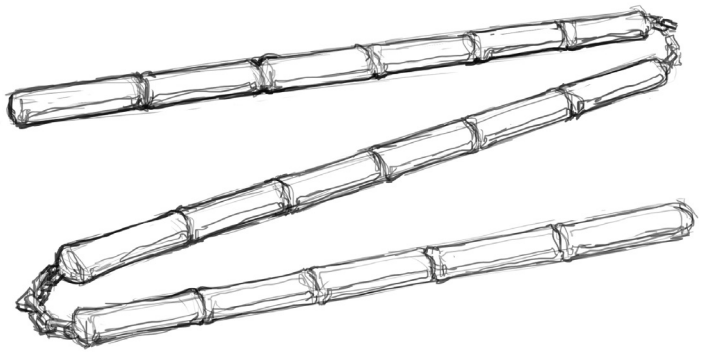
FLAIL, MILITARY: The military flail comprises each of the flail types listed above but have 2-3 striking platforms in lieu of one. Military flails are more difficult to use than regular flails due to their multiple striking platforms. They weigh a bit more than a standard flail; about .75lbs heavier, per striking platform.

NUNCHAKU: Consists of two lengths of hardwood or metal connected by a chain, rope, or leather. The nunchaku is used for quick concussive strikes and can be used to reach behind a shield. Each section averages about 10" in length, with the connector being about 4" long. They weigh about 1.5lbs.



TABAK TOJOK: Consists of two short lengths of wood attached to one another by a rope or chain. The lengths of wood are about 8" long, and the connection is about 8" in length. These weapons are used in close quarters combat and weigh about 1lb.

THREE SECTION STAFF (sansetsukon, snajiegun): This weapon consists of three short staffs attached to one another, end to end, by a chain, rope or leather strap. The three sectional staff is used, in many respects, like a flail, but with two ends. It takes much time to master. The three sectional staff can be used to strike around shields. Each length of the staff is about 24" in length, and the entire weapon weighs about 1.5lbs.

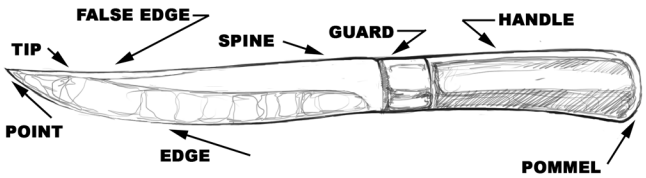


KNIVES

Although it seems a simple weapon, the knife can be fairly complex in use and design. Essentially, and for this discussion, a knife is a single edged bladed weapon 20", or less, in length. It is held with a handle and is used primarily for slashing and thrusting attacks. The design dictates its primary use. They are also designed as off-hand weapon used for parrying or deflecting blows.

Knives have been in existence for thousands of years. The first knives were made of stone and even wood. Later, as metallurgy developed, they were made of brass, iron, and steel. Knives vary in width from an inch or less wide to several inches wide. They could be straight, slightly curved or sharply curved. The cutting edge is could be on either side of the blade. As with any weapons, the design of any knife is usually dictated by its purpose.

Knife Morphology



Handle: This is where the blade is attached and the knife is held. It is usually made of wood and is either smooth or carved with one or more grips.

Edge: This is the sharpened edge of the knife.

Tip: This is the curved or tapered section of the blade before it reaches the poin.

Point: This is the end of the knife and is usually sharpened for thrusting.

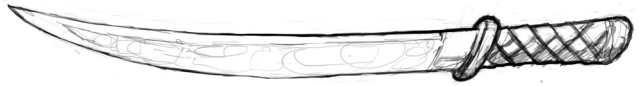
Guard (bolster): This is similar to a sword's quillon. It has a flange between the blade and handle that prevents the hand from slipping up the blade and protects the hand. Not all knives have a guard.

False Edge (swage): The end of the blade on the reverse of the edge which can be sharpened. If at all, this section covers no more than 1/3 the length of the blade.

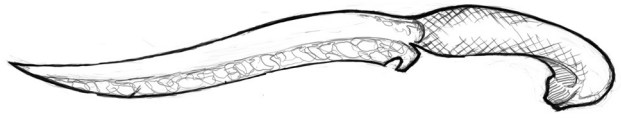
Spine: This is the reverse of the edged side of the blade. It is usually the thickest part of the blade and is often flat.

Pommel: This is the base of the handle. The pommel can be smooth or have slight tapers or bulges to aid in gripping the knife.

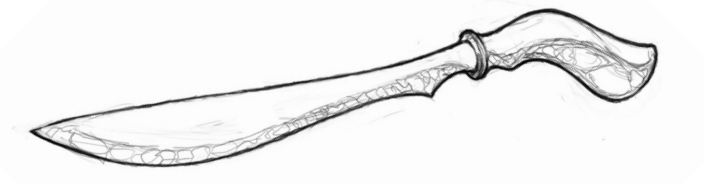
AIKUCHI: Has a single edge that is slightly curved and has no guard. It is roughly 12" in length and weighs around 12oz. The handle is about 5" long and has no cross-guard. It is primarily a slashing weapon.



BADA BADE KNIFE: This is a single edged, slightly curved knife with little or no guard and a handle angled up to 45°. The knife weighs about 10oz and is roughly 10" in length. It is used primarily for cutting and chopping.

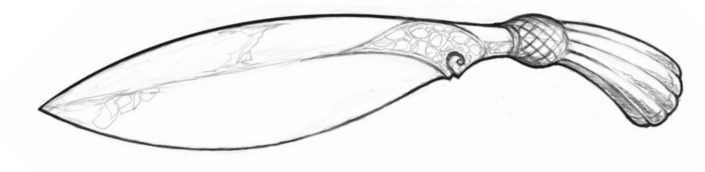


BADIK KNIFE: Has a single edge that can be either straight or slightly curved at the end. It is distinctive for its pistol grip handle. The badik weighs about 12oz and is roughly 11" long. It is used primarily in slashing and chopping motions.



BALISONG (butterfly knife): A straight bladed, single edged knife tapering to a point with a false edge. It is unique in that the blade can be hidden inside two counter rotating handles and be easily and quickly whipped out. It is around 8" long and weighs about 12oz. Although primarily a utility knife, it can be used for fighting and is easily concealed.

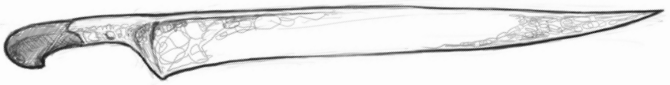
BARONG: A broad, leaf shaped, single edged, knife with a slight curve at the tip. The handle has a small guard and is curved. It weighs roughly 1lb 6oz and is around 18" in length. It is primarily used in chopping and slashing motions.



BICHAQ: This is a single edged, broad and straight bladed knife with no cross-guard. The blade sometimes has a slight reverse and, occasionally, a forward curve. It measures roughly 10" in length and weighs approximately 14oz. The weapon is designed for cutting and thrusting motions.

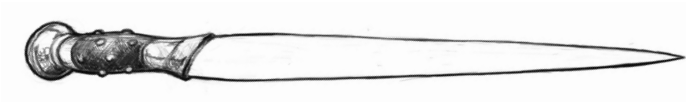
BOLO: A large, single edged knife with a wide base that tapers to a point. The blade is often curved. It has no crossguard. The knife is upwards of 18" inches in length and weighs around 1lbs 3oz. It is primarily a chopping tool for clearing vegetation but can also be used effectively as a weapon.

CHOORA (pesh-katz): A straight bladed, single edged knife. The blade has a strong, thick back with a pronounced 't' cross-section. The cutting edge angles to a reinforced point. There is a crossguard on the lower side of the knife. It is designed for penetrating mail or similar armor. It is about 10" long and weighs roughly 10oz.



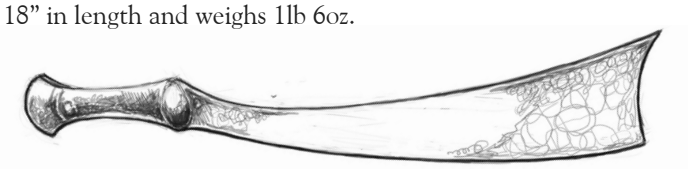
DACIAN FALX: A short, single edged, wide bladed, heavy knife with a pronounced inward curve. The belly of the blade is sharpened and is designed for use with one or two hands. It is more effective when used with both hands (there is an exclusive two handed version under polearms). It measures about 17" in length and weighs around 1lb 10z.

DIRK: A single edged straight bladed knife with a small crossguard. It weighs about 1lb and is around 1' long.



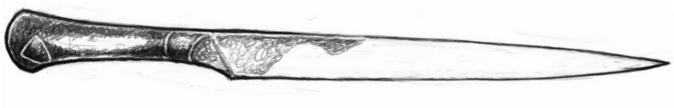
DHA MONTAGNARD: A single edged, heavy knife with a gently curved blade. Towards the tip, the blade widens significantly. The handle may extend up to half the length of the weapon and has a small disc guard. It is designed primarily for chopping and slashing. It measures about 17" in length and weighs roughly 1lb 5oz.

DHA NAGA: A single edged, heavy knife with a slightly curved blade which is beveled at the tip. It has a round 'extra' grip which acts as a barely discernible guard. The blade was primarily designed for slashing and cutting. It measures around 18" in length and weighs 1lb 6oz.

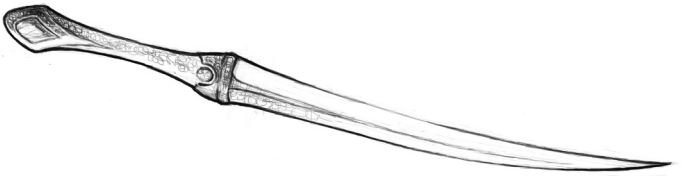


FLATCHET: A single edged, heavy, straight bladed knife with a broad blade beveled at the tip and little or no crossguard. It is designed for chopping and cutting motions. The knife is roughly 16" long and weighs approximately 1lb 6oz.

KARD: A single edged, broad, straight bladed knife with no crossguard. The tip of the knife is reinforced to allow for greater penetration of armor. The knife is roughly 9" long and weighs about 12oz.

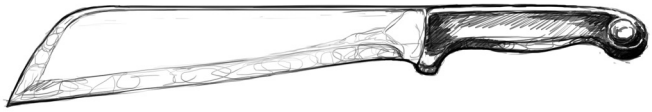


KINJAL: This is a heavy, single edged knife with a straight blade. The sharpened side of the blade is notched at the end to form a point. It has a fuller running its length and no crossguard. The kinjal is about 1lb 1oz in weight and 19" long.



KUKRI (GHURKA KNIFE): A broad bladed, single edged knife curves inward halfway the length of the blade, and the edge is on the belly. The handle has no crossguard. On the scabbard of the knife are two small knives used to maintain the weapon. The kukri is a utility knife (similar to a machete) as well as a formidable weapon. It ranges up to 19" in length and weighs 1lb 5oz.

GOLOK (GULAK, BEDOG): A single edged, straight bladed weapon similar to a machete. It has no crossguard. It is primarily used as a chopping and slashing weapon. It ranges about 14" in length and weighs about 1lb.

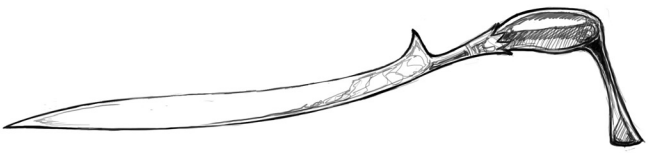


NAVAJA (LAGUIOLE): A folding knife with a slightly curved or leaf shaped blade, single edged with a deep false edge creating a fine point with slight upward curve. The widest portion of the blade is towards the tip. This is primarily a utility knife but is easily concealed and can be used for fighting. It is approximately 5" long (10" extended) and weighs about 5oz.

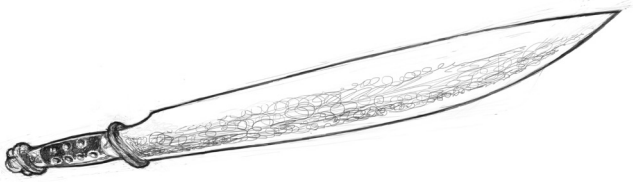
NAVAJA (SEVILLANA): A folding knife as the navaja with similar design characteristics but designed for fighting. It uses a higher quality steel and has a strong locking mechanism to keep the blade in place once unfolded. The blade is slightly curved or leaf shaped and has a deep, false edge and narrows towards the tip. It is designed for slashing and thrusting attacks. These blades are approximately 8" long and weigh about 10z.

RAMPURI CHAKU: A single edged, straight bladed gravity or folding knife. The blade tapers or curves slightly to a point often with a false edge. It measures roughly 9" in length and weighs around 10oz. It is designed to be easily concealed and used for thrusting and slashing motions.

RENTJANG: A straight (sometimes wavy) bladed, single edge knife. The blade of the rentjang expands slightly before tapering to a point. The hand is pistol grip shaped with the grip facing away from the blade. The knife is approximately 15oz in weight and 15" long.

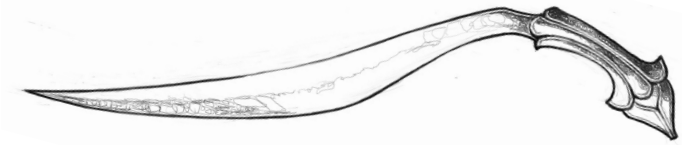


SEAX (Sax, Viking knife): A single edged, heavy knife. It is simple in design, being straight bladed before narrowing and curving slightly to a point at the end and a clipped spine. The blade is wide and the back is thick. The handle has no crossguard and is designed for thrusting, chopping and slashing. The blade averages 13" in length and weighs about 15oz.



SEAX, LONG: The longseax is a single edged, heavy knife. It is simple in design, being straight bladed before narrowing and curving slightly to a point at the end and a clipped spine. The blade is very wide and the back is thick. The handle has no crossguard and is designed for thrusting, chopping and slashing. The blade averages 19" in length and weighs about 1lb 3oz. The blade originates in northern Europe.

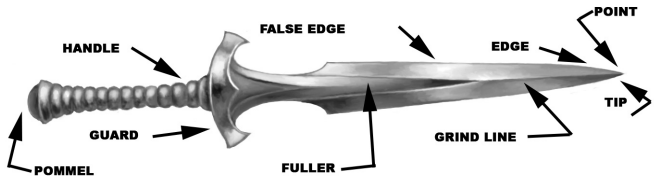
TALIBON: A single edged knife with a broad blade. The blade has an expended belly and straight back before tapering to a point, and the handle is bent at an angle. The design of the knife is utilitarian as well as martial. It is made for thrusting and chopping motions. The blade weighs about 2lbs and averages 18" in length.



DAGGERS

The dagger is similar to the knife in that it is a bladed weapon under 20" in length. It has been used as long as the knife and serves many of the same purposes. The dagger is distinguished from the knife in that it has two sharpened edges. Daggers are also generally smaller than knives and designed for thrusting cutting motions. The dagger has the advantage in combat of allowing slashing in two directions.

Dagger Morphology



Handle: Where the blade is attached and the dagger is held. It is usually made of wood and is either smooth or carved with one more grips.

Edge: The sharpened edge of the dagger.

Tip: The curved or tapered section of the blade before it reaches the tip.

Point: The end of the dagger, usually sharpened for thrusting.

Guard (bolster): This is similar to a sword's quillon. It has a flange between the blade and handle that prevents the hand from slipping up the blade.

False Edge (swage): The end of the blade on the reverse of the edge can be sharpened. If at all, this section covers no more than 1/3 the length of the blade.

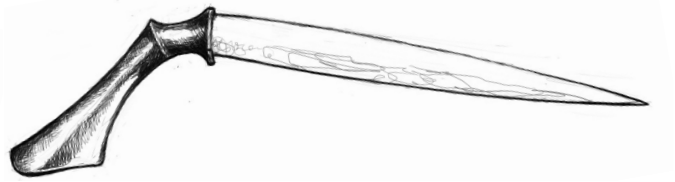
Fuller: The central portion of some daggers have a central groove running part or most of its length. The fuller reduces the weight of the dagger.

Grind Line: The central ridge of the dagger if there is one. It is the thickest part of the dagger and adds strength to the blade.

Pommel: The base of the handle. The pommel can be smooth or have slight tapers or bulges to aid in gripping the dagger.

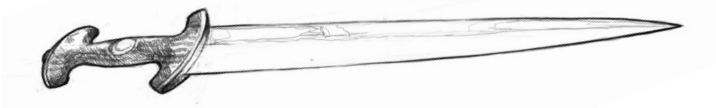
AKINAKA (Acnaces, Akinakes): A straight bladed, double edged dagger. It has a small lobed or straight crossguard with a stylized pommel that splits at the base. This type of dagger ranges broadly in specifics but weighs around 1lb 8oz and is around 14" in length. It is a slashing and thrusting weapon.

BADIK DAGGER: This dagger has a double edge and a straight blade. It is distinctive for its pistol grip handle. The badik weighs about 12oz and is roughly 11" long. It is used for slashing, chopping, and thrusting.

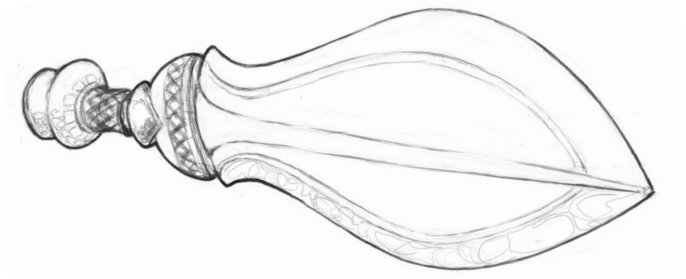


BALISONG (butterfly dagger): A straight bladed, double edged dagger tapering to a point. It is unique in that the blade can be hidden inside two counter rotating handles and is easily and quickly whipped out. The balisong is around 9" long and weighs about 13oz. Unlike the balisong knife, the dagger was designed primarily for fighting. The balisong is easily concealed.

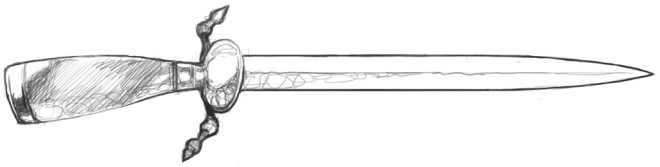
BASELARD: This is a long, thick, double edged dagger that tapers evenly along its length to a point. The baselard has a distinctive 'I' shaped hilt. The dagger is designed as a thrusting weapon. It is approximately 20" long and weighs roughly 1.3lbs.



BASWA: This double edged dagger has a narrow base and a large ovoid or leaf shaped end tapering to a point. It weighs roughly 1lb 3oz and averages 15" in length. It is used for thrusting, slashing, and chopping. The Baswa originates in Africa.



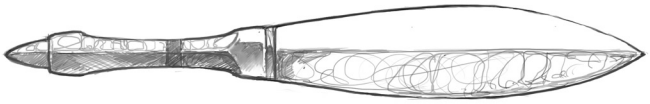
BATARDEAU: A long, thin double edged dagger with a small cross-guard. It about 11" long and weighs around 13oz. The blade is primarily a thrusting weapon.



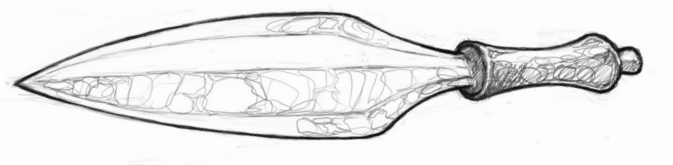
BAYU: A double edged dagger with an ovoid shaped blade end with narrow forte. The handle is shaped as a pistol grip. It is about 15" long and weighs about 20oz. It is used primarily as a slash and thrust weapon. The weapon originates in Borneo.

BICHUA: A double edged dagger with a curved or recurved blade with a loop on the handle. The loop often extended around the handle to form a knuckle guard. The bichua is about 11" long and weighs around 13oz. It is primarily a thrusting and slashing weapon.

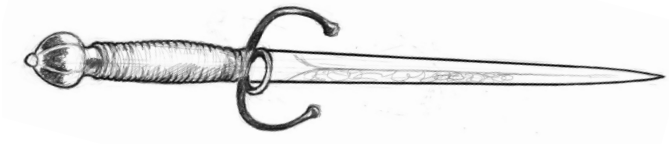
BILLAO (BELEWA): This double edged dagger has a broad blade, nearly 3" wide, that bulges the middle before tapering to a sharp point. It is designed for thrusting and downward strikes. The dagger is around 17" long and weighs around 9oz.



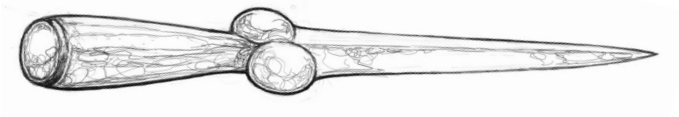
BUYU: This dagger has a wide, reinforced, spear shaped blade and a narrow base. It is forged with a metal handle which is then encased in wood. It is designed primarily for thrusting and slashing. The buyu is about 15" long and weighs about 15oz.



BODKIN DAGGER: A narrow, double edged dagger tapering to a sharp point. The handle has a large, straight crossguard or half-moon guard. The dagger weighs about 15oz and is around 10" long. It is used as a parrying weapon and for thrusting attacks. It is often used in conjunction with a rapier or similar sword.



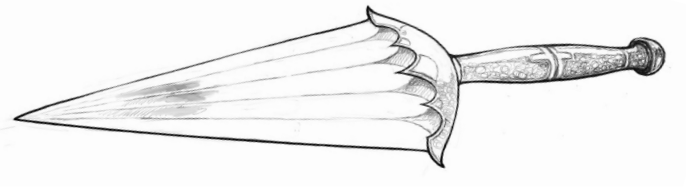
BOLLOCK (KIDNEY DAGGER): This narrow, double edged dagger tapers to a sharp point. It is unique in appearance in that the crossguard is composed of two prominent ovals, representing male genitalia. The dagger weighs around 1lb and measures about 1' in length. The bollock dagger is primarily a thrust and slash weapon. It is often associated with thieves and bandits.



BRACELET DAGGER: This double edged dagger has a straight blade narrowing to a point. The sheaf for the dagger is worn on the forearm like a bracelet. The weapon is small enough to be easily concealed beneath clothing. It is about 7" long and weighs around 10oz.

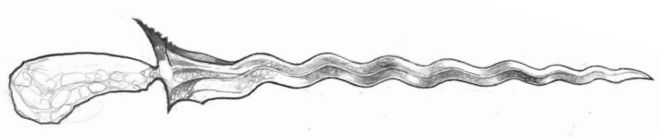
CHILANUM: This is a wide, doubled edged dagger. The blade is wavy (typically two waves), narrowing to a point. It is noted for having a deep and broad fuller. The chilanum has a small crossguard and is roughly 16" long and weighs approximately 14oz.

CINQUEDEA: A double edged dagger with a very broad base (the name means five fingers and is a reference to the size of the dagger's base). The blade angles to a rounded tip and is noted for its numerous fullers and has an inverted 'v' crossguard. It measures about 18" in length and weighs around 25oz.



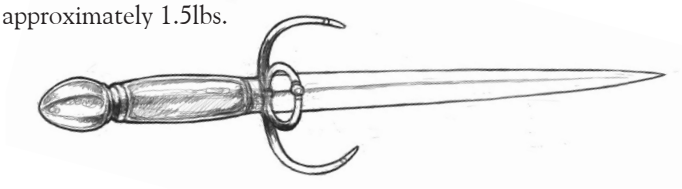
ESTRADOIT (VENETIAN EAR DAGGER): A single edged, slim dagger with a very sharp tip. The handle is unique in that the pommel is split into two lobes, sometimes in the shape of ears. The thumb is placed between the lobes to give more power to a thrust. This is primarily a thrusting dagger or punch dagger. It is about 12" long and weighs about 14oz.

KRIS: A double edged dagger with a wavy blade. The base of the blade lacks symmetry but always has a crossguard that is formed as part of the blade. The blade, handle, and scabbard are often elaborately decorated and said to imbue the weapon with great power. The blade cause wide wounds thrusting in and widen when withdrawn. The weapon weighs approximately 1lb 5oz and can be up to 20" in length.

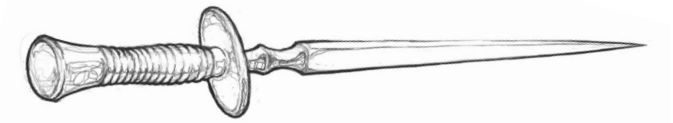


MAIN GAUCHE: A double edged, heavy dagger designed for parrying. The dagger is approximately 20" long, has a reinforced blade and a large, pronged crossguard for catching and

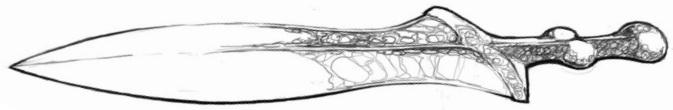
deflecting blows. The weapon is used in the off hand. It weighs approximately 1.5lbs.



PONGIARD: This dagger has a long blade tapering to a sharp point and a significant crossguard. The blade is often triangular or square in shape and dull. It is primarily designed as a thrusting weapon made to penetrate chain or linked metal armors. The pongiard is about 14" long and weighs roughly 12oz.



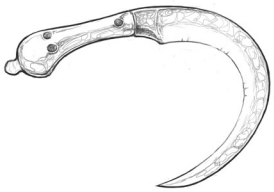
PUGIO: A short stabbing and slashing dagger. It generally has a leaf shaped blade sharpened on both sides with a triangular tip. This is a strong blade with ribs that extend close to the blade's edge. It is a broad dagger being about 2" wide. The dagger averages 11" in length and weighs about 12oz.



SICA: This sword is has a long single edged blade with a pronounced inward curve. The belly of the blade is sharpened. The weapon is designed for downward chopping motions for full effect and is used to reach around smaller shields. The blade measures about 18" in length and weighs approximately 1.4lbs.

KNIFE/DAGGER VARIANTS

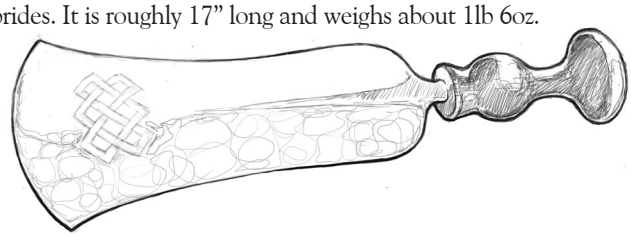
BANK SICKLE KNIFE: This is a small sickle shaped knife with a sharpened inner edge. The knife weighs roughly 14oz and is about 9" long. It is used for slashing and hooking an opponent.



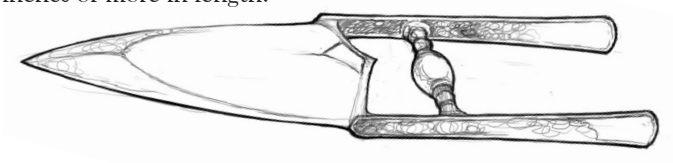
BELADAU: A double edged knife with a moderately curved blade and little or no crossguard. The sharp edge is on the convex portion of the blade. The beladau was used as a slashing weapon but would be used to "pull" opponents in closer to melee. It is about 20" long and weighs approximately 1lb and 6oz. It is often used in conjunction with the Cabang.

CLEAVER: The cleaver is like a large knife. It consists of a short handle and a broad, single edged blade with a thick reverse side to add weight to a blow. Although primarily used in the kitchen for the purposes of butchery, it can be used in close quarter melee as a chopping weapon similar to a hatchet. It is about 13" in length and weighs approximately 1.3lbs.

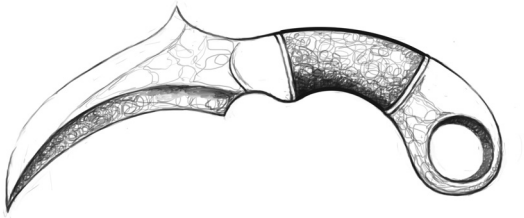
KUBA KNIFE (FANTAIL KNIFE): This unusual dagger consists of a long, wide blade that ends in a crescent. The edges of the crescent are sharpened. The blade underneath the crescent is also sharpened but not all the way to the hilt. The weapon is designed for slashing in combat, though it may have had more value as a trade item for brides. It is roughly 17" long and weighs about 1lb 6oz.



KATAR: A double bladed dagger with an 'H' shaped horizontal grip. The blade is broad at the base and narrows to a fine tip. The tip is often reinforced to prevent it from snapping. The grip is horizontal to the blade and two 'arms' extend from the grip so when held the metal crossbars go up the forearm. The katar is primarily a thrusting dagger, though slashing motions are used as well. The lengths can vary greatly, though the blade is typically less than 20". The crossbars could measure up to 30 inches or more in length.



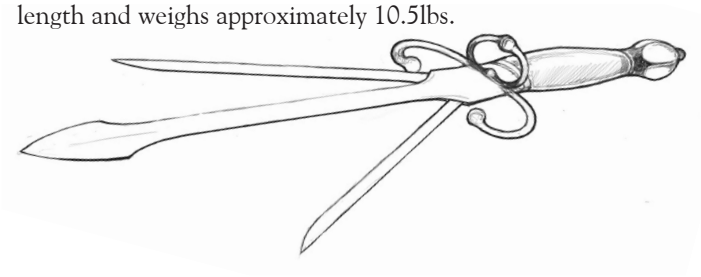
KARAMBIT: A small, double edged knife with a crescent shaped blade and a straight handle. The blade resembles a claw. The base of the handle has a finger ring. The karambit is used for slashing and hooking opponents.



KUJANG: An unusually shaped, single bladed knife. The blade has a broad curve and deep inward belly at the base, extending straight at the end with a notch on the blade side. The blade has a small crossguard. The backside has holes in it to allow for decorations. The blade has as much symbolic value as utility. It is used in chopping and thrusting, weighs about 10 oz and is about 8" long.

SICKLE, WAR: A farmer's sickle modified for combat. It consists of a short handle with a 'u' shaped blade extending from it. The blade is designed for draw cuts and only the interior is sharpened. It is about 15" long and weighs roughly 1.8lbs.

TRIDENT DAGGER (TRIPLE DAGGER): This dagger is designed primarily as a parrying weapon. In its closed position, the dagger appears as a double edge dagger. When opened (spring loaded), the two side blades spring out to present a trident shaped dagger. In the latter position, the dagger can be used as an effective parrying weapon in the off-hand. The dagger is about 12" in length and weighs approximately 10.5lbs.



SWORDS

The sword is, essentially, a long knife or dagger. It is a bladed weapon used for slashing, thrusting and cutting. It is not clear at which point a knife or dagger becomes a sword; though, at some point in the weapon's length, the manner in which one fights with it changes, and the weapon is considered to be a sword. For the purpose of our discussion, the length of a weapon to be a sword must be 21" or more and one sharpened edge extending at least 2/3 the length of the weapon. This distinguishes the sword from several types of axes or axe-like weapons, polearms, or other unusual weapons.

The oldest swords date to about 5000 years ago and come from the Middle East. These swords were made of bronze and rarely exceeded two feet in length. Bronze is not very strong and blades would easily bend or break if they were much longer than two feet. The technology to make swords quickly spread to the East and West. However, it was not until the introduction of iron that sword use became more common place. The early technologies for making iron produced only slightly stronger blades (at much greater cost) than the bronze ones, but it was enough to allow for stronger, longer, and differing blade types.

About 2500 years ago iron production and smelting processes had improved enough to allow for the production of even stronger and longer blades, and iron weapons quickly supplanted bronze weapons on the battlefield. The technology for smelting did not take a dramatic turn again until about 1000 years ago when the process of quench hardening iron was discovered. This produced high quality weapons of even greater lengths than before and a far wider variety of useful blade types. The technology for producing ever better iron and, later, steel improved constantly over the centuries. The cost of swords decreased over time as their strength and length increased.

The sword evolved greatly through the years. From their humble origins of short, double or single edged straight bladed bronze swords to the four foot long, wavy bladed flamberge of the latter Middle Ages, the sword took on many shapes and sizes. Swords could have two edges or a single edge, be straight bladed, slightly curved, partially curved, recurved, or dramatically curved. Swords stretched in length from 20 inches to 60 inches and, in a few cases, even more. Blade shapes were thick, thin, and ovoid. Some blades had prominent grind edges, while some had fullers, and many had neither.

It is impossible to touch upon all the aspects of a sword's uses and history in a tome of this size, but a few comments are necessary. Generally speaking, a sword's manufacture was limited by materials, technologies, and uses. A sword is designed and produced to certain effect. The gladius was designed to be used in a manner the katana is not suited for. The katana, likewise, was designed in such a manner that the cutlass could not be used. Each of these weapons were designed with purpose in mind. The design reflected or augmented a style of fighting and with a close eye to the opponent's weapons, armor, and fighting style.

I must make a note on the classification of swords. This is my classification and should not be confused with scholarly work, though I have done a bit of research and put some thought into it. Swords are broadly characterized as double edged and single edged. You might notice the absence of a few sword names since they refer to a classification of sword rather than a type of sword. For example, the backsword is often referred to in literature and gaming. Truly, the term backsword refers to a classification of swords, those without a sharpened back on a single edged sword.

THE SWORD

Swords are designed for specific purposes and are limited, in nature, by available materials, technology, and experience of the swordsmith. In looking at a blade some characteristics stand out as to purpose. Swords are basically used to chop, cut, slice, or thrust.

A chop is a single motion attack trying to edge into the target. It is often followed by a slice. A slice is a drawing motion as the blade is pulled out (or thrust further in) after a chop. It is intended to cause more damage. A cut is an attack with the point or edge drawn across the target. A thrust utilizes the tip of the blade to jam into a target opening an ever widening gap as the blade penetrates.

Considering the above, a blade's shape tried to maximize a specific type of attack.

Swords used primarily for chopping attacks tend to be straight or only slightly curved. They can have one or two edges and a point or no point. The blades also tend to be heavier sporting ridges, pronounced spines, or wide blades.

Swords used primarily for thrusting tend to have smaller but thicker blades with sharp points. They also tend to be straight and double edged. A false edge helps to enhance thrusting capacity for curved blades. As armor developed, edges were dropped altogether for a pure thrusting sword.

Swords used for slicing attacks can have one or two edges and may have straight or slightly curved blades. The straight

blades often have fullers and the curved blades tend to be broad without pronounced spines.

Swords used primarily for cutting attacks tend to be curved and single edged, though double edged cutting blades do exist. The curvature enhances the long draw. The edge of the blade is always the convex portion.

Blades often contain elements to allow for multiple types of attacks. Hence an early arming sword has a ridge, two edges and a narrow point. It is good for chopping, slicing, and thrusting and remained a good quality and highly useful sword design for several centuries. Alternately, the zweihander is primarily a blade for thrusting, chopping, and cutting. Although an impressive blade, its appearance on the battlefield was short lived indicating a limited utility.

Sword Morphology

The sword consists of two basic parts, the hilt and the blade. The blade is the cutting portion, and the hilt is for holding the sword. Many times, a sword with a slightly different handle or blade is given separate names or nomenclatures. In this book handle styles, crossguards, and blade differences are ignored in describing some weapons as the differences between them are very minor. The same applies to the blade. If the difference is significant enough, either morphologically or culturally, they are described separately.

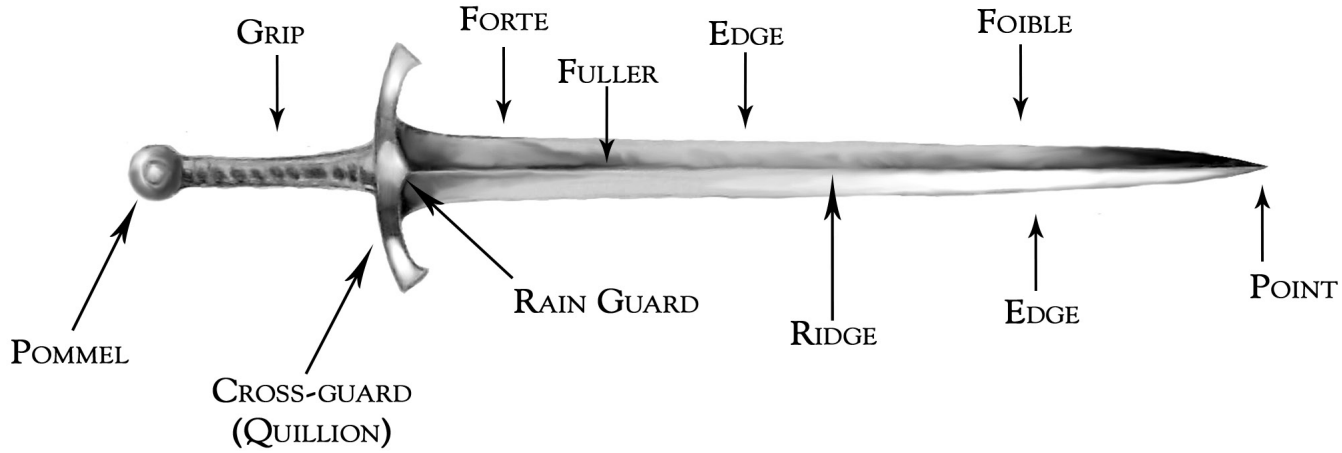
Hilt

Grip: Where the sword is grasped. It can accommodate one or two hands and can range in length from 5"-14". The handle can be rounded, angular, ribbed, wood, or metal and covered with leather, cotton, or other material. It may also be embellished with horn, ivory, or other suitable materials.

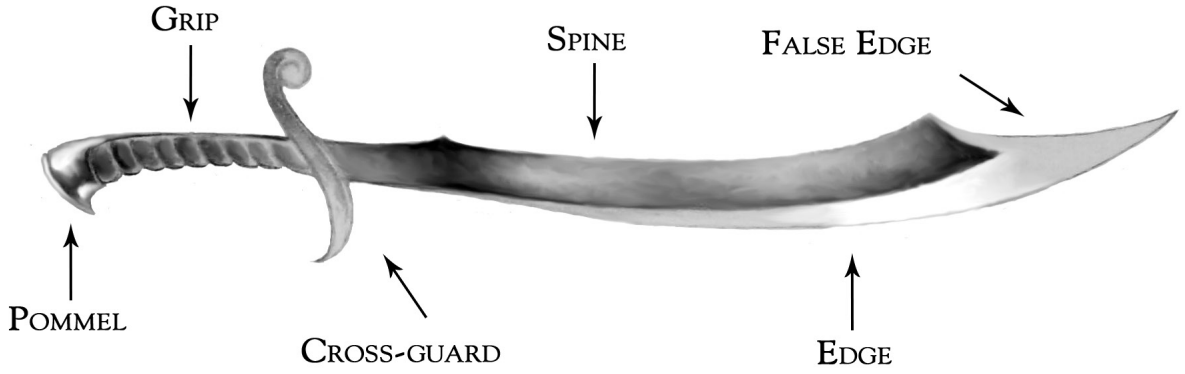
Pommel: The bottom of the handle. Usually a knob of some type is place here. This can be rounded, angular, or any imaginable shape. The pommel serves to keep the handle intact and prevent the hand from slipping off the bottom of the sword. In larger swords, the pommel is used as a counterbalance to the blade as well.

Crossguard: The part of the handle which is perpendicular to the blade and rests between the handle and the blade. The crossguard primarily serves to protect the hand in combat. Many swords have little to no crossguard while others have large crossguards. The crossguard can be straight, curved up or down, or be 'v' shaped. Each section of the crossguard is called a quillon.

Guard: The portion of the handle which protects the hand. This is differentiated from the crossguard only in shape and area of coverage. These can be basket shaped and cover the whole hand with woven metal, cup shaped and extend over the upper hand, or swept shaped to cover the knuckle and upper hand.



The Sword



Handle: Not to be confused with the grip, the handle is where the hilt is attached to the blade. The handle is part of or covered by the grip.

Rainguard: A small portion of the hilt that extends over the blade. It serves to place the sword securely in a scabbard and to protect the interior of the scabbard when the sword is placed inside it. It also prevents rain, dust and debris from falling into the scabbard.

Blade

Tang: The portion of the blade that fits into the handle.

Shoulder: The portion of the blade just above the crossguard and where the blade widens out from the tang. The shoulder is often wide and thicker than the blade, though this is not always the case.

Forte: The lower, and strongest portion of the blade above the shoulder where the cutting edge begins. It usually comprises the lower 1/3 of the blade's length and is common on most two handed swords.

Ricasso: A few single handed swords have a ricasso which enables them to be used with both hands. It is the lower portion of the blade which rests just above the shoulder. In this case, the blade is dull to accommodate the blade being held at that point

Edge: The sharpened potion of the blade. A sword can have one or two edges, and some may even a false edge. Some swords do not have edges and are used primarily for thrusting. The latter types of blade were developed as armor became thicker and more difficult to penetrate.

False Edge: Swords with one edge occasionally had a sharpened upper portion of the blade opposite the primary cutting side. The false edge is used to create a point and to allow for a backswing cut.

Fuller: A channel which runs down the center of the blade. It serves to lighten a blade at the cost of stiffness, but does not impede cutting power. These are almost exclusively on straight blades. Blades can have more than one fuller.

Ridge: The center of the blade, usually on the highest portion of the blade in cross-section. The more pronounced the ridge, the stiffer and stronger the blade. This comes at some cost in weight but allows for more powerful cutting attacks.

Point: The tip of the blade. The point can be rounded, sharp, beveled, or other shapes. It functions to allow for efficient thrusting.

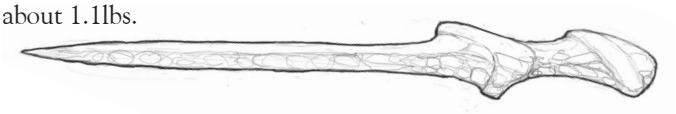
Foible: This is the weakest portion of the blade and comprises the upper 1/3 length of the blade.

Spine: The spine is the dull side of a single edged sword. The spine is often the thickest portion of single edged swords and adds weight to chopping motions.

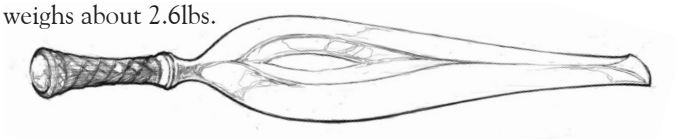
DOUBLE EDGED SWORDS

ARMING SWORD: Perhaps the most ubiquitous sword of the early middle ages, this sword is a comparatively light and versatile weapon. This is a straight, double edged sword with a slight taper towards the end before coming to a point. A fuller runs 2/3 the length of the blade. It is typified by a cruciform crossguard. The sword is designed as a cut and thrust weapon to be used one handed and with a buckler or shield. The weapon measures about 30" in length and weighs approximately 2.4lbs. This blade is the originating point for the **Castles & Crusades** short and long swords as they are essentially shorter and longer versions of this sword.

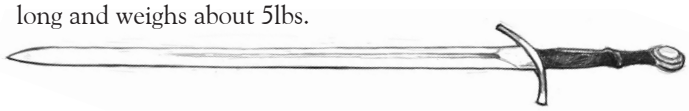
ARSLENTEPE: This sword has no actual name. It is the name of the village in which the oldest known swords were found. This is a short sword about 21" in length. It is double edged, straight with a taper towards the tip and primarily used for thrusting and cutting. The sword is made of copper and weighs about 1.1lbs.



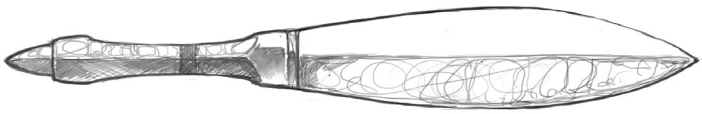
BABANGA: A double edged sword with a very broad leaf shape. The blade broadens significantly at the end, and the tip is traditionally squared off and not tapered. This sword is designed primarily for chopping motions. It is approximately 23" long and weighs about 2.6lbs.



BASTARD SWORD (hand-and-a-half sword): The bastard sword has a long, narrow, double edged blade that gently tapers to a point. The handle is about 13", so that the weapon could be used with both hands and has a significant crossguard. The bastard sword was designed to be used with two hands or with one hand, though its weight probably played a factor in who could wield it with one hand. It is primarily a cut and thrust weapon capable of delivering powerful blows. It is approximately 45 long and weighs about 5lbs.



BILBO: A short, narrow, double edged sword that tapers to a fine point. It has a short crossguard and hand guard and is used primarily as a cut and thrust sword. The length, shape, and nature of the metal made the blade excellent for use aboard ships. The blade averages 21" in length and weighs about 1.4lbs.

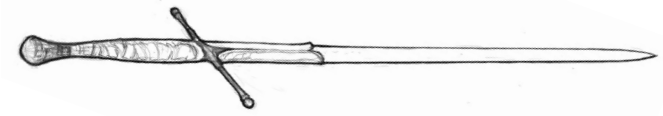


BROADSWORD: A long, broad, straight bladed, single edged sword that tapers to a point at or near the tip and has a false edge. It has a basket hilt that both protects the hand and encourages

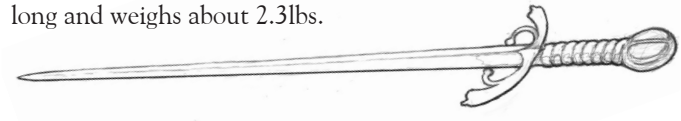
the correct hold. The broadsword is designed for cuts and thrusts. It weighs about 3.5lbs and averages 32" in length.

CARP'S TONGUE: This oddly named sword is a single forged weapon with a long, double edged blade that broadens slightly from the hilt to about 1/3 the way up its length. It then narrows quite dramatically to a point. The blade's design is rather unique in that it maintains a good edge for the draw cut while being quite useful for thrusting and jabbing motions as well. The blade is about 31" long and weighs about 3.3lbs.

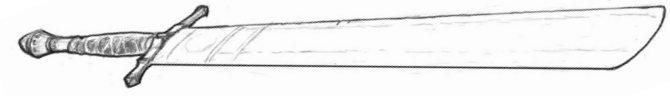
CLAYMORE: The claymore is a straight bladed, double edged sword of significant length. The blade is fairly broad and taper to a point near the tip. The base of the blade is reinforced with two langets extending from the hilt. The hilt has a significant crossguard with a 'v' shape pointing to the tip of the blade. The blade is designed to be used with both hands and, unlike other two handed swords, the claymore does not have a dulled lower blade for grasping. The sword measures 51" in length and weighs approximately 5.5lbs with a handle measuring 13".



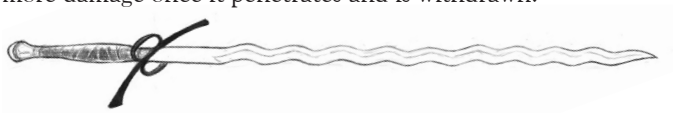
ESPADA ROTERA (SIDE SWORD): A straight, narrow bladed, double edged sword that tapers to an acute point. It has a strengthened ridge, and the base of the blade is unsharpened and squared. It has a crossguard and later versions have a basket hilt. The blade is designed for thrusting attacks but can deal fine cuts. It is not intended to be used on the battlefield and is considered a courtly or civilian sword. It is approximately 30" long and weighs about 2.3lbs.



EXECUTIONER'S SWORD: A sword designed specifically for beheading. The blade is straight, heavy, double edged and has a blunt tip with a pronounced fuller extending 1/3 the length of the blade from the hilt. It bears a small crossguard and large handle, about 14" long. The sword's overall length averages 36" and weighs about 4.3lbs. Its weight, blade, and shape make this sword ill-suited for combat, though it certainly could be used in melee.



FLAMBERGE: The flamberge is more a style of blade than a sword. For this discussion though, it refers to a two handed sword. This is a very long, double edged sword forged with a wavy blade pattern (the pattern appears as a flame, hence its name). The blade tapers to a point at the end, and the base of the blade is dulled to allow it to be held above the crossguard. There is a significant crossguard above the hilt and a smaller cross-guard above the dulled portion of the blade. The handle comprises at least 15" of the weapon's overall length of 60". The blade weighs about 7lbs and is designed to be used with both hands. The wavy pattern on the blade takes immense skill to properly make and requires great care in sharpening. It causes more damage once it penetrates and is withdrawn.

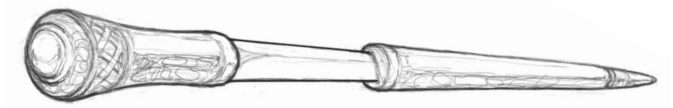


GLADIUS HISPANIENSIS: A double edged, broad, straight bladed sword. The blade is straight and broad, ending in a sharp, triangular tip. The blade is thick and broad with a rhomboidal cross-section. The handle is knobbed or ribbed for ease of grip. It has an ovoid guard and rounded pommel. The blade is designed primarily for thrusting and slashing attacks. It averages 31" in length and weighs approximately 2.2lbs.

GLADIUS MAINZ: A double edged, with a straight, broad blade that narrows to a sharp, triangular tip. The blade is has a broad, rhomboidal cross-section. The handle is knobbed or ribbed for ease of grip and has an ovoid guard and rounded pommel. The blade is designed primarily for thrusting and slashing attacks. It averages 26" in length and weighs approximately 1.8lbs.

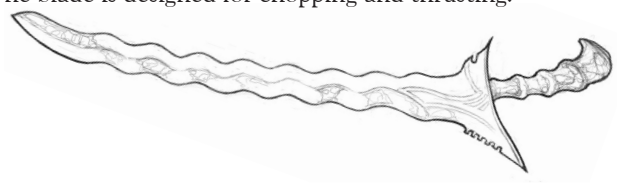
GLADIUS POMPEII: A double edged, with a straight, broad blade that narrows to a sharp, triangular tip. The blade is has a broad, rhomboidal cross-section. The handle is knobbed or ribbed for ease of grip and has an ovoid guard and rounded pommel. The blade is designed primarily for thrusting and slashing attacks. It averages 22" in length and weighs approximately 1.7lbs.

GUPTI: A very narrow bladed, double edged sword that tapers to an acute point. This sword has no guard, and the blade is thin so that it can be sheathed in a walking stick and remain concealed. The sword measures about 31" long and weighs approximately 1.5lbs. It is designed for thrusting and cutting.

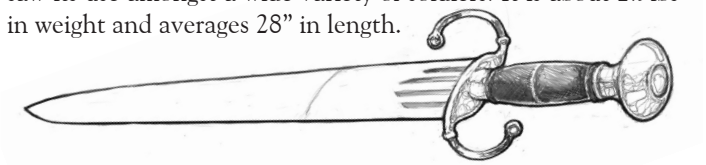


JIAN: This is a straight bladed, double edged sword. The moderately sized blade is straight for most of its length before tapering to a quick point at the end. The sword has a moderate crossguard and a rounded pommel. It is designed for cutting and thrusting. The jian averages 31" in length and weighs about 1.8lbs.

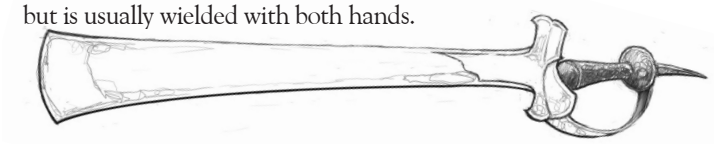
KALIS (SUNDANG): The kalis is a double edged sword with a wavy central and lower section. The blade tapers to a straight point at its end. The crossguard is elaborate and is part of the blade. The handle is straight, though variations occur where it is slightly curved to facilitate chopping attacks. The sword varies greatly in length but averages around 30" and weighs around 1lb 14oz. The blade is designed for chopping and thrusting.



KATZBALGER: A broad bladed, heavy sword. It is doubled edged and straight for most of its length tapering to a point only towards the tip. The blade has 2-3 fullers running its length. The crossguard consists of a set of quillons wrapped into a figure 8. The handle is straight with a slight bulge at the base above the pommel. The sword is designed primarily as a chopping weapon to be used from horseback, but its high utility otherwise saw its use amongst a wide variety of soldiers. It is about 2.9lbs in weight and averages 28" in length.



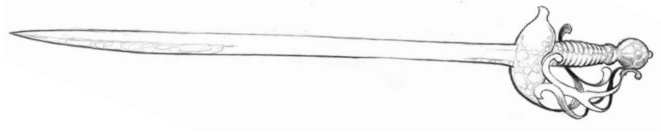
KHANDA: This massive sword is a double edged, straight bladed weapon. The blade broadens slightly at the tip which is dull, squared off, or rounded. The end of the handle has a spike attached to it. Often one side of the blade is weighted more heavily than the other to give it more power on the swing and is designed for cutting and chopping motions. The base of the blade is dull or flat sided so that the weapon can be used with two hands. The blade is nearly 40" long and weighs about 2.7lbs. It can be wielded with one hand but is usually wielded with both hands.



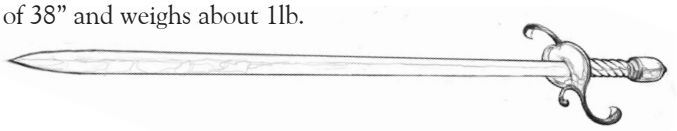
LONGSWORD: The longsword is, for purposes of this discussion, a gaming term. It refers to a long, double edged sword with a pronounced fuller running 2/3 its length. The blade tapers smoothly to a point past the fuller and is designed for one handed use with a shield in cutting and thrusting attacks. The blade measure about 35" in length and weighs about 2.4lbs. The handle of the longsword has a pronounced cruciform crossguard.

MEROVINGIAN (MIGRATION PERIOD SWORD): This is a sword type with no specific name as it straddles a development of the sword from the Roman spatha to the Viking sword in Europe. The sword is double edged, straight bladed and has a slight fuller running its length. The tip of the blade is rounded, and it has a small, usually disc shaped, crossguard and rounded pommel. The sword is designed for slashing and cutting attacks, averages 30" in length, and weighs approximately 2lbs.

MORTUARY SWORD: A type of broadsword with a long blade, of medium weight, double edged with a sharp point that tapers toward the tip of the sword. The sword's hilt has a basket which is often very elaborate. The mortuary sword is designed as a cavalry sword with chopping as its primary function. However, the blade is not heavy enough to produce great chopping action but its size and design made it an excellent thrusting weapon. The blade measures about 42" in length and weighs approximately 2.4lbs.

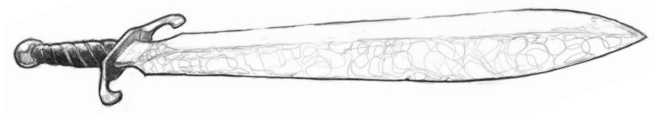


RAPIER: A narrow, long, straight bladed, double edged sword. The blade has a distinct fuller and tapers gently to a point. The hilt has a caged basket and, often elaborate, crossguard. The blade is designed for cutting and thrusting, though the thrusting aspect sees its greatest utility. The sword has an average length of 38" and weighs about 1lb.



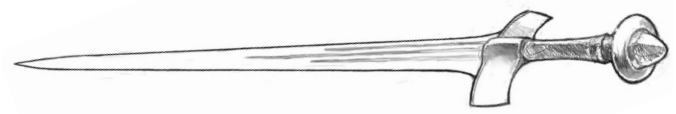
SEME: This double edged sword's blade is narrow at the base and broadens into a leaf shape towards the tip. It is generally more rounded than pointed at the top. There is no guard. These blades are designed for utilitarian uses as well as close quarters combat. They measure about 29" in length and weigh about 1.7lbs.

SHORT SWORD: A double edged sword with a fuller, pointed tip, and moderately sized crossguard. The sword is designed for cutting and thrusting. It weighs roughly 2.5lbs and is about 25" long. The term short sword is a generic term originating (from this books perspective) in the role playing games community.



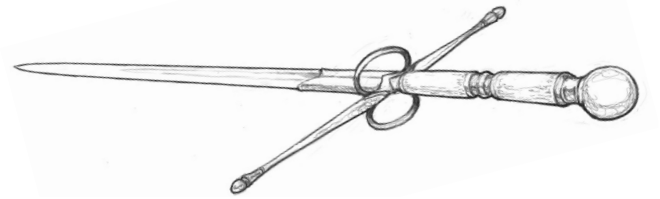
SPATHA: A broad, straight bladed, double edged sword. The blade has a slight taper before ending with a triangular shaped tip. The blade is unique in part for its single, double or even triple fullers. It has a small oval shaped guard and broad, half-ovoid pommel. The spatha is designed for thrusting and chopping The blade averages about 34" long and weighs about 2.5lbs.

TAKOUBA: A double edged sword with a pronounced tapered from roughly 1/3 the length up the hilt from the crossguard. The base is broad and 2-3 fullers run the length of the blade.



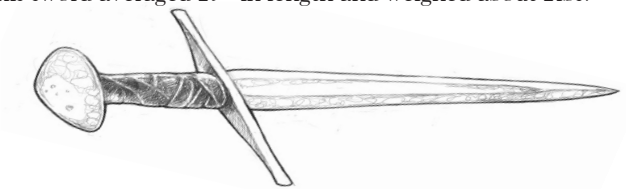
The tip is often rounded rather than pointed. The hilt has a simple crossguard. The Takoba is about 29" long and weighs approximately 2.2lbs.

TWO HANDED SWORD (ZWEIHANDER, BIHANDER): This sword is the culmination of the arming sword or longsword in length. The technical expertise to create a light weight long weapon apparently ended here. Its utility may have ended here as well as the two handed sword had such a short span of use. The two handed sword has a very long, straight, doubled edged and thin blade that tapers to a point at the end. Many had fullers, but this is not always the case. The sword length averages at 60" with the hilt comprising at least 15" of that length. The base of the blade was dulled to allow it to be held above the crossguard. The crossguard is significant in size. There is a smaller crossguard located just above the dull portion of the blade. The blade was often used in conjunction with pike formations but found limited use in the melees following an army's colliding with one another. The scant evidence of the swords broad application leaves one to doubt its utility in single combat. The blade weighs about 7lbs.



VIKING SWORD: A straight bladed, double edged sword of moderate to large width. The blade tapers slightly toward the tip. The tip has a beveling that is not quite a point nor rounded as Merovingian swords were. There are one or two fullers running the length of the blade. The handle has a prominent disc shaped guard and rounded or triangular shaped pommel. The sword is designed for slashing and cutting. It averages about 37" in length and weighs approximately 2.3lbs.

ULFBERHT (VIKING SWORD): This sword is typified by a long, broad, double edged blade with a taper beginning about 2/3 length up from the hilt. The taper narrows gradually to a point. There is a fuller in most of these blades. The hilt has a short guard, barely extending the width of the blade, and it has a large, round pommel. These blades are made with the best materials available at the time. They are designed for cutting and thrusting. This sword averaged 29" in length and weighed about 2lbs.

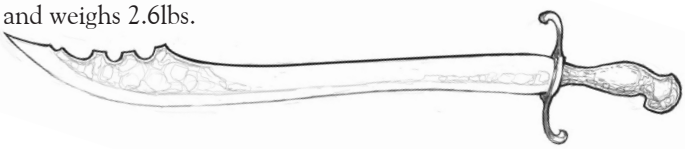


XIPHOS: A double edged sword, broadening about 2/3 the length to the top and narrowing to a sharp point. Its leaf shape makes is perfect for cutting and thrusting attacks. It averages 21" in length and weighs about 1L 6z.

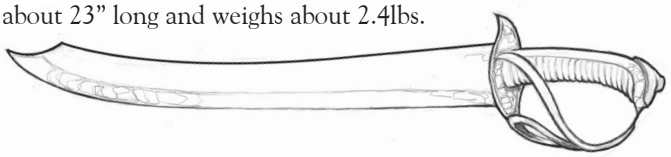
SINGLE EDGED SWORDS

AYDA KATTI: A single edged weapon with a broad blade and a sharp bend or curve beginning halfway up the length. The interior of the blade is sharpened and has no crossguard. It is designed for chopping motions. It is approximately 23" long and weighs about 3.3lbs.

BADELAIRE: A large, single edged sword with a broad and heavy blade that curves slightly towards its tip. The tip has a false edge to facilitate thrusting motions though it is primarily designed for chopping. The blade is distinctive for its pronounced 'S' shaped crossguard. It is approximately 21" long and weighs 2.6lbs.



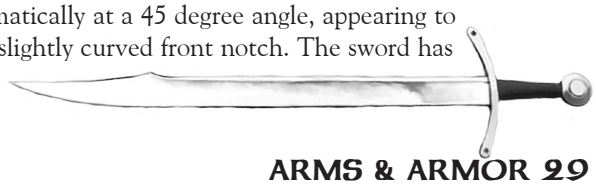
CUTLASS: This sword features a slightly curved blade with the curve more pronounced towards the tip. The blade is broad and has a false edge, and its hilt has a full basket. The cutlass is designed for slashing, cutting, and chopping. It is favored amongst seamen as it has less a tendency to get caught in ropes and is maneuverable in tight quarters. The sword measures about 23" long and weighs about 2.4lbs.



DAHONG BALAY: A single edged sword with a slight curve or belly that tapers smoothly to a very sharp point and has no crossguard. The dahong balay developed from a farmer's implement and the name means 'rice blade.' It weighs around 1lb 8oz and averages 25" in length.

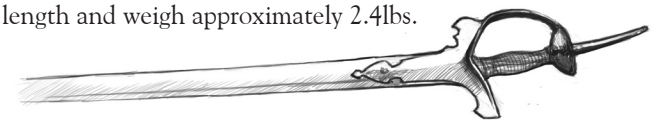
FALCATA: This single edged sword bends forward and broadens at the end and has a shallow, inward belly. The handle has no crossguard but a metal loop acting as a knuckle guard. The weapon has the power of an axe and was designed for chopping and slicing. It averages 25" in length and weighs around 1lb 14oz.

FALCHION: This is a very wide, thick bladed, single edged sword. The blade broadens towards the tip where it then curves up dramatically at a 45 degree angle, appearing to have a slightly curved front notch. The sword has a large



crossguard and is designed to be a chopping weapon. It is about 32" long and weighs around 2.5lbs.

FIRANGI: This is a straight bladed, single edged sword. The blade tapers ¾ of the way up its length to a point. It often had a reverse edge, and in rare cases was actually double edged. The handle is slightly curved and has a significant basket wih a spike protruding from the end. It is designed for slashing and cutting but thrusting is also possible. The blades measure about 36" in length and weigh approximately 2.4lbs.



FLYSSA (SHORT): The blade of this single edged sword has a slight swelling toward the tip before tapering on the bladed side to a long, slender point. The backside is straight with a false edge. It has no crossguard. The blade is designed to penetrate and break chain armors and is generally used in chopping and thrusting motion. The blade averages 26" in length and weighs approximately 3.3lbs.

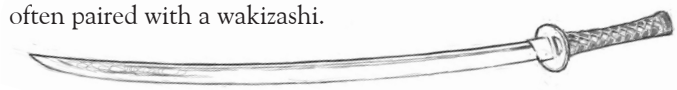
FLYSSA (LONG): The blade of this single edged sword has a slight swelling toward the tip before tapering on the bladed side to a long slender point. The backside is straight with a false edge. It has no crossguard. The blade is designed to penetrate and break chain armors and is generally used in chopping and thrusting motion. The blade averages 35" in length and weighs approximately 3.9lbs.

KACHIN DHA: This sword features a long single edged blade which curves slightly to the tip and has a thickened reverse. The tip is squared off and blunted. The hilt is rounded and has no guard. The sword is designed for slashing and chopping attacks. It weighs approximately 2.4lbs and is about 36" long.

KAMPILAN: This single edged sword has a long blade, broadening and thinning at the tip with a notch on the reverse side. The handle is straight and bifurcated at the end and has a crossguard. The blade is roughly 38" long and weighs around 3lb 5oz. The sword is used for slashing, thrusting and chopping.

KARABELA: This sword has a slightly curved blade, more pronounced towards the tip than the base. It is a single edged, thin bladed sword with a guard and a straight handle. Though curved swords are generally preferred for fighting from horseback, this sword is designed to be used on the ground as well. It is approximately 1.7lbs in weight and about 39" long.

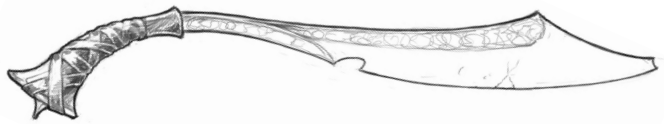
KATANA: The katana is a single edged sword with a moderately curved blade. The blade barely tapers just before the tip where it is notched and beveled. The katana is primarily designed for cutting and chopping motions and has no guard. The sword averages about 27" long and weighs about 2.5lbs. The katana is often paired with a wakizashi.



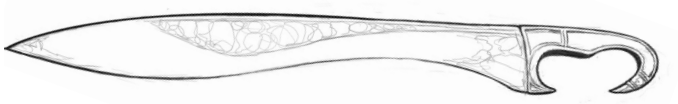
KHOPESH: A short bladed weapon. Halfway up its length the blade has an outward bend, then straightens before bending back in with a sharp hook at the tip. The outside of the blade is sharpened. The tip is generally blunted. The weapon is made for chopping, cutting, and has the capacity to hook an opponent. The sword measures about 22" in length and weighs approximately 2.9lbs.

KILIJ: A single edged, narrow sword with a long, curved blade. The blade's curve begins 2/3 up its length where it takes a dramatic inward sweep. The blade then broadens before tapering to an abrupt point. The outside of the blade is sharpened and has a false edge. It has a crossguard and a slightly curved handle with a decorative protrusion on the pommel pointing away from the blade's curve. The blade is designed for slashing and cutting, and the broadened end lends the sword weight and significant chopping power. The blade weighs approximately 2.5lbs and is about 35" long.

KLEWANG (KELEWANG): This single edged sword has a very broad end with a notch on its reverse. It has no guard, and the handle has a 45° angled end. The sword is about 25" long and weighs about 1lb 10oz. The sword was used primarily for slashing and chopping.



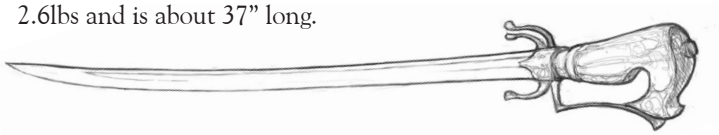
KOPIS: The blade of this single edged sword bends forward from the middle and has a gentle notching on its reverse side. The kopis is primarily a cutting weapon. It averages 25" in length and weighs 1lb 13oz.



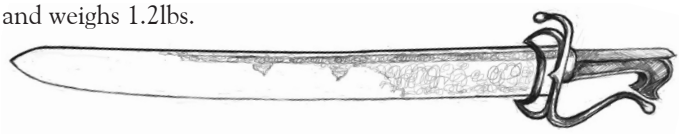
MAKHAIRA: A straight bladed, single edged sword that tapers to a point on the cutting edge. It has no crossguard, and is designed for cutting and chopping, though thrusting is an option. It is approximately 27" long and weighs about 2.8lbs.

MESSER: This single edged sword has a moderate long blade that is thick and wide and curves slightly towards the tip with a false edge. The hilt has a significant crossguard with a nail-like protrusion extending away from the flat to protect the hand. The pommel has an inward curve at the base to better control the hand's position. The blade is designed primarily for cutting and thrusting. It weighs about 2.3lbs and is 25" long.

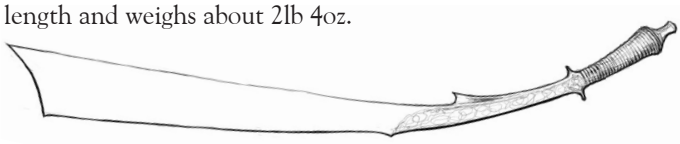
NIMCHA: A single edged sword with a long, straight blade that curves upwards in the last 1/3 of its length. It has a false edge, and a fuller runs nearly the entire length of the blade. The handle has a knuckleguard, and the crossguard is composed of three quillons pointing blade side. The blade is designed for slashing, chopping, and thrusting. It weighs approximately 2.6lbs and is about 37" long.



PALLASCH: A heavy, single edged sword with a straight blade that tapers only on the cutting edge to a point. The handle has a knuckle guard or simple basket and a curved quillon on the thumb side of the grip. The sword is designed for use from horseback in cutting and chopping, though there is enough of a tip for thrusting attacks. The sword is approximately 27" long and weighs 1.2lbs.

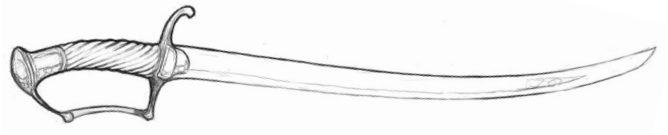


PANDAT: A heavy, single edged sword forged from one piece of metal. The handle is not separate from the blade except in shape, and the blade has a flat end. The sword angles inward at 30° from the handle. The pandat can be used with one or two hands as the handle makes up 1/3 of the blade's length. It is designed primarily as a chopping weapon. It measures 25" in length and weighs about 2lb 4oz.



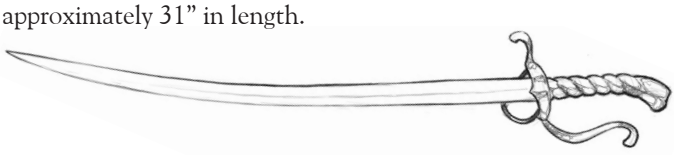
PULWAR: A single edge sword with a narrow, radically curved blade. The blade's curve begins 1/3 up the length of the blade from the hilt. It narrows to a point just before the tip, and the blade has significant fuller. The hilt is small, has a prominent crossguard, and rounded pommel. The pommel forces the hand into certain positions focusing the user's motion into draw cuts. It is about 37" long and weighs around 3.7lbs.

SABER: The term saber covers quite a variety of weapons though mostly they differ only in small details and nomenclature. For this discussion, the saber is a light sword with a curved blade. It has a single edge tapering at the end to a tip. The handle is curved back from the blade and has a knuckleguard and curved quillon on the thumb side of the grip. The blades are designed to be used from horseback for slashing and cutting. They are approximately 33" in length and weigh about 2.1lbs.



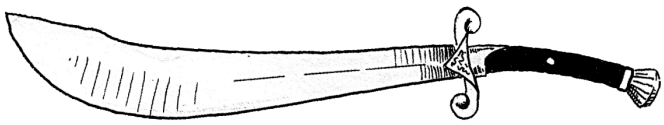
SAIF: This is a single edged, narrow bladed sword with a significant curve. The outer side of the blade is sharpened. It usually has a false edge and tapered point. The sword often has a crossguard hooked to the blade side and a slightly curved handle. There is a prominent fuller running nearly its whole length, and the blade is designed for slashing and draw cuts. The sword is typically 32" long and weighs approximately 2.3lbs.

SCHNEPFER: A single edged sword with a slight curve to the blade. The blade has a false edge and a fuller near its back. The handle has a crossguard or knuckleguard and is straight. It is a predecessor to the saber. It weighs about 2lbs and is approximately 31" in length.



SCIMITAR: This sword has a distinct curve, and often grows wider near the tip. It is of middle eastern origin, and may be used easily while mounted. It weighs about 3 lbs. and is 30 inches long.

SCIMITAR, GREAT: A heavier version of the scimitar, weighing up to 6lbs. and about 4 ft in length. It has a longer grip, and may be wielded two handed.

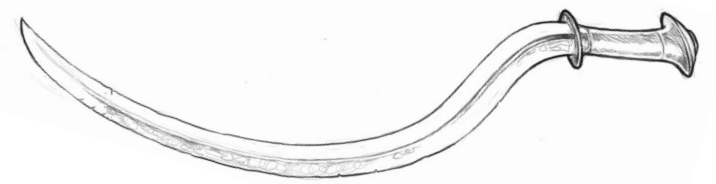


SCYTHE SWORD: A single edged, slightly curved blade with a crossguard. The belly of the blade is the sharpened and has a false edge. The blade is used for slashing and chopping. It is about 27" long and weighs about 1.4lbs. (see Kilij. the style is nearly identical)

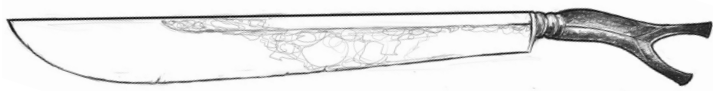
SHAMSHIR: A single edged blade with a narrow, radically curved blade. The curve begins 1/3 up the length of the blade from the hilt and is quite pronounced. The blade tapers to a point just before the tip. The handle is large and has a significant crossguard. The shamshir is designed for draw cuts. It averages 40" in length and weighs 4.2lbs.

SHASKA: This sword has a very slightly curved blade. It is single edged, thin, and has a fuller running its entire length. The sword tapers half way through its length to a fine point. It has no guard and a slightly curved handle. This light weight sword is designed for slashing and thrusting combat. It is approximately 2.8lbs and 36" long.

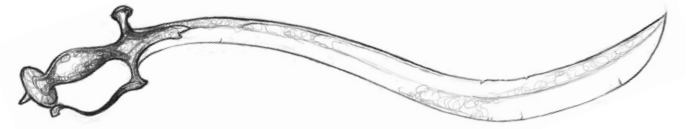
SHOTEL: A large weapon with a long blade curved nearly into a semi-circle. Both edges of the shotel are sharpened, excepting one blunted area on the outside upper blade. The cross-section of the weapon is nearly diamond shaped. The sword is designed to be used two handed and is capable of dismounting opponents in a hooking swing. Its extreme curve allows it to reach around shields and still land a blow. The shotel weighs about 2.6lbs and is 40" long.



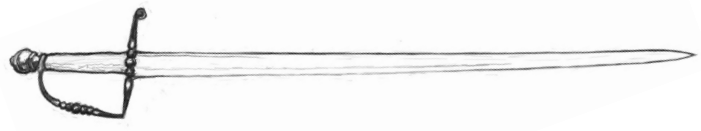
SIKIN PANYANG: This is a single edged, straight bladed sword with a rounded tip. It has no guard and has a 'Y' shaped handle. It is used primarily for slashing attacks. This sword is about 22" long and weighs about 1.3lbs.



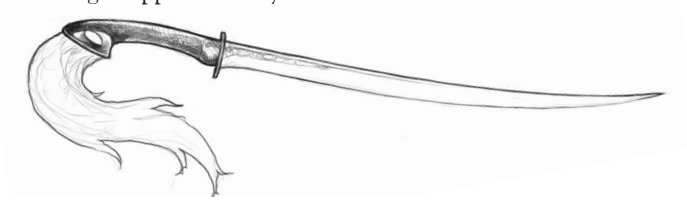
SOSUN-PATTAH (SAILABA): This sword is typified by a very gently curving 'S' shaped blade. Only one side of the blade is sharpened, though it has a false edge and a fuller curves the length of some of these blades. It tapers to a point at the end. There is a pronounced crossguard, and the handle continues the sword's slight curve with one side of the pommel protruding. The sword weighs about 2.5lbs and is approximately 31" in length. The sword is designed for cuts and thrusts.



SPADROON: This narrow bladed weapon has a fuller running its length, a reinforced back and a false edge. The spadroon also often has a basket hilt. It is designed as a cut and thrust sword. It averages about 25" in length and weighs about 24lbs.



SURIK: The blade of this single edged sword tapers to a fine point at its end. The handle usually has a hole carved in it to bring spiritual power to the weapon. It measures about 32" long and weighs approximately 2lbs.

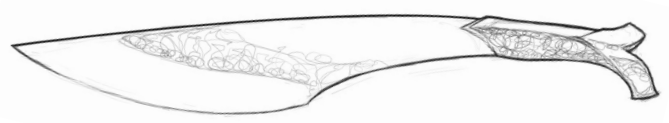


SZABLA: A curved blade with a single edge. The tip expands slightly on the reverse and has a false edge. The sword has a simple crossguard and straight handle. The blade is designed for use from horseback for cutting and slashing, however, the presence of an expanded false edge indicates it was used for thrusting as well. The blade is about 35" in length and weighs 2.3lbs.

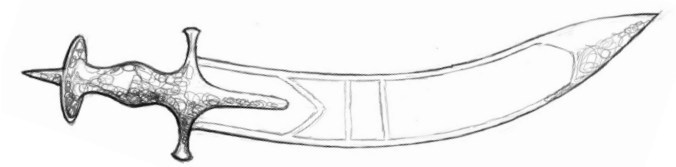
TACHI: A single edged sword with a slightly curved blade that tapers very slightly just before the tip where it is notched and beveled. The tachi is primarily designed for cutting and chopping. It averages about 30" in length and weighs about 3lbs. (See Katana. The swords are of similar design)

TALWAR: A single edged sword with a broad, curved blade. The blade's curve usually begins about 1/3 the length up the blade from the hilt. The curve is not radical, but it is pronounced. The blade widens slightly towards the tip just before the taper. The handle is small, with a disc shaped pommel and small crossguard. The handle's design is such that it forces the user to focus on the draw cut (typically the best cut for saber-like weapons) and thrusting maneuvers. The sword is about 40" long and weighs nearly 4 pounds. It cannot be used two handed.

TAPAK KUDAK: The blade of this single edged sword is about 24" long and weighs approximately 1.5lbs. The blade is straight with a broadened portion towards the tip end, giving the blade an axe like feel. The tapak kudak has no guard and is designed for chopping and thrusting.



TEGHA: This is a broad bladed, single edged sword with a slight curve and reverse edge. The blade tapers to a point close to the tip, and the handle has both a crossguard and knuckleguard. It is about 39" long and weighs approximately 3lbs.



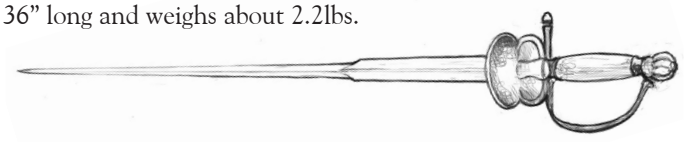
WAKIZASHI: This is a single edge sword with a gentle curve to the blade. The blade has a 'V' shaped cross section and is strengthened on the reverse. It is beveled to a point at its end. There is a disc shaped crossguard. The wakizashi is designed for slashes, chops and thrusts. The sword is about 21" in length and weighs approximately 1.8lbs. (The design is similar to the Katana, but shorter)

YATAGAN: This is a short, single edged sword. The blade is straight for the first 1/2 of its length before curving inward or in the direction of the edged side. It tapers to a point at the end, and is designed for slashing and chopping. It is about 23" long and weighs approximately 2.4lbs.

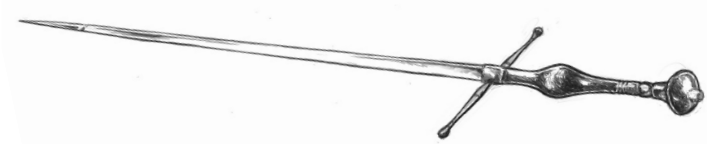
9 RING BROADSWORD: A broad, heavy, curved sword with a single edge, growing wider near the tip. It is usually used in a chopping or slicing attack. It features a series of holes along the spine into which are inserted a number of rings. These rings may be used to snag or catch an opponent's weapon, and make for a dirtier wound. It is about 30 inches long and weighs 4lbs.

SWORD VARIANTS OR UNCLASSIFIED

COLICHEMARDE: This sword's blade has a wide base with 2-3 fullers. This portion only extend up 1/4 of the length of the blade. From there, the blade assumes a diamond shape and tapers to an acute point. The handle has a basket hilt, and the sword is designed for thrusting and slashing. It is approximately 36" long and weighs about 2.2lbs.

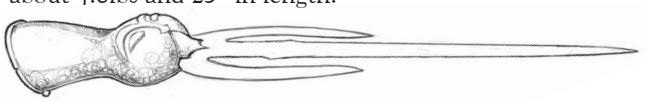


ESTOC: The estoc is a variation of the longsword. The blade is long and has no sharpened edge. Rather, the blade's cross-section is triangular, square or possibly other shapes. The blade tapers to a very sharp point and is designed to penetrate armor, especially mail and plate, in thrusting or stabbing motions. These blades are primarily used with both hands. The handles often comprise 1/4 the length of the weapon, however, they are light enough to be used one handed. The blades range greatly in size and weight. For our purposes, the average length is about 45" and the weight is 3.9lbs.

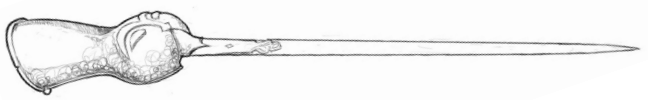


FOIL: A weapon used for fencing. The foil is a long bladed sword with a rectangular cross-section and no sharpened edges but has an acute point. It has a cup hilt, and the sword is designed for thrusting and slashes with the tip. The foil is about 33" long and weighs approximately 15 ounces.

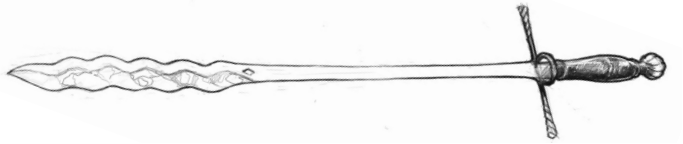
MANOPLE: This is a unique sword in that it has one long blade and two side blades curving out of the main blade at its base. The side blade point in the same direction as the main blade but are about 1/3 the main blade's length and all edges are sharpened. This is attached to a gauntlet that covers the hand and forearm. The blade is used for thrusting and cutting. It is about 4.8lbs and 23" in length.



PATA (GAUNTLET SWORD): The pata is a unique sword as the blade ends in a metal gauntlet that covers the hand and forearm. The blade length varies widely, but for this discussion should be considered a 31" blade. The blade extends from the gauntlet, is straight, and double edged with the tapering to a point occurring only towards the tip. The pata is designed as a thrusting weapon and is especially useful against mounted opponents or armor. It can also be used for slashing and cutting. It weighs approximately 4.5lbs.



SAUSCHWETER: This unusual sword is designed for hunting boar. The sauschwetter is a long and heavy sword. The handle is long, enabling the user to wield it with both hands. There is often a very elaborate cross-guard. The lower 1/3 of the blade is square shaped in cross section and the upper 1/3 spreads to a broad leaf shaped blade with two edges which taper to a fine point. At the base of the edged portion of the blade, there is a slot through which a bar or hook can be inserted. This acts as a brace to prevent the blade from penetrating too far into the boar. The sword is roughly 43" long and weighs about 3.5lbs.

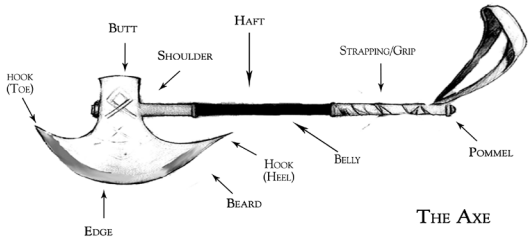


SMALL SWORD: The small sword is medium length fencing weapon. The blade of the sword is about 30" in length, triangular in cross section, and does not usually have a cutting edge. The blade tapers to a fine point at the tip. It has a basket hilt and is designed as a thrusting and fencing weapon. The sword weighs about 1.5lbs.

AXES, OR AXE LIKE

The axe is one of man's most primitive tools; it has been used for hundreds of thousands of years, for scraping flesh from bone to cutting wood and as a weapon. It is very simple to make, consisting of the blade and haft. They are generally light weight and tuck into a belt with out recourse to a scabbard. As a weapon it serves a dual purpose, both cutting and bludgeoning.

Axe Morphology



The Axe

Beard: The lower blade of the edge.

Belly: The cross section of the haft between the strapping/grip and the shoulder.

Butt: The end opposite the edge.

Edge: The cutting end of the axe.

Haft: The handle, consists of the shoulder, belly, strapping/grip and pommel.

Hook, Heel: The lower point of the edge.

Hook, Toe: The upper point of the edge.

Pommel: The end of the axe haft

Shoulder: The bracing on the haft between the belly and the butt of the axe. Where the axe head is attached to the haft.

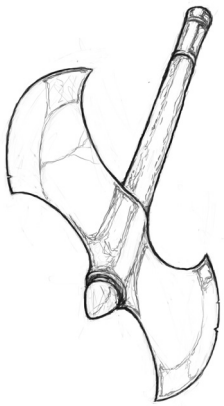
Strapping/Grip: The lower section of the haft designed for gripping the axe.

BARDICHE: This weapon consists of a 5' straight shaft and a head with a 2' long, crescent shaped blade. The butt of the head is flattened, and the top arm of the crescent extends beyond the shaft. The bottom arm of the crescent curves down to the shaft where it attaches to the shaft as well. The bardiche is designed for heavy chopping blows and is made to be used with both hands. Its overall length can be 6', and it weighs roughly 5lbs.

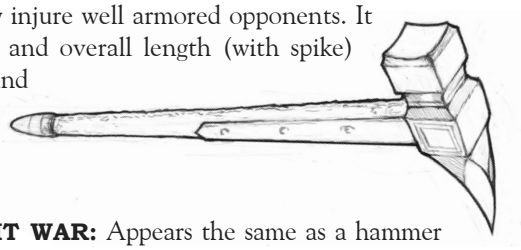
BATTLE AXE: This weapon is an axe specifically designed for combat. It consists of a straight wooden shaft with an axe head attached. These heads are crescent shaped on the cutting edge and flat on the butt. These blades tend to be thin, only thickening towards the butt. The battle axe is designed for use with one hand, though the handle is long enough for it to be used with both hands. It weighs about 2.5lbs and is about 3' long with the blade measuring about 10". The basic battle axe can be found throughout the world and across the ages. For our purposes, this is a generic term to describe a wide range of battle axes.

BEARDED BATTLE AXE: This battle axe consists of a handle with a slight curve at the bottom and a head with a crescent shaped blade and extensive beard. The blade with beard can be up to 15" in length. The butt of the head is flat. This weapon must be used with both hands to be wielded effectively. These are about 5' long and weigh approximately 6lbs. This is a generic term for game use, though a rough equivalent can be found historically.

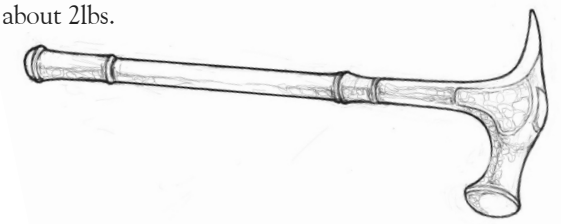
DOUBLE BLADED AXE (bipennis, twibill): The double bladed axe is an axe specifically designed for combat. The head is attached to a short wooden shaft. The head had two crescent shaped axe blades opposite one another which are thin, thickening towards the middle. It is designed for chopping and slashing. They weigh roughly 3lbs and are approximately 3' long. The double bladed axe shows up rarely in history so its actual utility in combat must be low. Though a term for it exists so it must have been adapted from double bitted wood chopping axes.



CROWBILL: This is a 3' hammer variant with a hammer head attached to the top. Opposite the hammer head is a fluke, beak or pick. The crowbill is designed for rending and tearing armor to more effectively injure well armored opponents. It weighs about 4lbs and overall length (with spike) is about 3' long and weighs 2lbs. It can be used with one hand.



HAMMER, LIGHT WAR: Appears the same as a hammer but with a larger head. It is intended to deliver blunt force trauma and was quite useful in delivering concussive blows to well armored opponents. It measures about 2' in length and weighs about 2lbs.



HAMMER, LIGHT SPIKED: This weapon appears the same as a hammer but with a larger head and a spike attached to the reverse. It is intended to deliver blunt force trauma and was quite useful in delivering concussive blows to well armored opponents. The spiked end was used to more effectively pierce armor. It measures about 2' in length and weighs about 2lbs.

HAMMER, HEAVY WAR: This weapon appears the same as a hammer but with a larger head. It is intended to deliver blunt force trauma and was quite useful in delivering concussive blows to well armored opponents. It measures about 3' in length and weighs about 4lbs.

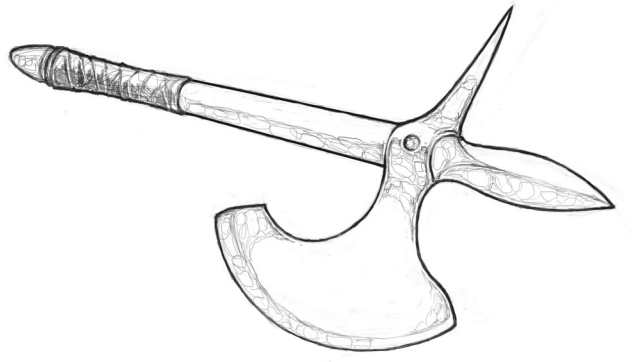
HAMMER, HEAVY SPIKED: This weapon appears the same as a hammer but with a larger head and a spike attached to the reverse. It is intended to deliver blunt force trauma and was quite useful in delivering concussive blows to well armored opponents. The spiked end was used to more effectively pierce armor. It measures about 3' in length and weighs about 6lbs.

HATCHET: This is a tool for splitting or cutting wood but can easily be used for combat. Unlike the battle axe, however, it is not designed for combat. This is a 1' long haft with a heavy axe head attached to it. It has a large butt, a 4" blade, and weighs roughly 2lbs.

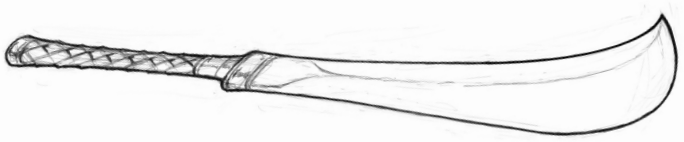
PICK, LIGHT: This weapon consists of a short staff with a metal head attached by langets or the whole weapon is forged as one metal item. On both sides of the head are significantly curved spikes, much like a miner's pick. Extending from the top is a short piercing spike. The weapon is designed to penetrate armor. This size is designed for use in one hand and can be thrown. The pick weighs about 4lbs and is about 2'5" long.

PICK HEAVY: This weapon consists of a short staff with a metal head attached by langets or can be forged as one metal item. On both sides of the head are significantly curved spikes, much like a miner's pick. Extending from the top is a short piercing spike. The weapon is designed to penetrate armor. This size is designed for use in one hand from horseback. The pick weighs about 4.6lbs and is about 4' long.

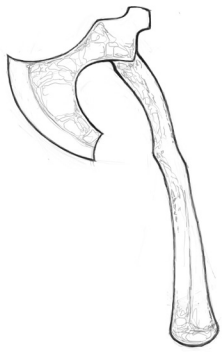
PIERCING AXE: This a battle axe with a spike attached to the top of the head. This allows the axe to be used effectively against chain and plate type armors in a thrusting motion. These axes measure 3'6" and weigh about 3.7lbs. This is a generic term for various types of axes.



RHOMPHAIA: This weapon consisted of a long haft with an equally long, slightly curved blade extending from it. The blade is sharpened on the belly and comes to a point at the tip and has a triangular cross section. It is designed for chopping, thrusting, and slashing. It is used with both hands. They are approximately 27" long (with the blade being about 14") and weighing about 3lb 4oz.



THROWING AXE: This small axe is designed to be thrown in combat, though it can be used in melee. The handle is small, straight or slightly curved about 18" long, and the blade measures about 5" wide. The blade is slightly crescent shaped and the head has a flat butt. It weighs roughly 1.3lbs. This is a generic term for many types of throwing axes such as the francisca.



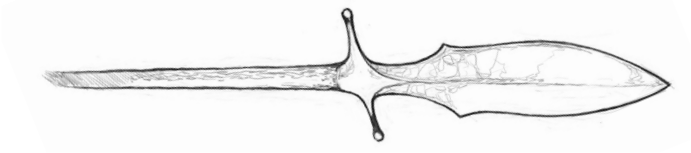
TWO HANDED AXE: This battle axe consists of a head with a long crescent shaped blade roughly 20" in length with a flat butt. The handle is straight or slightly curved at the bottom and measures 5' in length. The axe is designed for chopping or cutting. It weighs about 4.5lbs. This is a generic term used to describe axes used with both hands.

SPEARS

One of the earliest weapons, the spear evolved from a simple sharpened stick to a deadly, broad-bladed weapon. They serve both in hunting and warfare, as defensive and offensive weapons. The spear is used as a missile as well as a hand held weapon. They are generally cheap to manufacture and their use does not require a great deal of training.

ASSEGAI: This spear consists of a long thin 5 foot long shaft topped by a metal spear head. The head is 8 inches in length, double bladed with a broad base. The blade tapers to a point about 2/3 the length up the blade giving it a broad tip. The assegai is designed to be thrown and not used as a melee weapon. The overall length is roughly 5'8" and the weight is about 4.4lbs.

BOAR SPEAR: This weapon consists of a heavy shaft with a long spear head attached. Two long lugs protrude from the base of the head. The spear is designed for hunting and the lugs prevent animals (or others) from moving up the spear once thrust in and helps keep the beast (or other) at a distance. It was often braced for attacks. The boar spear is about 4 feet in overall length with the head comprising about 1 foot of that. It weighs approximately 4.8lbs.



BEAR SPEAR (ROGATINA): This weapon consists of a very heavy shaft with a long and broad leaf shaped spear head attached. Two long lugs protrude from the base of the head. The spear is designed for hunting and the lugs prevent animals (or others) from moving up the spear once thrust in and helps keep the beast (or other) at a distance. It was often braced for attacks. The bear spear is about 5 feet in overall length with the head comprising about 1 foot of that. It weighs approximately 6.3lbs.

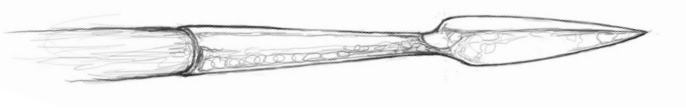
BUDIAK: This spear consists of an 8 foot long wooden shaft that swells at the butt. The butt usually has a metal cap on it. Atop the shaft is a thick, 12 inch long double edged spear head with two fullers running near the edges. The blade is broad and evenly tapered. This is a thrusting and slashing spear and not designed primarily to be cast in combat. The overall length of the budiak is 9 feet and it weighs about 4.5lbs.

CAPE ASSEGAI (EAST AFRICAN SPEAR, SUDANESE SPEAR): This spear consists of a wooden shaft about 5 feet long topped by a very broad, leaf shaped, double edged head measuring two feet in length and about 6 inches wide at the base. The spear can be thrown, but only with effect at a very short distance. It is generally thrown just before closing into combat or used two handed as a jabbing weapon. It measures around 7 feet in length and weighs around 6 pounds. It is from the East Africa.

DUNG (SHORT TIBETAN SPEAR): This spear has a long shaft averaging about 6 feet in length. The butt has a small metal knob, shoe or point on it. The head is usually 1 foot long, narrow, and double edged. The shaft has a metal band wrapped around it from head to butt. The latter gives the spear's shaft strength (as they are often constructed of softwoods) and allows for a firmer grip. This spear is not made for throwing. The overall length of the weapon is 7 feet and it weighs about 7.2lbs.

DUNG (LONG TIBETAN SPEAR): This spear has a long shaft averaging about 10 feet in length. The butt has a small metal knob, shoe or point on it. The head is usually 1 foot long, narrow, and double edged. The shaft has a metal band wrapped around it from head to butt. The latter gives the spear's shaft strength (as they are often constructed of softwoods) and allows for a firmer grip. This spear is not made for throwing. The overall length of the weapon is 11 feet and it weighs about 8.2lbs.

FRAMEA (MIGRATION PERIOD SPEAR): This spear is made of a thin shaft of soft wood, such a pine or heavier hardwoods. The shaft is approximately 6 feet long. The spear head on top is very narrow. A slight bulge at the base tapers gently to a fine point. These spears are light weight, well balanced and capable of being thrown a long distance. Due to their light weight they are also excellent melee weapons as well. They can be used equally well from horseback and afoot. The blade is approximately 1 foot long making the spears length 7 feet. It weighs about 3lbs.



HASTA: The shaft of this spear is 6'5" long and the blade another foot long on top of that. The shaft is thick and ade of ash. The blade is narrow with a slight bulge at its base. It tapers to a sharp point. This is not designed to be throw but used for thrusting. It originated in the early Roman Republic/Empire.

IKLWA (IXWA): This is a short spear with a 3 foot shaft. The blade atop the shaft is about 18 inches in length. It is a very broad blade with two sharpened edges. It tapers 2/3 up the length of the blade to a broad point. The Iklwa is intended for close quarters combat as a thrusting, slashing and chopping weapon. It can be thrown. Overall it is about 4'6" long and weighs about 2.3lbs.

KONTOS: This is a very heavy spear-like weapon designed to be used from horseback and wielded with both hands. It consists of a 12 foot long shaft with a 1 foot long leaf shaped, double edge spear head attached at the top and counterweighted at the bottom. To effectively use, it must be wielded with both hands as it weighs around 10lbs. Also, the saddle of the horse would probably have had a high back. The horse is guided with the knees and feet while being wielded. The kontos is most effective at the charge but can also be used as a pike or long spear.

KIKUCHI YARI: This spear consists of a 7 foot hardwood shaft with an 18 inch blade on top. The blade has only one edge. It curves on the sharp side to level with the reverse at the tip. The back is heavy increasing its impact. The weapon is designed for hacking

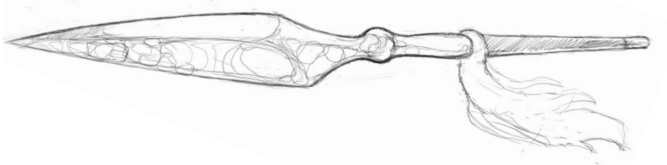
or chopping attacks though thrusting is possible. It has an overall length of 8'6" and weighs about 4.1lbs. It originates in Japan.

LANCE, HEAVY: The lance is essentially a spear designed for use from horseback. It consists of a large wooden haft with a leaf shaped double edged point attached to the top. A vamplate or rounded guard was placed at the bottom to prevent the hand from slipping up the lance at the time of impact. The lance was heavy weighing roughly 9lbs and up to 14 feet in length. It was most effective used at the charge and after initial contact was quickly abandoned if it survived the impact. Varieties of the lance can found throughout the world.

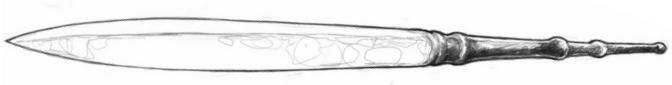
LANCE, LIGHT: The lance is essentially a spear designed for use from horseback. It consists of a large wooden haft with a leaf shaped, double edged point attached to the top. The light lance was essentially a heavy spear and could be used as such and even thrown. It often did not survive impact on a full charge but could be used from horseback for thrusting attacks otherwise. The light lance is heavy weighing roughly 4.5lbs and is up to 7 feet in length. It is most effective used at the charge. Varieties of the lance can be found throughout the world.

NANDUM: This is an all wood spear. The shaft is about 7 feet long and made of stout hardwoods. The fighting end of the shaft is carved such that it has numerous barbs running down its length. The barbs are only found on one side of the nandum. This weapon is used to thrust in and jerk, doing as much damage on the pull as the thrust. They are not intended to be thrown. It can also be used to help control a person as it sticks in them. Being wood, these spears break more easily than those with metal heads. It weighs about 3.9lbs. The nandum originated with Australian aborigines.

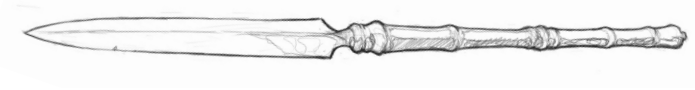
QIANG: This spear has a 6 foot long hardwood haft and a 12 inch long leaf shaped double edged head on top. The quiang is called the 'king of weapons' and is used for thrust and slash attacks. It is not designed for throwing but that could be accomplished. The weapon has an average length of 7 feet and weighs about 3.2lbs. This type of weapon is found throughout the world but this type in particular is native to China.



SANG: This is a lance designed for use from the back of a camel. The sang is an all metal spear; shaft and point. The shaft portion is rounded with ribbing for easier grip. The blade of the sang is 15 inches long and has a diamond shaped cross-section with no sharpened edges. This is a thrusting weapon designed to penetrate armor. It is about 6'3" long and weighs roughly 5.5lbs. It originates in India.

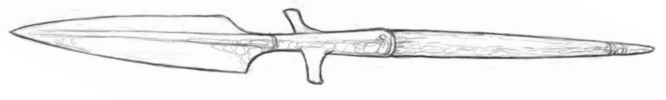


SANKAKU YARI: This spear consists of a 6 foot long shaft and an 18 inch long blade for an overall length of 7'6". It weighs roughly 4lbs. The blade is triangular in cross-section and has no sharpened edge. It come to a fine point at top. This spear is designed for thrusting and penetrating armor.

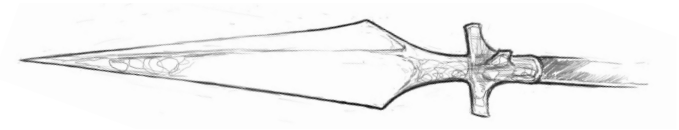


SPEAR: The spear consists of a wooden shaft with a metal blade attached to the top. The blade is short, double edged, shaped as an isosceles triangle with a narrow base fitting around the shaft. This spear is designed both to be thrown as a missile weapon and used in melee for thrusting and slashing. It weighs roughly 3lbs and is about 6 feet in length. The basic spear can be found throughout much of the known world for several thousands of years.

VIKING SPEAR: This spear has an ash haft and is approximately 5 feet long. The head of the spear consists of a double edged blade in a long and narrow triangular shape with wings projecting from either side of the blade's base. The blades average 12 inches in length making the spears overall length 7 feet. It weighed about 3.2lbs. It is designed for thrusting attacks and to be thrown.



VIKING BROAD SPEAR: This is a longer variant of the Viking spear. The spear is made of ash and is about 6.5 feet long. The blade is about 2 feet long with a broad double edged blade with short wings projecting from its base. The spear is designed for thrusting and slashing attacks if necessary. The overall spear's length is 8.5 feet and weighs about 4lbs. It is not designed to be thrown.

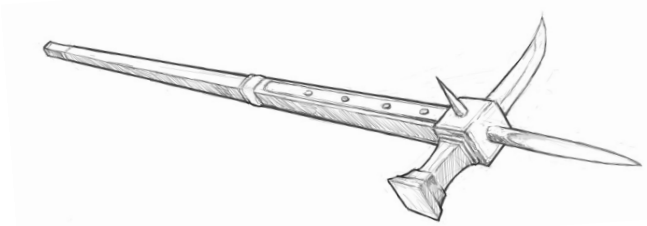


POLE ARMS

In general a pole arm is a weapon mounted on a long haft. Many were variations of farming implements and allowed foot soldiers greater reach on the battlefield, particularly in battles with mounted opponents. Their purposes are manifold, from unseating an opponent to pinning them. They are generally easy to produce.

BEC DE CORBIN: This is a 6 foot long pole with a hammer head attached to the top. Opposite the hammer head is a fluke, beak or pick and mounted on top is a spike. The bec de corbin was designed

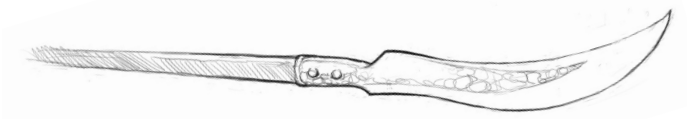
for rending and tearing armor to more effectively injure well armored opponents. It weighs about 4lbs and overall length (with spike) is about 6'8". This is a common weapon for medieval Europe.



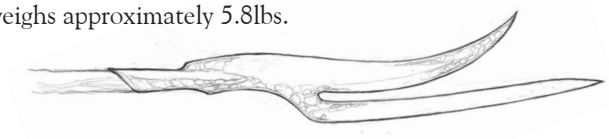
BILLHOOK: This polearm has an 6 foot long haft with a 2 foot long blade attached the top. The blade was curved 90 degrees at the end to form a hook. The belly of the blade is sharpened. A spike extends from the end of the blade and another short spike extends from the reverse of the blade. The billhook is designed for powerful chopping blows, thrusting like a spear, a hooking and dragging opponents into close melee and unhorsing mounted soldiers. The overall length of the weapon is about 8 feet and it weighs about 6.5lbs. It originated in medieval Europe.

DACIAN FALX: This polearm consists of a long pole to which is attached a long single edged blade with a pronounced inward curve. The belly of the blade is sharpened. The weapon is designed for downward chopping motion for full effect. The haft measure approximately 3 feet and the blade measures 3 feet. It weighs approximately 5lbs. 7 oz. It originates in Dacia.

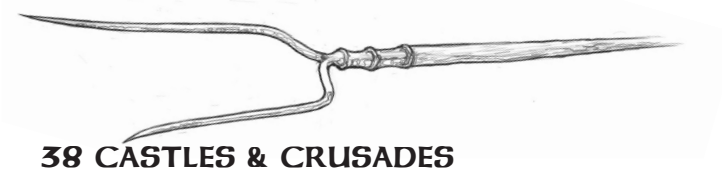
FAUCHARD: This polearm consists of a 7 foot long haft with a 14 inch curved blade attached to the top. The sharpened side is the belly of the blade. This proved to be a short lived weapon but from it came the more effective fauchard-fork. This weapon originated in northern Europe. It is 7 feet long and weighs approximately 5lbs.



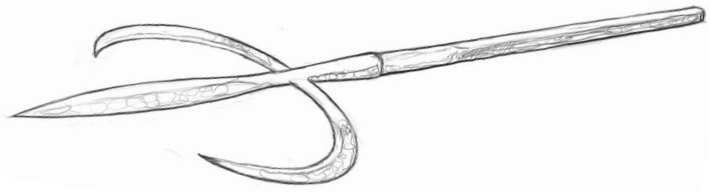
FAUCHARD-FORK: This polearm consists of a 7 foot long haft with a 14 inch curved blade attached to the top with another straight 14 inch spike attached opposite the cutting edge of the blade. The sharpened side is the belly of the blade. This weapon originated in northern Europe. It is 7 feet long and weighs approximately 5.8lbs.



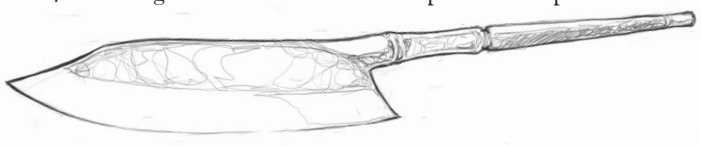
FORK (MILITARY): The polearm consists of a 6 foot long shaft with a two tined forked blade attached to the top. The forks two tines were thin and straight being approximately 1 foot in length. It weighs approximately 4.5lbs and had an overall length of 7 feet. It is used with both hands. It originated in Europe.



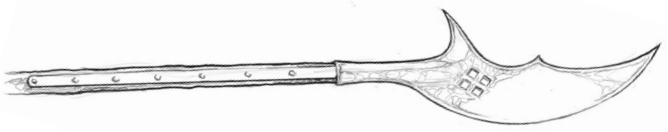
FU PA (HU CHA, TIGER FORK): The tiger fork is a type of trident which is designed for hunting tigers. The weapon is about 9 feet long. Three slender point tines make up the head. The central tine is about 18 inches long and the two other tines are about 12 inches long and point up. The weapon weighs about 5.8lbs. It is designed to thrust and pin and must be used with both hands.. The tiger fork originates in southern China.



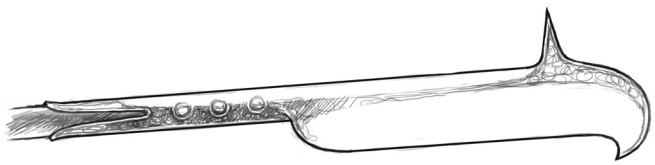
GLAIVE: This is a polearm with a 6 foot shaft and an 18 inch blade attached to it. The blade is broad, single edged and has a slight curve appearing as a half-moon. The glaive is used as a hacking weapon. The blade measures approximately 18 inches long with the overall length being 7'6". It weighed approximately 5.4lbs. The glaive was a common weapon in Europe.



GLAIVE GISARME: This is a polearm with a 6 foot shaft and an 18 inch blade attached to it. The blade is broad, single edged and has a slight curve appearing as a half-moon. The reverse had a small spike or tine attached to it. The glaive is used as a hacking weapon and the spiked portion to penetrate armor or pull riders from a horse. The blade measures approximately 18 inches long with the overall length being 7'6". It weighed approximately 5.6lbs. The glaive was a common weapon in Europe.

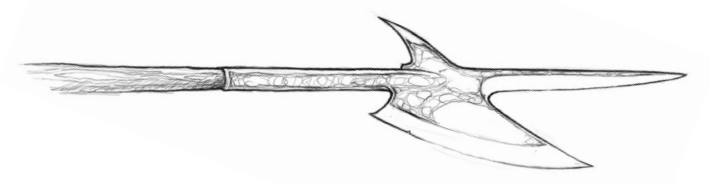


GISARME: This is a polearm with a 5 foot shaft and a 2 foot long crescent shaped, broad blade ending in a pronounced hook wrapping over the blade. The belly of the blade is sharpened. The blade is very similar to a pruning hook and likely derived from one. It is useful for dismounting soldiers. The entire length of the guisarme is roughly 7 feet. It weighs approximately 5.1lbs.



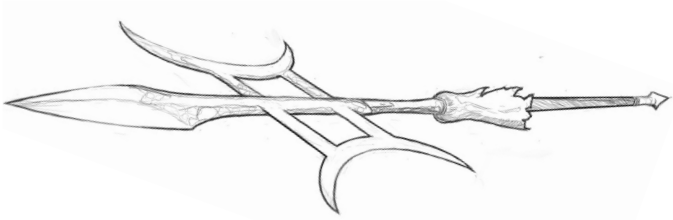
HALBERD: This polearm consists of a 6 foot long shaft with a multi-function head attached. The head is essentially a large crescent shaped axe head with a spike or hook on the reverse and a long spike extending from the top. Langets were often used to attach the head and protect the haft from damage. The

halberd functions were chopping with the axe, using the hook to unhorse opponents or help pin them and the point could be used similar to a spear in stopping attacks. The axe blade is typically 8 inches long, the spike atop is up to 14 inches long and the reverse hook is extends several inches from the shaft. Overall the weapon averages 7'3" in length and weighs around 10.1lbs. The halberd originated in Europe.

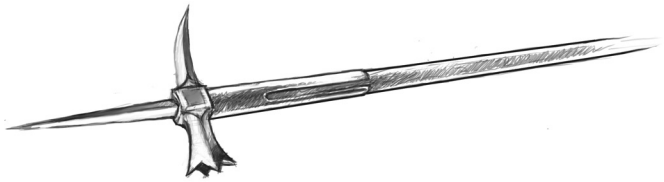


HOOK: This weapon consists of a 6 foot long haft with a hook attached at the top. The hook is pronounced, narrow and unsharpened though has a sharp point. The hook is about 1 foot in length before the bend. It is used primarily to dismount troops or pull at armor. Its overall length is 7 feet and weighs about 3.2lbs. (See Billhook)

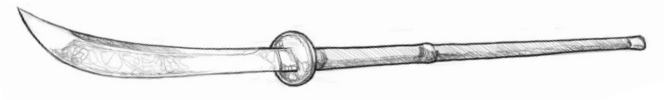
JI (Chinese halberd, Fang tian hua ji): This polearm has a 6 foot hardwood shaft topped by a double edged spear head. A crescent shaped blade extends out from the base of either side of the spear head. Crescent's bellies face outward and are attached by two arms. The ji can be used in thrusting attacks and chopping motions. It is also designed to enable the user to dismount opponents. The overall length of the weapon is about 6 feet. It weighs roughly 4.8lbs. The weapon originates in China.



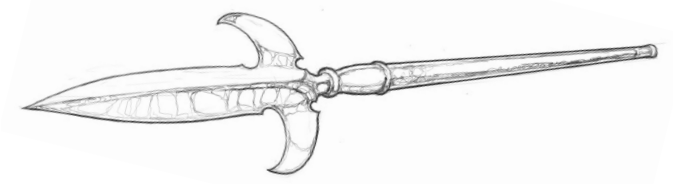
LUCERNE HAMMER: The weapon consisted of a 7 foot long haft with a head attached. The head consists of a 3-4 pronged hammer with 1-3 spikes on its reverse and 12 inch long spike on the top. The overall length of the weapon it about 8 feet and it weighs about 7.6lbs. It originates in central Europe.



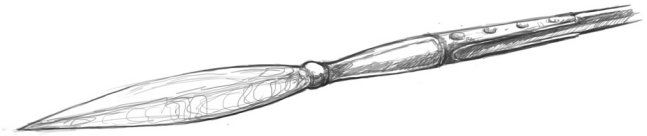
NAGINATA: This polearm consists of a long shaft about 6 feet long topped with a 2 foot blade. The blade is straight until the end where it curves outward precipitously at a 45 degree angle. The outside of the blade is sharpened and it has a false edge. Unlike many polearms, the nagainate's center of mass is at the center of the shaft. This gives the weapon ease of control for broad arcing swings. It is in fact, designed with that in mind. It can chop, slash and hook effectively. It is approximately 7 feet long and weighs about 1.5lbs.



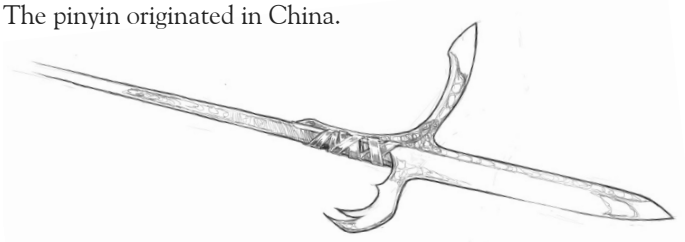
PARTIZAN: This weapon consisted of a long shaft with a double edged, leaf shaped blade attached to the top. Extending from the base of the head is a half-moon shaped hook. The weapon is designed to be use with both hands for thrusting and cutting attacks. The protrusions on the side served to help the wielder parry blows. The partizan is approximately 6 feet long with a 12 inch blade affixed to the top. It weighs about 4.9lbs.



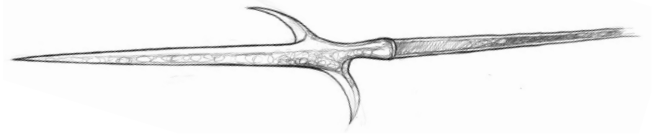
PIKE: The pike is essentially a very long spear. It consists of a long shaft with a metal spear head attached. The head cold be up to 12 inches long and often had a short cross at the base of the head to prevent the weapon penetrating too deeply. The pike could stretch in length anywhere from 10 feet to 25 feet and could weigh anywhere between 5 and 15 pounds. The pike is primarily used in mass combat but shorter versions could be used effectively for melee. Its main advantage is reach.



PINYIN (dagger axe): This polearm consists of a 5 foot shaft with a broad, dagger-like blade attached perpendicular to the shaft. The blade is double edged, broad and tapers to rounded point. The blade also rides down the shaft at for several inches. The blade is usually about 8 inches long. It is 5 feet in overall length and weighs about 2.6lbs. It is used in chopping motions. The pinyin originated in China.

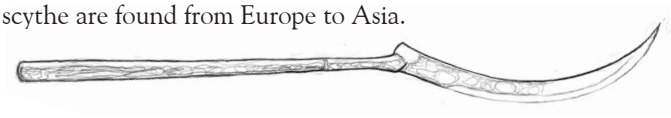


RANSEUR: This polearm consists of a long shaft with a spear head attached to it. At the base of the head extend two upwardly curved blades similar to a crescent. The blades were not generally sharpened. The spear head tapers smoothly to an acute point. The weapon is designed for thrusting and the crescent shaped attachment for trapping opponent's weapons and then disarming them. The shaft is about 6 feet long and the blade about 1 foot long with an overall length of 7 feet. It weighs about 6lbs. Similiar weapons can be found throughout Europe, the middle east and Asia.

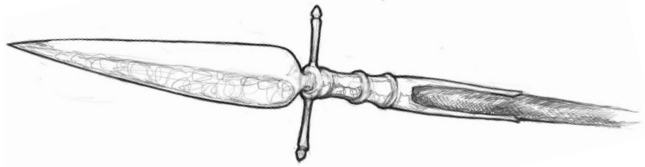


SCYTHE, WAR: This weapon is a modified farmer's scythe. It consists of a long shaft with a curved blade attached to the top. The blade is about 26 inches long with a pronounced reverse

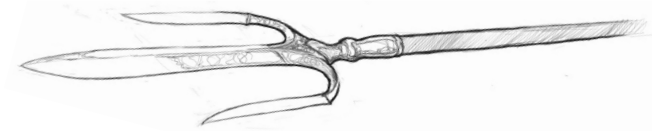
and sharpened belly. The shaft is about 5 feet long giving it an overall length of 7 feet. It weighed about 9lbs. It is designed for chopping and even thrusting attacks. Modified versions of the scythe are found from Europe to Asia.



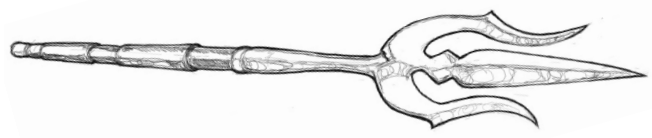
SPONTOON (HALF-PIKE): This weapon consists of a 6 foot long shaft with a double edge blade attached to the top. At the base of the blade is another crescent shaped blade extending out. The tips of the crescent pointed up and the belly is sharpened. The weapon is used similar to a pike though is more easily maneuvered due to its shorter length. The blade length is approximately 12 inches making the overall length of the weapon 7 feet. It weighs about 9.8lbs. It originated in Italy.



TRIDENT: The trident is a polearm with a 5 foot shaft and a head with three prongs ending in point or spear tips attached to the top. The trident measures 6 feet overall and weighs about 4.5lbs. It is intended to be used with both hands though can be used as a spear with one hand for thrusting motions.



TRISHULA: As well as a holy symbol, it is believed this may have been used as a weapon. The trishula is a trident with wavy cutting blades in lieu of spikes or prongs. The haft is up to 5 feet in length and the blades, usually the same length, comprise another 18 inches for an overall length of 6'5". The trishula weighs about 4.2lbs and is intended to be used with both hands. It is designed for thrusting, pinning an opponent and disarming. The trishula orginates in India.



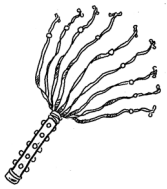
VOULGE: This is a seven foot long pole with a cleaver-like blade mounted at one end. It weighs about 6 lbs.

RARE/UNCLASSIFIED/UNUSUAL WEAPONS

Many weapons do not easily fall into a category, ranging from brass knuckles meteor hammer. These weapons were developed for very specific purposes.

BRASS KNUCKLES: This is a simple weapon used for close quarter melee. It consists of a piece of metal forged to wrap around the knuckles with a curved palm grip. Brass knuckles focus energy more than a fist and add significant tissue damage while taking the energy of the blow and transferring it to the palm. Brass knuckles and their variants can be found throughout much of the world. It fits in the palm and weighs about 8oz.

BRASS KNUCKLES, SPIKED: This is a simple weapon used for close quarter melee. It consists of a piece of metal forged to wrap around the knuckles with a curved palm grip. Short spikes are added to the rings wrapping the knuckles. Brass knuckles focus energy more than a fist and add significant tissue damage while taking the energy of the blow and transferring it to the palm. It fits in the palm and weighs about 8z.



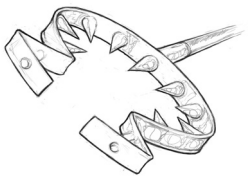
CAT-O-NINE TAILS: This 'weapon' is a short whip with numerous tails. The whip is constructed of leather or cotton thongs. It was primarily used for punishment and not in combat. It delivers small slicing cuts. It is about 3 feet long and weighs about 6oz.

CESTUS: This is a series of leather thongs wrapped tightly around the palm, knuckle and wrist to strengthen a blow from a fist and protect the hand and wrist. It could be filled with metal plates for added damage. This is effectively a light boxing glove so offers little in C&C terms to combat unless filled with metal plates. It was common in Greek fighting events.

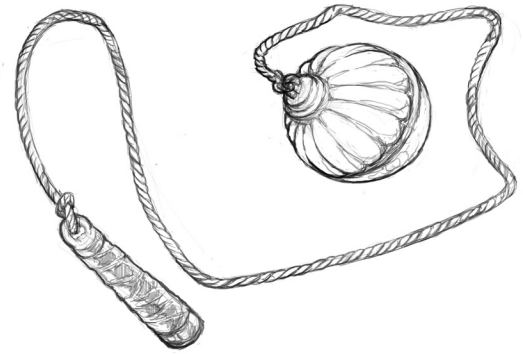
GAUNTLET, KNUCKLED: The gauntlet is a piece of armor, like a metal glove. Some gauntlets had brass knuckles built into them and could be used as a weapon (otherwise too much damage could occur to the hand while punching an opponent). They weigh about 1.2lbs.

GAUNTLET, SPIKED: The gauntlet is a piece of armor, like a metal glove. Some gauntlets had brass knuckles built into them and spikes added to the glove above the knuckle and could be used as a weapon (otherwise too much damage could occur to the hand while punching an opponent). They weigh about 1.4lbs.

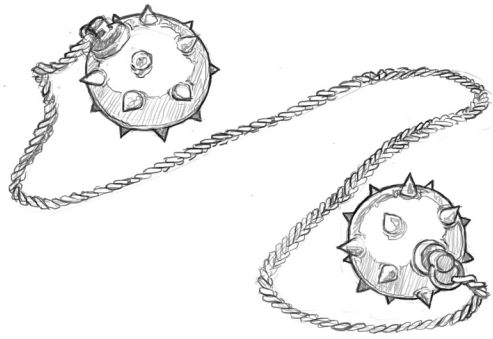
MAN CATCHER: This unusual weapon is designed to catch opponents, especially those on horseback, and pin them without causing too much damage in the process. The weapon consists of a long haft about 5 feet in length to the top of which is attached a metal semi-circlular prong. To the end of each prong is another attachment that spring back or locks back once a victim is wrapped in the prongs. This effectively captures whoever is locked inside. The interior prongs may or may not have spikes. They were used to keep the captured person from moving too much rather than cause damage (though doubtless that occurred). The device is 5-6 feet in length and weighs approximately 6lbs.



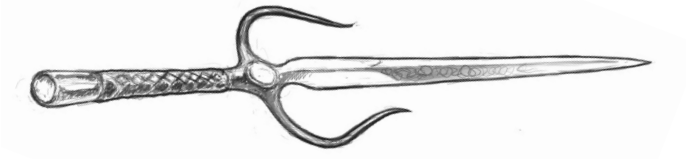
METEOR HAMMER: This unusual weapon is basically a heavy metal ball attached to a chain. It is used by swinging the ball around to create speed and then releasing the ball to strike an opponent. The user's body often acts as the fulcrum for the attack. It takes considerable training to use this weapon effectively. It is very easily concealed. It weighs around 2lbs and the chain reaches up to 8 feet in length. Rope versions can have a length of up to 20 feet with no appreciable weight change.



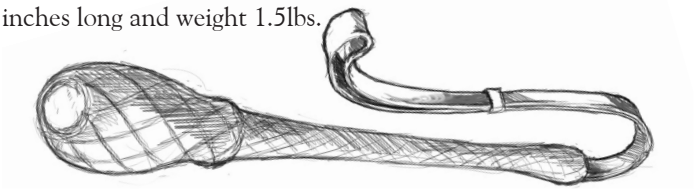
METEOR HAMMER, DUAL: This unusual weapon is basically a length of chain with two heavy metal balls attached to the ends. It is used by swinging the balls around to create speed and then releasing the ball to strike an opponent. The user's body often acts as the fulcrum for the attack. It takes considerable training to use this weapon effectively. It is very easily concealed. It weighs around 3lbs and the chain reaches up to 8 feet in length. Rope versions can have a length of up to 20 feet with no appreciable weight change.



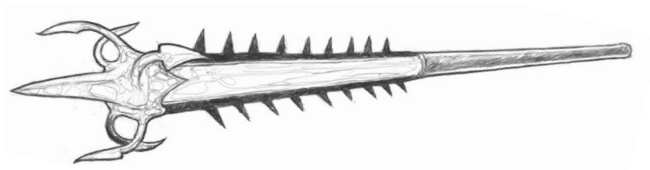
SAI (TEKPI, KABANG): The sai is a short blunt metal baton with two prongs extending upwards from either side of the baton. These prongs vary in length but are generally no more than 1/10th the length of the central prong. This weapon is primarily used for parrying but jabbing attacks are possible. The sai is approximately 24 inches long and weighs about 2.8lbs. Its variants can be found throughout southeast Asia.



SAP: This weapon consists of a flattened leather exterior with the interior end being fill metal or some other heavy material and the lower half with pliant metal, wood or even just tightly bound leather. The intent it to hit with the flattened heavy end while the bendable portion provides more force when used in a whipping motion. It functions to produce non-lethal damage in close quarters combat. The sap is usually about 12 inches long and weight 1.5lbs.



SLEEVE TANGLER (SODE): This unusual weapon consists of a 7 foot long shaft with a 3 foot long sleeve of barbs placed over the end. Affixed on top of the sleeve tangler is a flower of hooks resembling large fish hooks. The weapon is designed to tangle up in loose fitting clothing and immobilize a victim while doing little harm. It weighs approximately 5lbs.



WHIP (BULLWHIP): The whip is a braid of leather, 10-15 feet in length, thick at one held and growing thin at the other. The thick end is held and the thin end used to strike the foe. The damage is minor, but very painful. It is commonly used for punishment or intimidation.

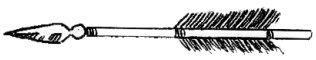
MISSILE OR THROWN WEAPONS

Though bows and spears are generally considered missile weapons, some items, simple in design, but deadly in intent fall into that category. These throwing sticks were carefully weighted and balanced to allow for the greatest impact at the furthest range.

BLOWPIPE: This is a slender, hollow tube, anywhere from 3 to 6 feet long. A small dart is placed within, and the wielder blows quickly into one to launch the dart at the target. The dart itself is tiny and causes little damage, but is usually tipped with poison. It is mostly used to hunt small game.

BOLAS: The bola consist of two or three weights, about 1lb. each, attached to the ends of 3 to 4 foot long cords, which are connected at the nether end. It is designed to be thrown at a target in order to entangle its limbs.

DART (PLUMBATAE): The dart is a smaller (about a foot long) version of the javelin. It weighs about half a pound, and is sometimes poisoned.

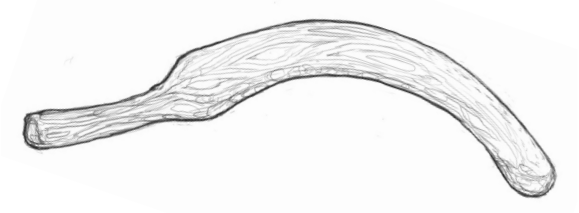


HARPOON: The harpoon is a heavy spear primarily used for hunting whales. It has a barbed head, which is designed to stick in the target, and a rope or cable attached to pull the target in. It is about 7 ft long and weighs 4 lbs.

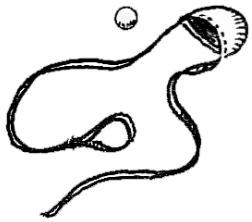
JAVELIN: This is a slender spear specifically intended to be thrown. The weight of the javelin is at the point, to bring more force to bear versus armor. It is about 4 ft long and weighs 2lbs.

PILUM: This heavy javelin was used by the Roman armies. It weighs 1.5 lbs and is 5 ft long. It was intentionally designed to bend on its first strike, rendering it useless to the enemy.

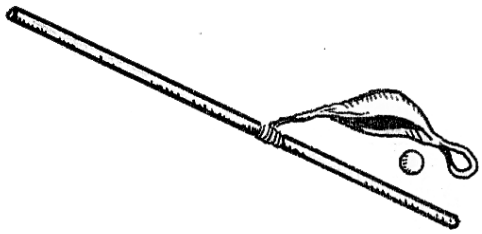
SKULL CRUSHER: These throwing sticks are about 2'6' long and weigh roughly 1lbs. Their design is such that one end is thicker than the other. The intent is to hit with the thickened end. They travel with enough force to crush the skull of small prey but require somewhat more skill than the common throwing stick.



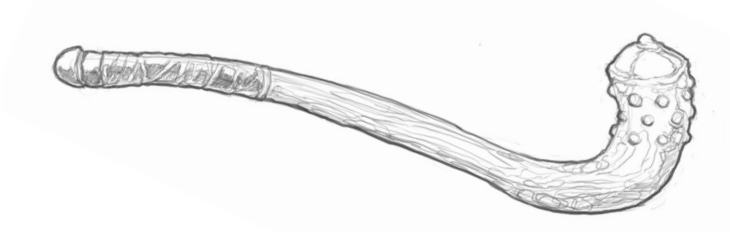
SLING: This is a small, oblong cup of leather with a cord attached to each end. A stone or bullet is placed in the cup, and it is held by the other ends of the cords and spun in order to launch the stone at a target.



STAFF SLING: The staff sling is a thick stick 4-5 ft long with a sling attached to on end. A heavy stone or metal ball is placed in the sling and then the stick is swung, launching the stone at the target.



THROWING STICK: Throwing sticks come in all manner of shapes and sizes. These are pieces of wood, carved and shaped to particular designs, to be thrown at opponents. They were common for hunting and could be used for combat. They measure about 2'6' and weigh roughly 1lbs. They are generally ground smooth with dull ends and travel end over end. They inflict concussive damage.



THE BOW

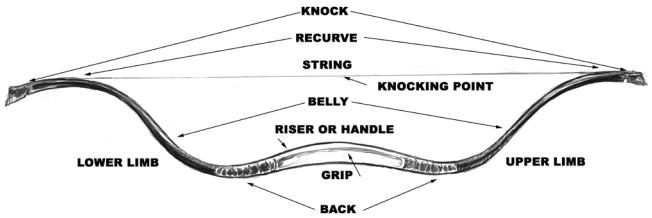
The oldest depiction of a person using a bow and arrow dates back to at least 20,000 years ago. Its likely the use of the bow predates that cave drawing. As with many early weapons, the bow would have been used both for hunting and for warfare. Little is known about the earliest bows as the only thing which remains are small stone or bone arrowheads. The oldest bows that we know of are roughly 10,000 years old. The use of bows spread throughout the world (excepting Australia) fairly quickly and developed fairly rapidly as well.

At its core, the bow is a device used to propel a tiny spear, what we call an arrow. The bow consists of a pliable limb the ends of which are connected by a string. Then, one hand holds the limb while the arrow is nocked to the string with the other. The string and arrow are pulled and then released to shoot the arrow.

In simple terms, the power of a bow is in its draw weight. The draw weight is the force required to hold the string stationary at full draw. This is expressed in pounds. As a general rule, the higher the draw weight, the higher the velocity the arrow can be propelled and the further it can fly and the more energy it carries. Interestingly, the actual draw weight of a bow is dependent upon the strength of the archer. It requires a fairly strong person to pull a draw strength of 70lbs and it takes a really strong person to pull a draw strength of 120lbs. The type of arrow used with the bow is also important as heavier and lighter arrows effect the speed with the arrow travels and the force of impact.

The type of wood used to construct the bow, as well as the method of construction, has a massive impact on the capacity of the limbs to be pulled without breaking and retain its original shape. Retention of the limbs original shape is very important. The 'looser' the limbs become the lower the draw weight. The material used for construction of the bow string also effects the capacity of the draw weight as it limits the pull before snapping and increases or decreases in elasticity effecting the arrow's flight and power.

Bow Morphology



Upper limb: The upper, wooden portion of the bow.

Lower limb: The lower, wooden portion of the bow.

Riser or Handle: The central wooden portion of the bow.

Grip: Where the bow is held.

Back: The wood portion of the bow which faces away from the archer.

Belly: The portion of the bow facing both the archer and the string.

String: The string which connects the ends of the bow.

Recurve: The end portion of the upper and lower limb which curves away from the belly of the bow and over the back.

Nocking point: The optimal point to place the arrow on the string, usually marked on the string.

Nock: The place where the string is attached to the limbs of the bow.

TYPES OF BOWS

The classification of bows and arrows tends to be rather loose or lacks specificity. As such, for this discussion, several types of bows are presented. The classification follows an acceptable guideline but recall, ultimately this is how I am classifying the bows for this discussion and it is by no means an authoritative guide.

SELF-BOWS: The limbs of these bows are made from a single piece of wood or two pieces of wood strapped together at the handle. A self-bow can be constructed in a day if the materials to make it are at hand. Many types of wood are used to make self-bows. The typical draw weight of a self-bow does not exceed 70lbs. That said, the self-bow can reach draw weights of 180lbs or more if properly constructed and the correct wood is available. They can range in size from two feet to six feet. Higher draw weights require large bows.

COMPOSITE BOWS: These bows are constructed of different materials such as bone, wood and leather which are then glued and strapped together to form the bow. Composite bows can take a week or more to make if all the materials are available. Depending on the bow and the manner in which the materials are combined this process can take much longer. The process also take much more skill than a self-bow. Composite bows can be made to have draw weights of 180lbs or more if properly constructed. Unlike the self-bow, these bows can be small and still retain their draw weight. The higher draw weights in composite bows require recurve and reflex designs.

Within these two categories, there are several types of bows.

STRAIGHT BOW: The straight bow has little or no curve when unstrung and a slight or pronounced 'D' curve when strung. As a general rule, the longer the bow, the greater the draw weight. These bows tend to be sturdy and long lasting.

RECURVE BOW: On this bow the tips of the arms curl away from the archer when the bow is strung or not. These bows can be small and still retain their draw weight as the tension is contained in the curve.

REFLEX BOW: The limbs of these bows bend entirely away from the archer when unstrung. The bend can be so dramatic as to form a near perfect circle in the direction away from the belly. These bows can be small and still retain their draw weight.

DECURVE BOW: The limbs of this bow curl inward toward the belly when unstrung or strung. These are rare bows and are usually only made in areas where material are very poor or scant. They tend to have very low draw weights.

Durability

Bows, whether self-bows or composite bows, on the whole do not have great durability. The material used to make the bow, the expertise of the bowyer and the upkeep of the bow all play a role in the bow's durability. The constant stresses of combat require constant work with the bow. The elasticity of the parts making up the bow tend to decrease with time and use. That elasticity is extremely important as that is where the energy is stored.

Self-bows tend to have much greater durability than composite bows as they are composed of a single piece of wood. Excessive use or pulling beyond its expected draw length all effect whether or not the bow lasts very long. Typically, when a bow breaks, one of the limbs has reached its stress point and begins a slow or dramatic splintering. The string can break as well.

Composite bows, being made of several types of material glued or strung together, are less durable than self-bows. Water, especially submersion, can quickly cause a composite bow to begin to come unglued. Even excessive humidity causes a more rapid deterioration of the bows. As with self-bows, excessive draw length or use causes deterioration as well. The string can break as well.

Utility

Bows were used for two major activities; hunting and warfare. Bows and their arrows were designed for specific purposes. It is difficult to even summarize these uses as they could be fairly specific. Differing arrows were used to hunt flight birds, boar, burrowing animals, deer, tigers and the whole range in between. There were, of course, generic arrows. Larger arrows and broader tips did more damage but narrow arrows with thin tips or blunted tips worked just as well for smaller game.

As a general rule, any bow with a draw weights of 30lbs to 60lbs is fine for hunting game animals. Higher draw weights were used for rare or larger animals or prey that would be shot at a distance. In most cases, the hunter attempted to get as close as possible to the prey (say under 50 yards) to take a shot. In more open terrain larger bows could be used. These could be either composite bows or self-bows. In forested regions there was a selection for smaller more maneuverable bows. These were often composite bows or smaller self-bows with less draw weight.

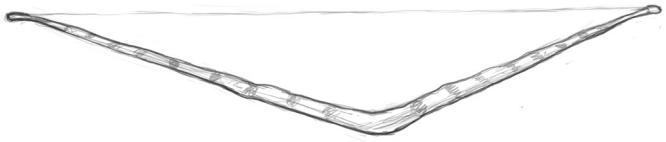
In combat, bows ranged rather widely. Larger self-bows and composite bows were used as well as smaller composite bows. The smaller the self-bow, the closer one had to be to the opponent to have significant effect. Importantly, in the case of war, the arrow design had as great an impact as the bow. Larger broad points dealt more damage but had a reduced chance of breaking through armor. Smaller points, such as the bodkin point, were used to pierce armor more effectively but did less damage. There was a constant evolution of the bow and arrow to maximize its overall effect.

Draw weights for bows used in warfare tended to be higher than those used for hunting. For example the draw weight for an English longbow, it is guessed, could be as high as 180lbs. Anything above 90 lbs is probably useful for war bows as this allows for the use of larger arrows or arrows with broader tips, more force at closer ranges resulting in greater armor penetration and or damaging effect.

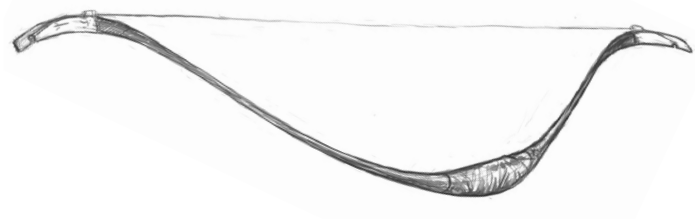
ARCUS I: This is a Roman self-bow with a 'D' shaped cross-section. This bow is made of elm or ash or other suitable material. The bow stands 5 feet unstrung and a little less strung. These bows were powerful and had a draw weight of up to 70lbs and a shaft length of 30 inches. The range is about 600 feet.

ARCUS II: This is a roman composite bow with a rectangular cross-section. These bows are made of wood, horn and bone. The bow stand 3'6' unstrung and 4 feet strung. These bows had a draw weight of 95lbs and a range of 800 feet. The shaft length is about 30 inches.

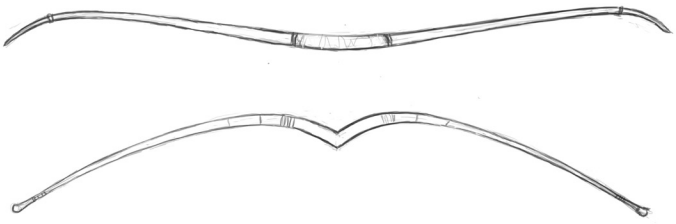
ASSYRIAN ANGULAR BOW: The bow, when strung has a triangular shape. It appears to be a composite bow with a recurve at the tips. Unstrung the bow would take a nearly flat appearance. It is a flatbow made of wood and horn or bone. Unstrung it is 5 feet high and 4 feet strung. It has an average of 40lbs draw weight and a 35 inch shaft length. The range is 400 feet.



ASSYRIAN CURVED BOW: This is self-bow with a slight recurve and a round cross-section. Unstrung it is 4 feet high and strung it is 3'6" high. It has a draw weight of 65lbs and a range of 600 feet. The shaft length is about 32 inches.



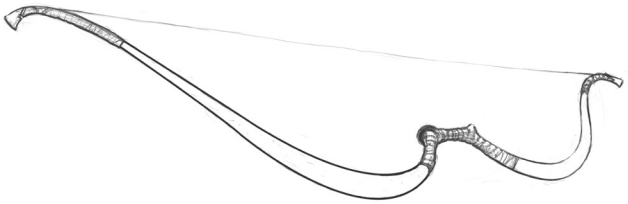
EGYPTIAN I: The most common bow for the Egyptians is a self-bow. These bows were made of wood and had a rounded cross-section. They had a slight inward curve when unstrung and were about 4'6" tall. These bows had a draw weight of about 60lbs and a shaft length of around 32 inches. The range on these bows is about 400 feet.



EGYPTIAN II: This is a composite bow with a slight recurve. The bow had a wood core with bone and sinew for a shell. These bows were difficult to make and the materials were scant so they tend to be more rare than the self-bows. The average height unstrung is 3 feet and 4 feet when strung. The bows have a draw weight of roughly 65lbs and carry a shaft length of around 25 inches. They had an effective range of up to 600 feet. These bows were favored by charioteers.

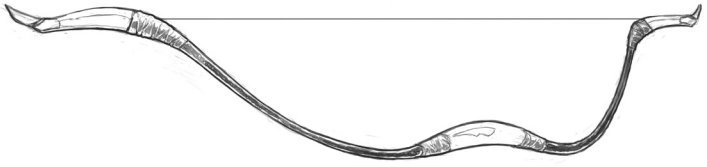
ENGLISH LONGBOW: This is a self-bow constructed of yew wood. The bow is approximately the size of the person using it, averaging 5'6" in height. The bow is round in cross section and when strung has a collapsed 'D' shape. The average length of the shaft for a longbow is 30 inches. The draw weight of the bow is hotly debated, but for this discussion it is placed in the upper end at about 150-180lbs. The maximum range of a long bow is about 1200 feet. Though made famous by the English, this type of longbow was used throughout northern Europe.

GREEK BOW: The bow used by the ancient Greeks is a composite bow made of wood and horn. The bow had a round cross section and a slight recurve. The bow stands about 4'6" unstrung and slightly less when strung. The bow is estimated to have been around a 70lbs draw weight with a 600 foot range. The shaft length is about 28 inches.



GUNGDO: This is a composite reflex bow. It is made with a wood core, horn on the belly and thick wood on the tips of the limbs. It is a flat bow with a rectangular cross-section. The bow's limbs, when unstrung, bend over the back and curl inward towards it. When strung the bow retains a slight recurve. The bow is about 2 feet when unstrung and about 3'6" feet long strung. The average draw weight is 65lbs and the shaft length is about 30 inches. The archers used a thumb ring to release the string and arrow. The bow is designed for mounted use. It has a range of about 600 feet.

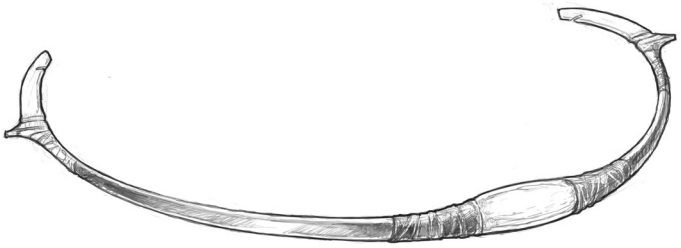
HUN BOW I: This is a composite bow made of wood and horn strips are used on the belly of the bow. The tips of the limbs draw a dramatic 45 degree angle off the recurve when unstrung. Sinew is traditionally used for the string. The hunnish bow is a flatbow and rectangular in cross-section and about 3'6" long unstrung. The average shaft length is about 28 inches. The average draw weight is 35lbs. The bow was used mounted. The expertly crafted bows took up to year to construct and were so valuable they were not interred with the dead as were other weapons.



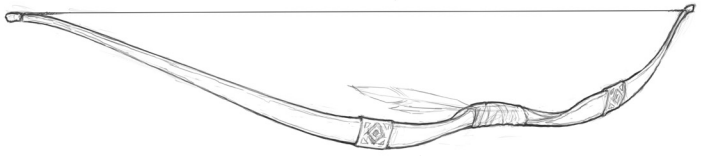
HUN BOW II: This is a composite bow made of wood and horn strips are used on the belly of the bow. The tips of the limbs draw a dramatic 45 degree angle off the recurve when unstrung. Sinew is traditionally used for the string. The hunnish bow is a flatbow and rectangular in cross-section and about 4 feet long unstrung. The average shaft length is about 30 inches. The average draw weight is 50lbs. The bow was used mounted. The expertly crafted bows took up to year to construct and were so valuable they were not interred with the dead as were other weapons.

HUNNISH ASYMMETRIC BOW: The huns were masters of mounted warfare. This bow is a composite recurve bow as the previous bows, being made of wood and horn with a sinew string. However, this bow had a shorter lower limb and lower grip giving it an asymmetric appearance when strung or unstrung. These bows were about 4 feet in length and had a draw weight of 50lbs and a maximum shaft length of around 30 inches. This bow is designed to be used mounted. These are very highly prized bows.

MONGOLIAN BOW: It is undoubted that the Mongols had several different types but for this discussion we are concerned with one type. The Mongolian reflex bow is a composite construction. The use of wood, horn, bone and sinew glued and strung together. When unstrung, the limbs of the bow bend over the back to form a near perfect circle only 2'6" long. When strung, the bow retains a recurve shape and is about 4 feet long. This strung recurve is where the power of the bow reside. The bow can have a draw weight of up to 160lbs, though lesser draw weights are probable. (The capacity of the person to draw the bow is important). The length of the shaft is around 35 inches. These bows are designed to be used mounted. Its range is about 1200 feet.



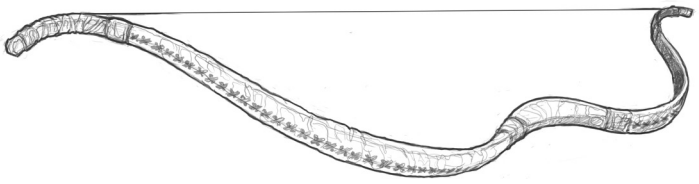
NATIVE AMERICAN FLATBOW: This bow is typical of many native American tribes and groups. This is a self bow with heights that range greatly from a short two foot long bow to five feet long. The flatbow has a rectangular shape in cross-section. The grip is almost always centered or little down the lower limb. Many types of wood could be used to make the flatbow such as maple, hickory or elm, though local material availabilty played



the most important role in material selection. These bows were generally low in draw weight but quite suitable for all the task they were used for. The draw weights range from 10lbs to 60lbs. The range on these bows is up to 400 feet.

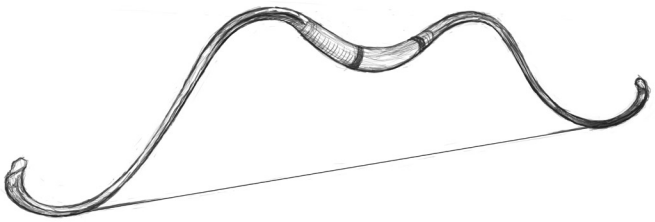
QUING HORN BOW: This is a large composite, recurve bow with a 'D' shaped cross-section. The interior of the bow is wood, bamboo or mulberry, with a horn belly and hide back. This bow has very large ears comprising up to 20% of the arm's length. These are large and heavy bows, standing 5 feet tall or more when strung. They are not designed for long range shots or light arrows. The qing bow is designed to shoot heavy, long arrows with large arrowheads for big game hunting. A thumb ring is used to release the arrow. The arrows can be 40 inches or more in length. The qing bow averages a 100lbs draw weight and has an 800 foot range though higher and lower draw weights can be made.

SCYTHIAN RECURVE I: This is a composite bow with a slight recurve. It is made of wood, horn and leather that are glued and strapped together. It is rectangular in cross section. The bow averages 4 feet in length and has a draw weight of about 35lbs. The maximum range of the bow is about 400 feet. This bow can be used mounted.



SCYTHIAN RECURVE II: This is a composite bow with a slight recurve. It is made of wood, horn and leather that are glued and strapped together. It is rectangular in cross section. The bow averages 3 feet in length and has a draw weight of about 30lbs. The maximum range of the bow is about 200 feet. This Scythian bow is used for mounted warfare.

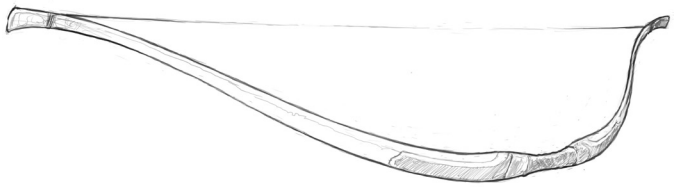
SCYTHIAN SMALLBOW: This is a composite bow with a slight recurve. It is made of wood, horn and leather that are glued and strapped together. It is rectangular in cross section. The bow averages 2 feet in length and has a draw weight of about 20lbs. The maximum range of the bow is about 200 feet. This Scythian bow is used for mounted and dismounted warfare.



SMALL BOW, COMPOSITE: This is a category of my own making. Some of the earliest bows that we have evidence for are smaller in size. These bows tend to be under 3 feet in height when strung and slightly smaller when unstrung. They are made of wood, horn and other suitable materials and, quite early on, had a recurve. The draw weight would vary, as they do with any bow category, but for this discussion the draw weight is 40lbs with a draw length of 25 inches.

TURKISH BOW: This is a composite reflex bow. It is made with a wood core, horn on the belly and bone on the tips of the limbs. It is a flat bow with a rectangular cross-section. The bow's limbs, when unstrung, bend over the back and curl inward towards it. When strung the bow retains a slight recurve. The bow is about 2'6" when unstrung and about 4 feet long strung. The average draw weight is 145lbs and the shaft length is about 30 inches. The Turkish archers used a thumb ring to release the string and arrow. They also use a slender piece of funnel shaped wood attached to the forearm to rest arrows in to increase the draw length in case the arrows were too short for normal firing. The bow is designed for mounted use.

VIKING BOW I: As with everything Viking related, the Viking bow seems very large. They average 6 feet in length unstrung and 5'6" strung. These are straight self-bows made of ash, elm or other suitable material. The shaft length on these bows is about 32 inch and the draw weight is about 100lbs. The range is about 800 feet.



VIKING BOW II: This is a composite recurve bow 4'6" tall when strung and up to half that size unstrung. The bow had significant ears. It was constructed of elm or other suitable material with horn on the belly and leather on the back. This bow has a draw weight of about 121 lbs and a range of 1000 feet.

THE ARROW

Arrows are designed for a specific purposes. The head may take many forms, each with a unique use. The shaft and the fletching are very important to the arrow as well. A low short fletching enables longer flight while high and long fletching increase stability. Different heads and shafts require different fletching to maximize use. Feathers from different birds have differing effects on the flight of the arrow as well. The shaft, comprised of a single type of wood or several types of wood, is shaped to increase, decrease or modify the flight of the arrow and penetration power of the head.Several arrow types are described below. The arrow's shafts, heads and fletching were designed with a purpose. Generally speaking there are arrows designed for battle, hunting and then some specialty arrows.

The design of the arrow has a great impact on the effectiveness and utility of the system as well. The arrow has the following parts.

Head: The portion of the arrow intended to strike the target

Shaft: A long cylindrical piece of wood to which the head and fletching are attached.

Fletching: Feathers or other suitable material used to stabilize an arrow in flight.

Nock: A notch at the back of the arrow to enable it to be placed firmly on the bow string.

PYEONJEON: This is a small bolt placed inside a wooden shaft and fired from a bow. The shaft increases the range of increment of the bow by 200 feet. It also allows large bows to fire these small bolts.

WHISTLING ARROW: This is an arrow which whistles after release. This is usually accomplished by adding a small hollow piece of wood to the arrow underneath the head, making the head with hollow portion or, it seems, in thousands of other manners. The intent is startle game and causes them to sit still while the arrow moves through the air. Whistling arrows were also designed for communication on the battlefield or otherwise. They were also designed for specific purpose such as waking up tigers in the bush.

FLIGHT ARROW: These arrows are designed for flight. They are light weight, with narrows heads, low and long fletching. These arrows increase the effective range of a bow by 200 feet. The flight arrow is intended for range and not damage.

BODKIN: The bodkin point is a slender metal spike-like arrowhead. It can range up to 5 inches in length. Its earliest use has been noted amongst the Vikings. The bodkin is designed for long flight and penetration of mail and lesser armors. Later, it gained repute for penetrating plate armors. However, the much better made plate armors of the latter Middle Ages seemed to be virtually impervious to the bodkin point.

BROADHEAD: This type of arrowhead is heavy and wide with two or more sharpened wings. These can measure about 3" in length. The arrows are intended to cause maximum damage upon impact. The arrows are heavy and less likely to penetrate armor. Broadheads are found throughout the world and are favored for hunting and in battle against unarmored or lightly armored opponents.

SWALLOWTAIL: The swallowtail is similar to a broadhead. This is a heavy head with two or more wings. The wings extend down much further than a broadhead and can float outward at the ends of those wings as well. These are intended for larger game and maximizing damage. This comes at a cost in range. The swallow tail must be pushed through the wound to be removed if total penetration is accomplished.

FORKED HUNTING: This arrow is used for smaller ground game such as rabbit. The unusual shape of the head is actually to prevent the arrow from burrowing into the ground or, because it spins, catching onto feathers and by catching limbs, preventing the arrow from disappearing in the bush.

THE CROSSBOW

Much like its cousin, the bow, the crossbow underwent many improvements during its lengthy battlefield presence. From a simple hand pulled draw, to a complicated cranequin mechanism. Early crossbows possessed simple wood bows that were relatively easy to pull. Later, stouter wood, horned bows and even steel bows made the crossbow impossible to pull by hand.

Crossbows can shoot both bullets and bolts. The bullets are generally small, smooth stones designed for the crossbow; they do not consist of stones picked up off the ground.

Morphology

Stirrup: A brace for the foot, allowing the user to reload.

Bridle: The sinew used to secure the bow to the stock.

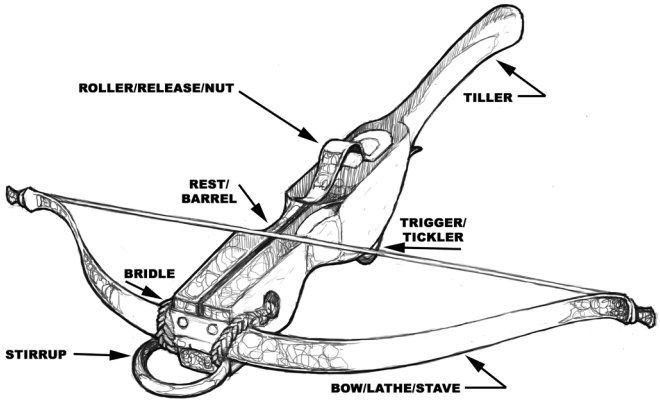
Tiller: The back part of the stock where the crossbowman holds the crossbow.

Rest/Barrel: A groove cut into the stock for the bolt.

Bow/Lathe/Stave: The bow itself, attached to the barrel or rest.

Trigger/Tickler: The mechanism for releasing the tension on a cocked crossbow.

Roller/Release/Nut: The device used to secure the loaded crossbow. When the trigger is pulled the bolt is released.



Methods of Pulling the Crossbow

Hand: Simple crossbows have no device to help pull the bow-string. The fore-end of the stock and crossbow are set upon the ground, the stock braced against the stomach, feet upon the bow to hold the bow down and the bow-string pulled to the release.

Stirrup: A metal bracket is set at the fore-end of the stock, allowing the crossbowmen to brace the bow with a single foot while pulling the bow-string to the release.

Cord and Pulley: This method was adapted when the bow became too stout to pull by arm muscles alone. The crossbow was braced by hand or stirrup on the ground. A hook was used to se-

cure a small rope or cord to the crossbowman's belt. The cord was threaded through a pulley attached to the bow-string and to the stock. The bow-string was pulled to the release by standing up.

Claw and Belt: The claw consists of a long iron hook attached to the crossbowman's belt. After bracing the bow on the ground with the stirrup, the crossbowman bends, hooks the claw on the bow-string and stands upright, pulling the bow-string to the release.

Screw and Handle: The stock is extended and broadened, allowing a small screw to be placed in it. The screw is attached to a hook on the bow and a handle on the end of the stock on the screw. Turning the handle turns the screw and pulls the bow-string to the release.

Goat Foot Lever: A later addition to bending the crossbow, the goat foot lever was a simple level system set onto the stock. The lever consisted of two handles separated by a small pin, slightly wider than the stock, and a hinge, making something of a fork. Two claws were set in the pin. The lever was braced on the stock, the claws set on the string and the fork of the lever system over the trigger mechanism, the lever itself extended above the bow. Pulling the lever back on its hinge pulled the bow-string to its release.

Windlass and Ropes: Pulley systems, attached to either side of the stock and connected to the bow-string, allowed for extremely powerful crossbows. The pulleys were attached to small cords on either side of the stock and to a crank at the end of the crossbow. The crossbow was braced on the ground and the crank turned, which drew the cords back through the pulley to coil around a pin in the cranking mechanism, until the bow-string entered the release.

Cranequin: A vey slow method of bending the bow of a crossbow, the cranequin involved a gear set in a housing that pulled across a notched metal bar set in the stock. The gear itself was set in a small case that was attached to the bow-string with two claws. The gear was turned by a handle, which pulled the case back across the notched rod. The notches allowed the user to adjust the power of the bow. It was not generally used in warfare for its ponderously slow crank.

CROSSBOWS

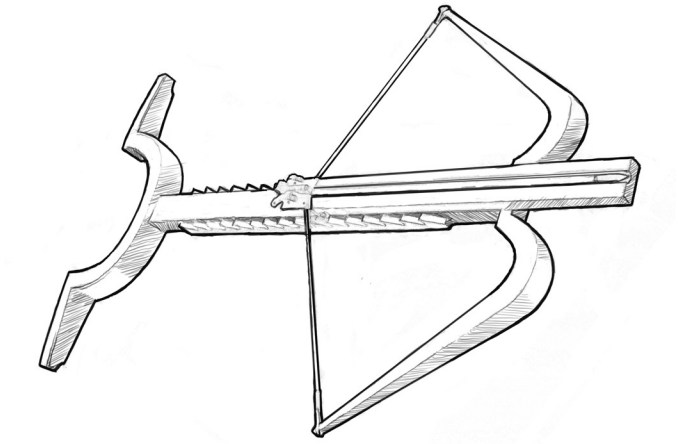
The crossbow types are listed by the construction of their bow, whether wooden, composite or steel. Wooden bows are the most simple, later innovations led to composite crossbows and by the later medieval period the steel bow was commonly used in constructions. Each entry covers both smaller (light) and larger (heavy) crossbows.

WOODEN CROSSBOW: The bow is made of wood, and secured to the stock with cord, twine or catgut. The release is generally a simple socket set into the stock and the lighter versions were loaded by hand pulling or a stirrup, heavier versions required cord and pulley, claw and belt, or even a lever system. The range of the wooden crossbow depends on the size of the bow itself, generally from 240 feet to 360 feet. The wooden crossbow suffers from a number of issues including breakage and warping of the bow.

COMPOSITE CROSSBOW: These crossbows are similar to the wooden crossbow, however the bow is made of thin strips of bone, horn, yew and/or tendon glued together. The composite nature of the bow made it lighter than a wooden or steel crossbow, but also made it more durable and less likely to warp. The composite crossbow required more strength to pull it, generally needing claw and belt or cord and pulley, if not a lever system. Their range was greater than simple wooden bows, from 400 feet for lighter versions to 800 feet for larger.

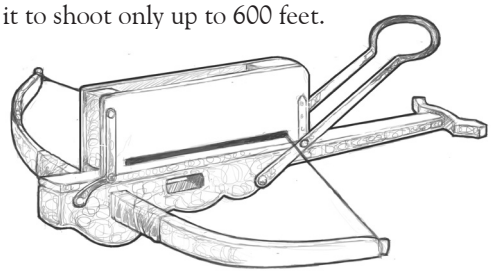
STEEL-BOW CROSSBOW: The bow in these crossbows is constructed of steel, giving the crossbow extraordinary durability as well as a much greater range. The bow is hard to pull and requires a claw and belt for the lighter versions, but a goat's lever, windlass or cranequin to pull and set the bow-string in the release. They have a much greater range, even the smaller versions reaching 900 feet, larger steel-bow crossbows reaching 1100 feet. They are heavy as well, ranging upwards to 15 lbs in the larger versions of the crossbow.

GASTRAPHETES: This Greek crossbow approached the problem of pulling the bow-string from a different direction. One's foot was placed on the bow and pushed down; this slid the bow down the stock, leaving the bow-string attached to the release. These were large crossbows, ranging up to 3 feet in length. They were very powerful hitting a range of 700 feet.



PISTOL CROSSBOW: This small crossbow is generally made of wood or composite materials as the necessary pull systems for steel crossbows are too cumbersome. They have a shorter range, usually only reaching up to 120 feet. The bow-string is pulled to the release by hand.

REPEATING CROSSBOW: The cumbersome repeating crossbow was almost always made of wood or composite material. A magazine, holding up to 10 bolts was built into the stock around the lever system for pulling the bow-string. The lever was pushed forward which pulled the string back to the release. As the lever was pulled back the magazine came to rest on the stock, allowing the next bolt to rest in the groove. A small wooden trigger fired the crossbow. The repeating crossbow has a tremendous rate of fire, but its small size and wooden frame detract from its range, allowing it to shoot only up to 600 feet.



TABLES

ARMOR

Name	cost	AC	special
Padded, jerkin	5gp	+1	
Padded, suit	10gp	+1	
Padded, barding horse	20gp	+1	
Aketon, jerkin	8gp	+1	+1 applies if worn under armor
Aketon, suit	15gp	+1	+1 applies if worn under armor
Aketon, barding horse	25gp	+1	+1 applies if worn under armor
Breastplate, bronze	95gp	+4	20lbs
Breastplate, iron	300gp	+5	30lbs
Gambeson, jerkin	8gp	0	+1 AC if worn over armor
Gambeson, suit	13gp	0	+1 AC if worn over armor
Greave or bracer, leather	5gp	0	+1 AC for arm or leg*
Greave or bracer, bronze	25gp	0	+3 AC for arm or leg*
Greave or bracer, Iron	50gp	0	+4 AC for arm or leg*
Gambeson, barding horse	25gp	0	+1 AC if worn over armor
Leather, light	5gp	+1	
Leather suit	10gp	+1	
Leather coat	7gp	+1	
Leather with aketon	25gp	+2	
Cuir Bouille	30gp	+2	
Lamellar, wood or bone	40gp	+2	
Lamellar, wood/bone with aketon	55gp	+3	
Cuir Bouille, suit with aketon	45gp	+4	
Hide	50gp	+3	
Brigandine	85gp	+4	
Hide with aketon	55gp	+4	
Studded leather	25gp	+3	
Studded leather with aketon	40gp	+4	
Ring mail	30gp	+3	
Lamellar, metal	50gp	+4	
Lamellar metal with aketon	65gp	+5	
Scale, leather, bone, wood	20gp	+3	
Scale, leather with aketon	35gp	+4	
Scale, metal	50gp	+4	
Scale, metal with aketon	65gp	+5	
Banded Mail	250gp	+6	
Birnie	75gp	+3	
Byrnie	100gp	+4	
Mail hauberk	150gp	+5	
Full chain suit	200gp	+6	
Jazerant	150gp	+5	
Laminar, leather	55gp	+3	
Laminar, metal	200gp	+5	
Coat of Plates	100gp	+5	
Plate and Mail	600gp	+7	
Plate, full	1000gp	+8	
Plate, gothic	1750gp	+8	
Splint, leather	80gp	+4	
Splint, metal	200gp	+6	
Greek ensemble, bronze	120gp	+5	
Greek ensemble, iron	230gp	+6	
Roman ensemble, plumata	240gp	+6	
Roman ensemble. lorica	650 gp	+7	

HELMETS

Name	cost	AC*	special
Armet	10gp	+6	-3 perception**
Arming Cap	4gp	+1	
Attic Helm	10gp	+4	
Coif, mail	15gp	+4	
Conical Helm	7gp	+3	
Corinthian Helm	5gp	+6	-2 perception
Barbutte	7gp	+5	-2 perception
Bassinet	15gp	+6	-4 perception**
Burgonet	10gp	+4	
Close Helm	15gp	+6	-3 perception**
Dog-faced bassinet	15gp	+6	-3 perception**
Galea (Gallic helm)	10gp	+4	
Great Helm	20gp	+7	-4 perception
Kabuto	25gp	+3	add. +2 with mask
Kettle Hat	7gp	+2	
Kulah Khud	10gp	+3	
Misiurka	12gp	+5	
Morion Helm	15gp	+3	
Polish Hussar	20gp	+5	
Pot-helm	5gp	+2	
Sassanian	15gp	+5	-2 perception
Spangenhelm	10gp	+4	
Valsgarde Helm	9gp	+4	-1 perception
Sallet	15gp	+6	-3 perception**
War Hat	7gp	+2	
Zischagge	20gp	+5	

* bonus applies to head only; this is *not* in addition to armor bonus

** applies while visor is closed

SHIELDS

Name	cost	size	AC	special
Small, hide	1gp	12”	+1	
Small, wood	3gp	12”	+1	
Small, metal	9gp	12”	+1	
Aspis	25gp	36”	+2	
Buckler	2gp	10”	+1	no value against missile weapons/1 opponent
Dipylon	20gp	36”	+2	
Medium, hide	3gp	16”	+1	
Medium, wood	5gp	16”	+1	
Targe	5gp	16”	+1	2 foes/1-2 Medium, metal +1
Large, hide	5gp	24”	+1	
Heater, wood	5gp	24”	+1	
Adarga	7gp	30”	+1	3 foes/+2vs missile weapons/1-3
Kalasag	5sp	10”	0	+1 versus wooden or stone arrows, thrown items and slings
Large, wood	7gp	24”	+1	
Large, metal	20gp	24”	+1	
Viking	9gp	36”	+2	15lbs trap weapon
Kite Shield	20gp	48”	+3	
Pavis	55gp	64”	+6	
Parma	15gp	36”	+2	
Pelta	20gp	24”	+1	
Target	20gp	24”	+1	
Tower	30gp	48”	+3	
Gothic	20gp	36”	+2	
Round	5gp	18”	+1	
Bilobial	15gp	36”	+2	
Rectangular	10gp	24”	+1	
Tear drop	20gp	48”	+3	
Oval	18gp	36”	+2	

MARTIAL ARTS

	cost	upper strike	lower strike	grapple overbear	
Striking	5 years	1d2	1d3	0	-1/-4/-8 vs light/med/ heavy armor
Wrestling	5 years	1	1	+2 check	-1/-4/-8 vs light/med/ heavy armor
Hybrid	5 years	1d2	1d2	+1 check	-1/-4/-8 vs light/med/ heavy armor

CLUB OR CLUB LIKE

Name	cost	dmg	special
Baculus	5sp	1d3	-1 vs armor, 5ft thrown range
Baggoro	3sp	1d3	-1 vs armor
Baston	1gp	1d2	
Budd	5sp	1d2	
Club	5cp	1d2	-2 versus armor, 5ft thrown range
Cudgel	6sp	1d3	-1 vs armor
Gata			-1 vs armor
Godentag	20gp	1d6+3	-1 vs plate armor
Goedendag	6gp	1d6	double damage when set for charge
Jitte	2gp	1d4	disarm +1, -1 vs armor
Mace, foot round	5gp	1d4	
Mace, foot flanged	8gp	1d6	+1 vs armor
Mace, large round	7gp	1d4+1	
Mace, large flanged	11gp	1d8	+1 vs armor/ +2 vs metal armor
Mace, heavy round	9gp	1d6+1	
Mace, heavy flanged	15gp	1d10	+1 vs armor/ +2 verse metal armor
Maul, battle	9gp	1d8+1	
Morningstar light	6gp	1d5+1	+1 vs armor
Morningstar medium	8gp	2d4	+1 vs armor
Morningstar heavy	10gp	2d4+1	+1 vs armor
Mugdar	5gp	1d6+2	
Staff	5sp	1d6	-1 vs armor
Tambara	4gp	1d3	
Vajra	15gp	1d4	

FLAIL OR FLAIL-LIKE

Name	Cost	dmg	special
Aklys	8sp	1d3	25 foot range, 1 range attk every 2r
Flail (wood, 1 hand)	1sp+5cp	1d2	+1dmg if spiked
Flail (wood, 2 hand)	2sp+8cp	1d3	+1dmg if spiked
Flail (metal, 1 hand)	5gp+5sp	1d4	+2dmg if spiked
Flail (metal, 2 hand)	8gp+8sp	1d6	+2dmg if spiked
Flail, Military, wood 1h	5gp	1d4+1	+1dmg per extra ball
Flail, Military, metal 2h	8gp	1d4+1	+1dmg per extra ball
Flail, Military, wood 1h	10gp	1d6+2	+1dmg per extra ball
Flail, Military, metal 2h	12gp	1d6+2	+1dmg per extra ball
Nunchaku, wood	1gp	1d2	
Nunchaku, metal	3gp	1d4	
Tabak Toyok	7sp	1d2	
Three-sectional-staff	6gp	1d6	disarm or entangle attack

KNIVES

Name	cost	dmg	special
Aikuchi	3gp	1d3	5ft thrown range
Bada Bade Knife	8sp	1d3	
Badik	12sp	1d3	
Balisong	25sp	1d2	5ft thrown range
Barong	8gp	1d4	
Bichaq	9gp	1d3	
Bolo	9gp	1d4+1	
Choora	10gp	1d3	+1 to hit vs chain and scale type armors
Dacian Falx	7gp	1d4+1	+1 to damage when used with both hands
Dirk	4gp	1d3	5ft thrown range
Dha Montegnard	8gp	1d4	
Dha Naga	6gp	1d4	
Flatchet	6gp	1d4+1	
Kard	4gp	1d3	+1 to hit vs chain and scale type armors, 5ft thrown range
Kinjal	5gp	1d4	
Kukri	7gp	1d4	
Golok	2gp	1d4	
Navaja	1gp	1d2	
Navaja Sevillana	3gp	1d3	5ft thrown range
Rampuri Chaku	8sp	1d3	
Rentjang	1gp	1d4	
Seax	9sp	1d4	5ft thrown range
Seax, long	2gp	1d4+1	5ft thrown range
Talibon	1gp	1d4	

DAGGERS

Name	cost	dmg	special
Akinaka	8gp	1d4	5ft thrown range
Badik	15sp	1d3	
Balisong	35sp	1d3	5ft thrown range
Baselard	7gp	1d4	5ft thrown range
Baswa	5gp	1d4+1	
Batardeau	7gp	1d3	5ft thrown range
Bayu	8gp	1d4	
Bichua	7gp	1d3	
Billao	4gp	1d4	
Bodkin	8gp	1d4	Adds +1 to AC when not used to attack, 5ft thrown range
Bollock	4gp	1d3	5ft thrown range
Bracelet dagger	3gp	1d2	5ft thrown range
Buyu	4gp	1d4	
Chilanum	8gp	1d4	
Cinqueda	12gp	1d4	
Estradoit	10gp	1d4	+1 damage with sneak/backstab attack
Kris	20gp	1d4	extra swing after hit (+5) for +1 damage
Main Gauche	12gp	1d4	+1 to AC if used for parrying
Pongiard	10gp	1d4	+1 vs armor
Pugio	9gp	1d4	
Sica	15gp	1d3+1	

KNIFE/DAGGER VARIANTS

Name	cost	dmg	special
Bank Sickle Knife	18sp	1d3	used with overbear attacks, +1 to check
Beladau	10gp	1d4+1	used with overbear attacks, +1 to check
Cleaver	2gp	1d3	-1 vs any metal armor
Karambit	6sp	1d2	used with overbear attacks, +1 to check
Katar	18gp	1d4+1	+1 to hit vs chain, ring or similar armor
Kuba	10gp	1d4	-1 versus all metal armors
Kujang	10gp	1d3	-1 to hit
Sickle	4gp	1d4	
Trident Dagger	20gp	1d3	+1 to AC if used for parrying

DOUBLE EDGED SWORDS

Name	cost	dmg.	wt	lng	special
Arming Sword	12gp	1d6	2.7	28	
Arslentepe	6gp	1d6	1.1	21	
Babnga	9gp	1d6	2.6	23	
Bastard sword	25gp	1d10	5	45	
Bilbo	16gp	1d6	1.4	21	
Broadsword	12gp	2d4+1	3.5	32	
Carp's Tongue	17gp	1d8	3.3	31	
Claymore	35gp	1d10	5.5	51	
Espada Rotera	17gp	1d6	2.3	30	
Executioner's	45gp	1d8+1	4.3	36	-2 to hit
Flamberge	50gp	2d4+2	7	60	
Gladius Hispaniensis	21gp	1d8	2.2	31	
Gladius Mainz	18gp	1d6	1.8	26	
Gladius Pompeii	17gp	1d6	1.7	22	
Gupti	15gp	1d6	1.5	31	
Jian	17gp	1d8	1.5	31	
Kalis	15gp	1d6	1.8	30	
Katzbalger	20gp	1d6+1	2.9	28	
Khanda	22gp	1d8	2.7	40	+1dmg w/ 2h
Longsword	15gp	1d8	2.9	32	
Merovingian	18gp	1d6	2	30	
Mortuary Sword	25gp	1d10	2.1	41	
Rapier	20gp	1d8	1.1	38	
Seme	15gp	1d6	1.7	29	
Short Sword	10gp	1d6	2.5	25	
Spatha	22gp	1d8	2.5	34	
Takouba	17gp	1d6	2.2	29	

Two handed Sword	30gp	1d10+2	7	60	
Ulfberht	25gp	1d6+1	2	29	
Viking Sword	18gp	1d8	2.3	37	
Xiphos	14gp	1d4+1	1.7	21	

SINGLE EDGED SWORDS

Name	cost	dmg	wt	lng	special
Ayda Katti	13gp	1d6+1	3.3	23	
Badelaire	13gp	1d6	2.6	21	
Cutlass	15gp	1d6	2.4	23	
Dahong Balay	10gp	1d6	1.5	25	
Falcata	15gp	1d6+1	1.9	25	
Falchion	25gp	2d4	2.5	32	
Firangi	20gp	1d8	2.4	36	
Flyssa short	15gp	1d6+1	3.2	26	+ 1 vs chain
Flyssa long	25gp	1d8+1	3.9	35	+1 vs chain
Kachin Dha	20gp	1d8	2.4	36	
Kampilan	18gp	1d8+1	3.4	38	
Karbela	22gp	1d8	1.7	39	
Katana	22gp	1d6	2.5	27	+1 to initiative
Khopesh	15gp	1d6	2.9	22	
Kilij	25gp	1d8+1	2.5	35	
Klewang	14gp	1d6+1	1.7	25	
Kopis	14gp	1d6	1.8	25	
Makhaira	15gp	1d6	2.8	27	
Messer	18gp	1d6+1	2.3	25	
Nimcha	25gp	1d8	2.8	37	
Pallacsh	17gp	1d6	2.7	27	+1dmg from horseback
Pandat	17gp	1d6	2.3	25	+1 to damage if used two handed
Pulwar	25gp	2d4	3.7	37	
Saber	18gp	1d8	2.1	33	
Saif	15gp	1d8	2.3	32	
Schnepfer	18gp	1d8	2	32	
Scimitar	15gp	1d6	3	30	
Scimitar, great	55gp	2d6	6	48	
Scythe Sword	16gp	1d6	1.9	27	
Shamshir	22gp	1d8+1	4.2	40	
Shaska	8gp	1d8	2.8	36	
Shotel	25gp	1d8	2.6	42	2h, dismt/+1 versus shield
Sikin Panyang	13gp	1d6	1.3	22	
Sosun-Pattah	18gp	1d6	2.5	31	
Spadroon	16gp	1d6	2.4	25	
Surik	18gp	1d8	2	32	
Szabla	16gp	1d8	2.1	35	
Talwar	32gp	1d8+1	4	40	
Tachi	20gp	1d6+1	3	30	
Tapak Kudak	12gp	1d6	1.5	24	
Tegha	25gp	1d8+1	3	39	
Wakizashi	22gp	1d6	1.8	21	
Yatagan	15gp	1d6	2.4	23	

SWORD VARIANT OR UNCLASSIFIED

Name	cost	dmg	wt	lng	special
Colichimarde	20gp	1d6	2.2	36	
Estoc	22gp	1d8	3.9	45	+2dmg if 2h/ +1 vs armor
Foil	10gp	1d4	15oz	33	
Manople	20gp	1d6	4.8	23	+1 to AC
Pata	25gp	1d8	4.5	31	4.5
Sauschweter	45gp	1d8+1	4.5	43	-1 to hit & dmg vs armor
Small sword	14gp	1d6	1.5	30	
9 Ring Broad	30gp	1d10	4	30	

AXE, HAMMER OR AXE LIKE

Name	cost	dmg	special
Bardiche	18gp	2d4	
Battle Axe	5gp	1d4	+1dmg if used with both hands, 5ft thrown range
Bearded battle axe	10gp	1d6+1	
Crowbill	8gp	1d6	+1 vs armor
Double bladed axe	8gp	1d6	+1dmg if used with both hands
Hammer, light war	1gp	1d4	+1 vs armor, 15ft thrown range
Hammer, light spiked	2gp	1d4	+2 vs armor, 10ft thrown range
Hammer, heavy war	6gp	1d6	+1 vs armor
Hammer, heavy spiked	8gp	1d6	+2 vs armor
Hatchet	8sp	1d2	10ft thrown range
Pick, light	4gp	1d4	+1 vs armor, 5ft thrown range
Pick, heavy	8gp	1d6	+1 vs armor
Piercing axe	7gp	1d4	+1 vs armor
Rhomphaia	16gp	1d6	
Throwing Axe	3gp	1d4	15ft thrown range
Two handed axe	15gp	1d8	

SPEAR

Name	cost	dmg	rng	special
Assegai	5gp	1d6	30ft	
Boar Spear	3gp	1d8	20ft	
Bear Spear	4gp	1d8+1	10ft	-1 vs armor
Budiak	6gp	1d6	5ft	
Cape Assegai	8gp	1d8+1	5ft	-1/-2/-3 vs light/ medium/heavy armor
Dung, short	7gp	1d6	0ft	
Dung, long	8gp	1d6	0ft	

Framea	5gp	1d4+1	40ft	
Hasta	7gp	1d6	0ft	
Iklwa	5gp	1d6	10ft	
Kikuchi yari	7gp	1d6+1	0ft	
Kontos	9gp	1d6+1	0ft	x2dmg at charge, x2dmg if set for charge
Lance, Heavy	10gp	1d8	0ft	x2dmg at charge
Lance, light	8gp	1d6	5ft	x2dmg at charge, x2dmg if set for a charge
Nandum	6gp	1d4	0ft	+2 dmg on successful second hit
Qiang	1gp	1d6	20ft	x2dmg set for charge
Sang	25gp	1d8	0ft	x2dmg at charge, +1 vs armor
Sankaku Yari	10gp	1d6	0ft	+1 versus armor
Spear	1gp	1d6	30ft	x2dmg if set for charge
Viking Spear	1gp	1d6	30ft	
Viking Broad Spear	3gp	1d6+1	0ft	

POLE ARMS

Name	cost	dmg	special
Bec de Corbin	12gp	1d6	+2 to hit vs armor except padded or leather
Billhook	18gp	2d4	+1 on dismount checks
Dacian Falx	15gp	1d8+1	
Fauchard	15gp	1d6	
Fauchard Fork	17gp	1d6+1	
Fork Military	6gp	1d6	
Fu Pa	12gp	1d6+1	pin disarm
Glaive	9gp	1d6	
Glaive Gisarme	12gp	1d6	bonus to dismounting rider
Gisarme	9gp	1d6	bonus to dismounting rider
Halberd	10gp	1d8+1	bonus to dismount, set for charge
Hook	5gp	1d4	bonus to dismount
Ji	17gp	1d8	bonus to disarm
Lucerne Hammer	8gp	1d6	+1 vs armor
Naginata	20gp	1d8	
Partizan	9gp	1d6	
Pike	5-10gp	1d8	this weapon has significant reach
Pinyin	7gp	1d6	
Ranseur	8gp	1d8	+1 to disarm attempts
Scythe	13gp	1d3+1	
Spontoon	8gp	1d6	2xdmg if set for charge
Trident	10gp	1d8	10ft thrown range
Trishula	21gp	1d8	
Voulge	8gp	2d4	

RARE/UNCLASSIFIED/UNUSUAL WEAPONS

Name	cost	dmg	special
Brass knuckles	8sp	1d2	-2 to hit any armor
Brass knuckles, spiked	1gp	1d3	
Cat-O-Nine Tails	1sp	1d2	-4 to hit any armor
Cestus (with plates)	5cp (1sp)	-	+1 to damage from fist if metal plates inside
Gauntlet , knuckled	7gp	1d2+1	-2 to hit any armor
Gauntlet, spiked	12gp	1d3+1	
Man Catcher	25gp	1d2	See text
Meteor Hammer	3gp	1d4	8 foot striking range
Meteor hammer dual	6gp	1d4	8 foot striking range, see text
Sai	7gp	1d3	+1AC for each one, trap weapon
Sap	1gp	1d3	5ft thrown range
Sleeve tangler	10gp	1d4	See text
Sodegarami	8sp	1d3	See text
Whip	1gp	1d2	15ft thrown range

MISSILE OR THROWN WEAPONS

Name	cost	dmg	rng	special
Bolas	5gp	1d4	20ft	
Dart	5sp	1d3	20ft	
Harpoon	1gp	1d6	20ft	
Javelin	1gp	1d4	30ft	
Skull crusher	2sp	1d2+1	30ft	-1 vs armor
Sling	1sp	1d4	50ft	
Staff sling	10cp	1d4	75ft	
Throwing stick	1sp	1d2	30ft	-1 vs armor

BOWS

Type	Cost	dmg	short*	max**
Arcus I	30gp	1d6	200	600
Arcus II	75gp	1d6	267	800
Assyrian Angular	40gp	1d6	133	400
Assyrian Curved	50gp	1d6	200	600
Egyptian I	40gp	1d6	133	400
Egyptian II	65gp	1d6	200	600
English Longbow	75gp	1d6	400	1200
Greek	100gp	1d6	200	600
Gungdo	100gp	1d8	200	600
Hun I	60gp	1d6	167	500
Hun II	75gp	1d6	200	600
Hun, asymmetric	120gp	1d6	300	900
Mongolian	120gp	1d8	400	1200
Native American	20gp	variable	variable	variable
Quing	100gp	1d8	333	1000
Scythian I	60gp	1d4	200	600
Scythian II	40gp	1d4	67	200

Scythian smallbow	25gp	1d4	67	200
Smallbow, composite	75gp	1d6	133	400
Turkish Bow	100gp	1d8	333	1000
Viking I	30gp	1d6	267	800
Viking Bow II	80gp	1d8	333	1000

*Range at which there is no penalty

** Range is equal to the maximum distance in feet.

BOW RANGE AND DAMAGE BY DRAW WEIGHT

Draw (lbs)	maximum range	damage
0-30	200	1d4
31-60	400	1d6
61-90	600	1d6
91-120	800	1d6
121-150	1000	1d8
151-180	1200	1d8
181-210	1400	1d8+1

ARROWS

Type	damage bonus	cost	effect
Pyeonjeon	0	3cp	
Flight Arrow	-1	2cp	+200 ft range
Broadpoint	+1	6cp	-200 foot range
Bodkin	0	4cp	+1 vs armor
Whistling Arrow	0	8cp	
Blunt Arrow	-1	1cp	-1 vs armor
Swallowtail	+1	7cp	+1d4dmg when removed

CROSSBOWS

Type	Cost	Dmg	short rng	max rng
Wooden, light	35gp	1d6	80	240
Wooden, heavy	45gp	1d6	120	360
Composite, light	45gp	1d8	133	400
Composite, heavy	50gp	1d10	267	800
Steel, light	75gp	1d8	300	900
Steel, heavy	100gp	1d10	367	1100
Gastraphetes	50gp	1d6	233	700
Pistol Crossbow	100gp	1d4	40	120
Repeating Crossbow	125gp	1d4	200	600

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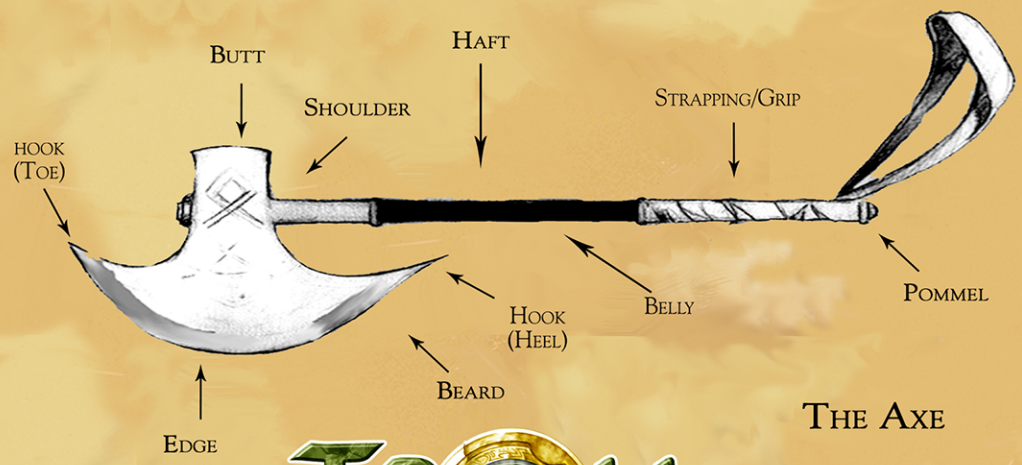

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