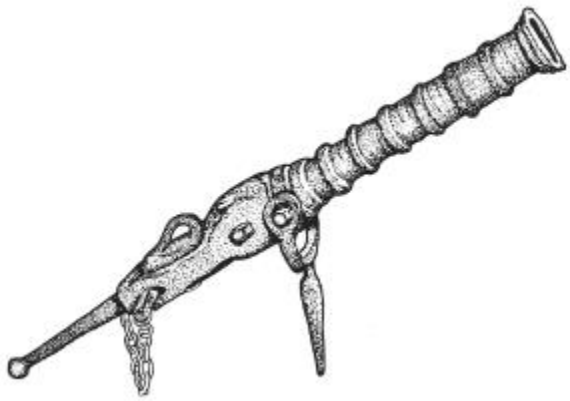
ARMS AND ARMOR OF THE PILGRIMS 1620-1692

by
Harold L. Peterson



Patrero or "murderer"

Published by Plimoth Plantation, Inc. and the Pilgrim Society,
Plymouth 1957

A seventeenth century musketeer ready to fire his matchlock.
From Jacques de Gheyn, Maniement d'Armes, *1608*.

The average colonist landing on the wild shores of North America in the early 1600's set great store by his arms and armor. The Pilgrims were no exception. They were strangers in a vast and largely unknown land, inhabited by wild beasts and peopled by savages who were frequently hostile. Greatly outnumbered by known enemies and possibly facing dangers of which they were not yet aware, these Englishmen placed their main hope for survival on the possession of superior weapons and protective armor. On the more peaceful side, their firearms were also valuable, for they provided fresh meat for the table and furs for sale back home.

Because the colonist was so dependent on his arms he soon learned to select the most efficient kinds that he could obtain. In so doing he pushed the evolution of military

materiel far ahead of contemporary Europe and developed a high degree of skill, particularly in the use of firearms.

The military supplies which the Pilgrims brought with them may be divided into three major categories: defensive armor, edged weapons, and projectile weapons. A completely armed man, especially in the first years, was usually equipped with one or more articles from each of the three groups, usually a helmet and corselet, a sword, and a musket.

ARMOR

Of all the pieces of defensive armor, the most popular was the helmet. Almost everyone wore one when he prepared for trouble. Most of those worn at Plymouth were undoubtedly open helmets which left the face uncovered, although it is possible that a few completely closed helmets were also used. These open helmets were of three principal types: the cabasset, the morion, and the burgonet. The cabasset was a simple, narrow brimmed helmet with a keeled bowl and a tiny apical peak pointing to the rear. The morion had a larger crescentic brim pointed at the front and back and a high comb along the center-line of the bowl. The better specimens of both these helmets were forged from a single billet of steel, and both were very efficient defenses. The curving lines of the bowls caused most blows to glance off without imparting their full impact, and the comb of the morion presented an extra buffer of metal through which a sword would have to cut before it reached the bowl. Inside each helmet was a quilted lining held in place by a row of rivets around the base of the crown which acted much like the modern helmet liner in holding the steel shell away from the wearer's head.

Cabasset.

Morion.

The burgonet was a slightly more complicated helmet than the morion or cabasset, and it was made in a variety of styles. Basically, it was an open-faced helmet which covered more of the head than the other two. Usually it had a peak or umbril somewhat like the visor of a modern cap over the eyes, a comb on the bowl, and movable plates to protect the cheeks and ears. Often there was a defense for the face in the form of a single adjustable bar which passed through a hole in the umbril or by three bars fashioned like a muzzle and attached to the umbril which was pivoted at the sides so it could be raised or lowered. One form of the burgonet which became popular in the second quarter of the 17th century was known as the lobster tail burgonet because the wearer's neck was protected by a series of overlapping plates which somewhat resembled those on a lobster's abdomen or "tail."

A fourth and final type of helmet was known as a "pikeman's pot." This greatly resembled the morion, but had a broad flat brim instead of a narrow crescentic one. As its name indicates, it was worn primarily by pikemen in conjunction with a specific type of corselet which was generally designated pikeman's armor.

This armor consisted of five elements in addition to the helmet. There was a gorget to protect the neck and to support the weight of a back plate and a breastplate which were fastened together by straps which passed over the shoulders and attached by hooks at the front and by a belt that passed around the waist. At the lower edge of the breastplate were fastened two hinged plates called tassets which protected the thighs. Although each of these plates was made from a single sheet of metal they were embossed to resemble a series of overlapping plates, complete with false rivets.

Of all the forms of body armor worn in America during the early 1600's, the pikeman's suit was undoubtedly the most popular. There are numerous references to it in the contemporary documents. A tasset from such a [Pg 5]suit was found behind the fireplace in the John Howland house near Plymouth and is now preserved in Pilgrim

Hall. In the Massachusetts Historical Society in Boston there are a helmet, a back plate and a tasset from another suit which belonged to an early colonist, and portions of similar suits have been found in Pennsylvania and at Jamestown, Virginia.

Men armed with muskets might sometimes wear pikeman's armor, but more often they wore simpler corselets consisting only of breast and back-plates. With these corselets they wore either a cabasset, a morion or a burgonet.

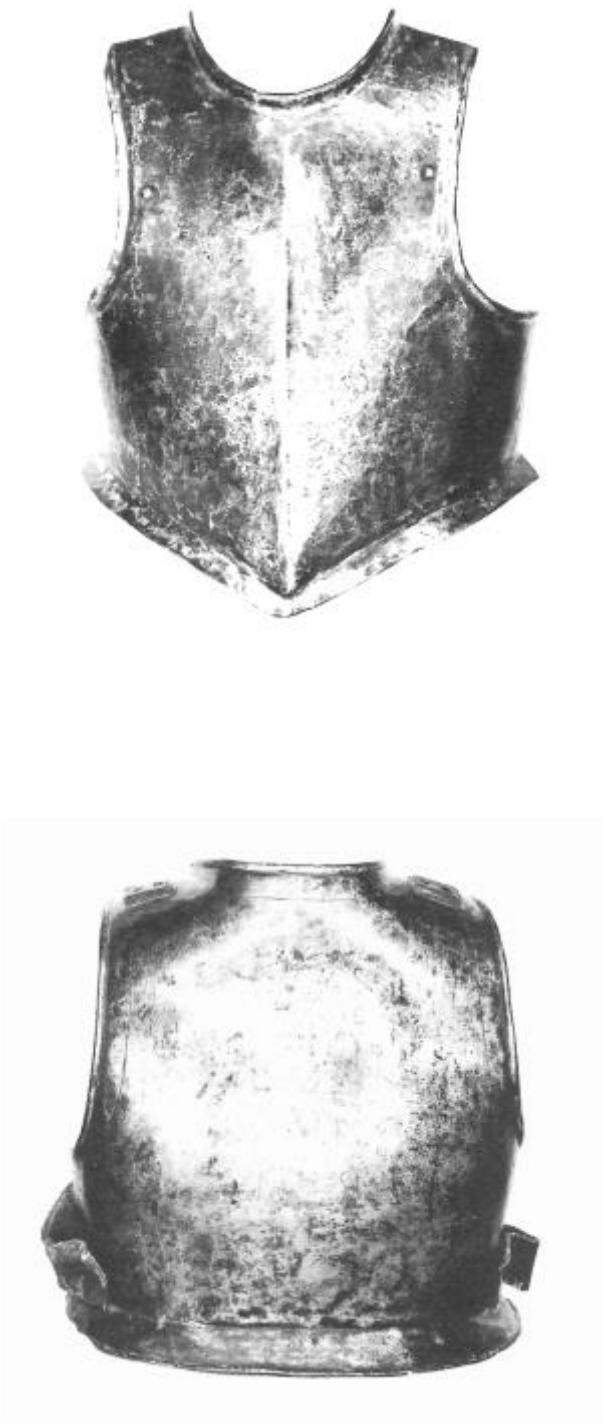
The weight of the corselets worn by the Pilgrims depended largely on the quality of the breastplate. The helmets and other pieces were sufficient to stop a sword blow or turn an Indian's arrow but still quite light. Breastplates, however, were made according to three standards depending on what weapons they were supposed to offer protection against. The lightest forms were labeled pike proof or high pike proof; the next heavier were called pistol proof, and the heaviest were musket proof. The musket proof breastplates are quite scarce. Often they are ⅜ of an inch thick and bear a dent caused by a bullet fired at them as a test when they were made. Pistol proof plates are much lighter and are much more plentiful. They also often bear a testing dent and sometimes the letter "P" as a proof mark.

Burgonet

Lobstertail burgonet.

Most modern Americans tend to think of armor in terms of brightly polished steel. Sometimes it was finished bright, but by the 17th century it was more often black, brown, or dark blue. This was especially true of those suits destined for active service in the field. A brightly polished piece of armor needed constant care to guard it from rust and maintain a good appearance. Blacking, russeting or bluing it helped protect it and made it easier to maintain. The black finishes were sometimes obtained through the use of soot and oil, sometimes by paint. The russet and blue finishes were produced by artificial oxidation.

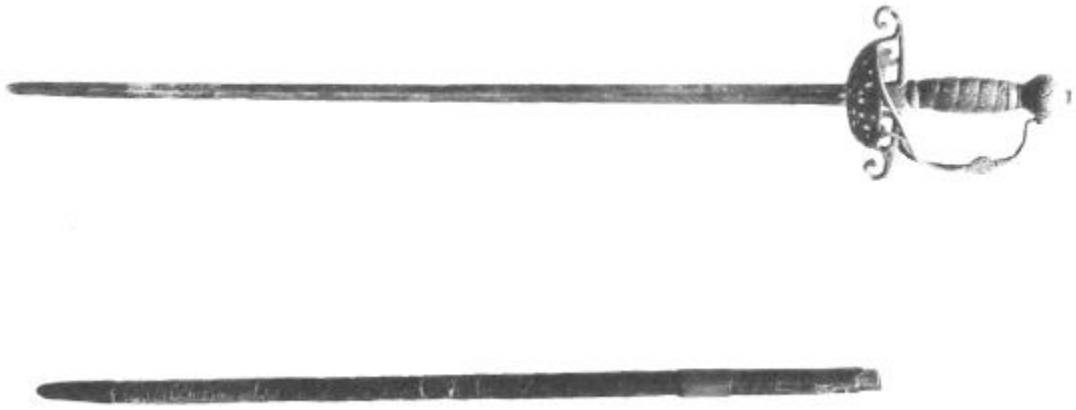
English pikeman's armor bearing the cypher of James I (1603-1625). The waist belt is now missing.



Simple corselet with a bullet proof breastplate.

This defensive armor, though popular at first, was soon discarded by the Pilgrims. The men who set out on the first exploring expedition when the *Mayflower* touched at Cape Cod were all armed with corselets. They found them efficient protection against

the arrows of the Indians, but when they at length discovered a quantity of Indian corn, they were so encumbered and weary from the weight of their arms that they could not carry back as much of the booty as they desired. Soon they found that they could usually dodge arrows unless taken by surprise, and so gradually they began to decide in favor of freer movement and less weight. The corselet retained its popularity for the first ten years, but a compromise in the form of a heavy buff leather or quilted coat began to make its appearance. By the time of the Pequot War in 1637, the presence of "unarmed" men, as those without armor were called, became more and more frequent. The helmet was the last piece of plate armor to be discarded, but following King Philip's War (1675-1678) that too was abandoned, and plate armor disappeared from the scene except for ceremonial occasions.



Capt. Miles Standish's rapier and scabbard.

EDGED WEAPONS

The edged weapons brought to America by the Pilgrims were of four principal types, swords, daggers, pikes and halberds. The bayonet was almost unknown on this continent at the time. Of all these arms, swords were by far the most plentiful. Every soldier, whether he was armed with a musket, pike or halberd or served a cannon, was required to carry a sword. Thus, since almost every able-bodied man was supposed to perform military service, all had to be familiar with the weapon, and a large supply was necessary.

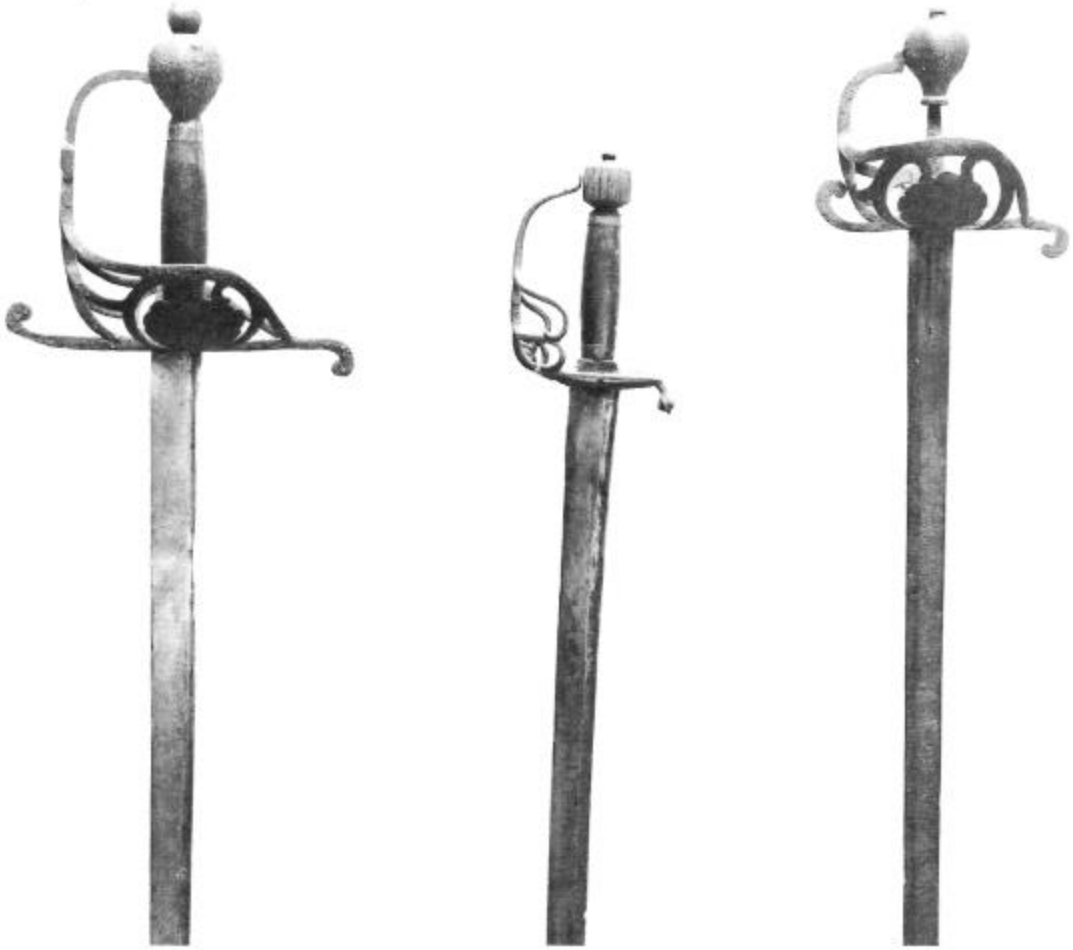
Both thrusting and cutting swords were used. The thrusting swords, known as rapiers, had long straight blades, diamond-shaped in cross section, with sharp points and only rudimentary edges. Some had guards fashioned of numerous bars bent in graceful curves and loops, and these are called swept-hilted rapiers. Others had a solid cup-shaped plate between the hand and the blade augmented by extra bars and branches. These are called cup-hilted rapiers.

Fortunately, one of the cup-hilted rapiers used by the Pilgrims has survived. It belonged to Captain Miles Standish, the doughty military advisor of the colony, and it is now preserved in Pilgrim Hall. It is a very good example of the Dutch-English style of cup hilt, the shallow iron cup and supplementary branches, the knuckle-bow, and the pommel are decorated with crudely incised designs of leaves and masks. The grips are covered with black leather. Originally they were wound with twisted wire in the spiral grooves, but the wire is now missing. The scabbard also has been preserved, and that is most unusual for swords of this period. It is made of wood, almost cylindrical, covered with black leather. There is an iron ferrule at the throat (which has now slipped several inches down the scabbard) and an iron tip. Interestingly, Standish is known to have been a short man whose enemies sometimes called him “Captain Shrimp,” and this sword is about six inches shorter than the average rapier, which would have made it easier to handle for a small man.

Probably even more plentiful than the rapiers were the cutting swords. Most of these were shorter weapons with single-edged blades, sometimes straight and sometimes slightly curved. Two of these weapons have survived and are preserved in Pilgrim Hall. The older and more spectacular of these belonged to Gov. John Carver and was made near the beginning of the century. It has a massive hilt with guard and pommel of iron encrusted with floral decorations of silver. The decoration and workmanship are typically English. The blade is straight with a single edge and a narrow fuller or groove along the back. The second sword is considerably smaller and later. It came from the Brewster family and may have belonged to Elder William Brewster, although he must have purchased it late in life. It has a lighter iron guard without ornamentation and a slightly curved singled-edged blade, also with a narrow fuller at the back. This sword, too, is typically English.

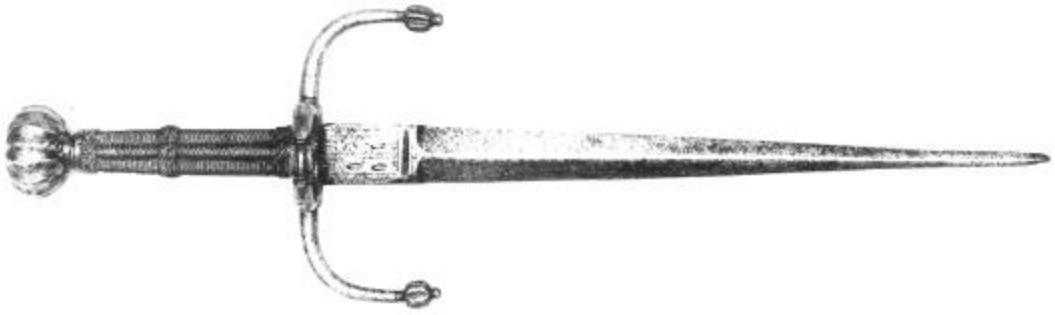
Detail of the Standish rapier hilt.

Swept-hilted rapier excavated at Jamestown.
Those used at Plymouth would have been similar.
National Park Service.



The cutting swords of Governor Carver, Elder Brewster and John Thompson.

Quillon or left-hand dagger.



A third surviving cutting sword preserved at Pilgrim Hall is a broad-sword which belonged to John Thompson who came to Plymouth in 1623. Like the Carver sword, this weapon also dates from the opening years of the 17th century. The hilt is smaller, but the metal parts are of iron decorated with the same typically English floral sprays in silver. The blade on this specimen, however, is what sets it apart. It is much longer and double-edged, a sword suitable for use on horseback as well as on foot.

These swords were more than mere military decorations. They were highly necessary weapons. In a period when firearms were inaccurate and loading and firing were time-consuming operations, the outcome of most battles was determined largely by hand-to-hand combat. The musket, once it had been fired, was then of no use for it had no bayonet. At such times the sword became the principal weapon, and a soldier's life depended upon his skill with it.

There are numerous records indicating the use of swords by the Pilgrims. On their first expedition ashore, they used them to "hew and carve the ground a foot deep." In one interesting coincidence, a sword's hilt figured in the death of two persons. In 1646 a privateer commanded by Captain Thomas Cromwell put into Plymouth. While there, one of the sailors assaulted the captain who had been trying to restore order during a brawl. In the course of the struggle, Cromwell seized the man's rapier and struck him on the head with its hilt. The cross guard pierced his skull and killed him. Since the man had been a notorious trouble-maker, Cromwell was acquitted in a trial by a council of war. Some three years later, however, Cromwell fell from his horse and landed upon the hilt of his own rapier which so injured him internally that he died shortly thereafter.

In addition to their swords, many men also carried knives or daggers. Miles Standish and his followers used knives effectively in liquidating the trouble-makers at Wessagusset, and there are numerous other references to their presence at Plymouth.

Unfortunately no specimens used by the Pilgrims or their 17th century descendants at Plymouth have survived. There is a knife that belonged to John Thompson in Pilgrim Hall, but it is a table or general utility knife, and not a weapon. In all probability the most popular form of dagger employed at Plymouth was the quillon or left-hand dagger. This weapon had a simple cross-guard or quillons, probably with a ring opposite the grips on one side. It had a straight blade which tapered evenly to a point, and it was designed to be held in the left hand while the rapier was held in the right.

In addition to these edged weapons which were worn on the belt, there were also weapons with long wooden hafts, known as pole arms. Of these, two forms were principally used at Plymouth, the pike and the halberd. The pike was a spear with a simple leaf-shaped head attached by long straps to a wooden pole some fourteen feet long. The halberd was a combination of axe and spear, and its haft was much shorter, perhaps six or seven feet, exclusive of the head.

Halberd from the cellar of the
John Alden house.
The haft is modern.

Pike.

In European armies pikemen played a very prominent role. Offensively they were used for shock tactics in charges against the enemy. Defensively, with the butts of their pikes driven into the ground, they formed movable semi-fortresses behind which musketeers could retreat in the face of a cavalry charge.

Because of this prominence as a weapon in Europe, the Pilgrims brought some pikes with them to Plymouth, but they quickly found them disappointing. Although the pike was effective in the set tactics of Europe, it was of little use against an enemy who would neither charge nor stand against a charge and whose forces were never arranged in compact formation but scattered and always on the move. A weapon

fourteen feet long was also difficult to handle in the woods where there was little room for maneuvering. Thus the Pilgrims first abandoned the full pike for the half pike, which was only six or eight feet long. As late as 1646 the Plymouth fathers still required one half pike for every four men on military duty, but after the outbreak of King Philip's War in 1675, the settlers of Plymouth agreed with their neighbors in Massachusetts Bay "... it is found by experience that troopers & pikemen are of little use in the present war with the Indians ... all pikemen are hereby required ... to furnish themselves with firearms...."

The history of the halberd at Plymouth is quite different from that of the pike. At this period it was primarily an emblem of rank, and as such it survived long after its usefulness in warfare ceased. Halberds were carried by sergeants as symbols of their authority and by ceremonial guards. In Virginia, for instance, Lord Delaware had fifty halberdiers to form his guard when he was governor. This was a vastly larger number than normal in America, but most colonial governors, including John Winthrop in Boston, had a few attendants so armed. Plymouth was no exception. As late as 1675 it was ordered that four halberds be carried before the governor on the first day of the General Court, and two on succeeding days. It is known also that the sergeants at Plymouth had them, and there is a possibility that court officials also carried them.

At least one of the halberds from the Plymouth colony has survived and is now preserved in Pilgrim Hall. It was probably made about 1600-1610 and was found in the cellar of the John Alden house. The haft is a modern replacement.

FIREARMS

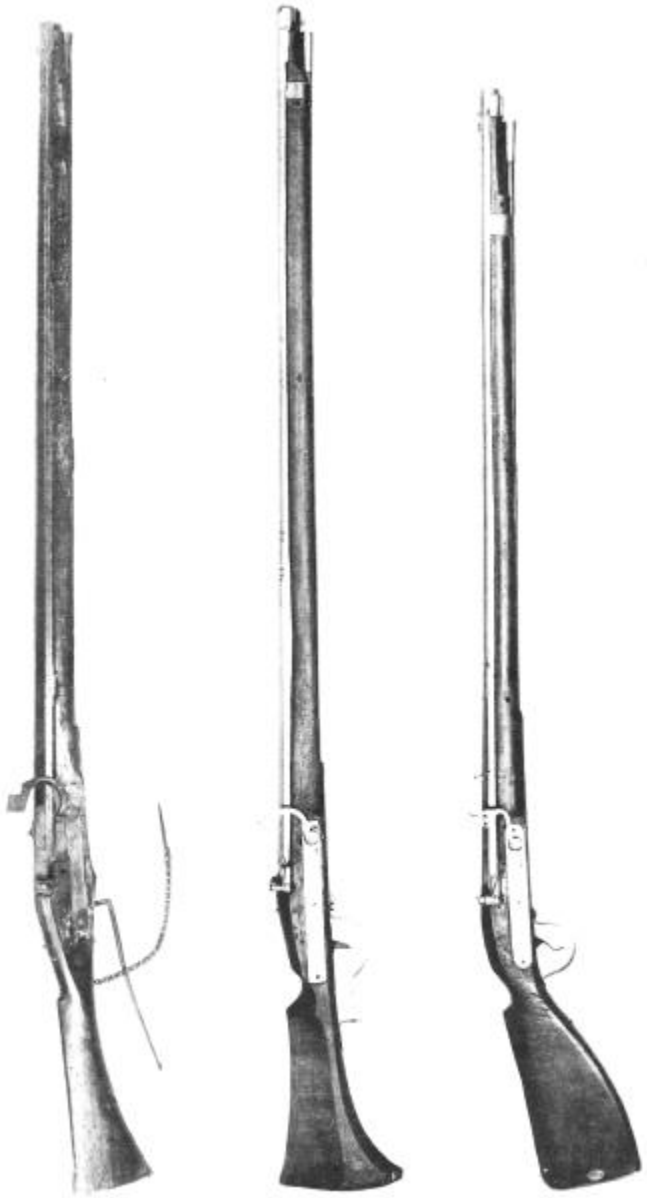
The projectile arms of the Pilgrims were their most important weapons. The American Indian usually preferred to do battle against Europeans in loose formation and at long range, resorting to hand-to-hand combat only in surprise attacks or when he believed that the enemy had been sufficiently decimated and disorganized by his sniping tactics. In addition to their value in warfare, projectile arms were also important in providing the settlers with fresh meat. For these reasons, the evolution of design in such weapons was swifter and more striking than in any other form of military equipment.

The most common type of firearm that came to America on the *Mayflower* was the musket. This was a smooth-bored weapon, usually slightly more than five feet long with a caliber ranging between .69 and .80. The majority of those that the original settlers brought with them were matchlocks. They were fired by pressing the lighted end of a slow match made of a loosely woven rope soaked in nitre into the powder in the priming pan. This was effected by fastening a length of the match to a forked holder known as the serpentine on the outside of the lock which corresponded to the

hammer on a modern gun. Pressure on the trigger caused the serpentine to swing in an arc toward the priming pan, thus bringing the match into contact with the powder.

Although the mechanism was simple, the loading of a matchlock was a long and complicated procedure. After having fired his musket, the first task of the soldier was to remove his match (which according to regulations was lighted at both ends) so that he would not accidentally ignite any of his powder. To do this he loosened the thumb screw which clamped the match in the fork of the serpentine and grasped the cord with his left hand, holding one of the lighted ends between his second and third fingers and the other end between his third and fourth fingers. Then, seizing the barrel of the gun with the thumb and forefinger of the same hand, he would hold it while he loaded. Having thus prepared the piece to receive the charge, he would use his right hand to open one of the wooden cylinders on his bandolier or the nozzle of his powder flask, depending on which he carried, and pour the contents down the barrel. Next came a ball from his pouch or from his mouth if it was during an action, and finally, a wad of tow or paper. All this was forced home with a rammer. Then he would prime the piece by filling the flash pan with fine-grained powder from a little flask which was suspended from his belt, close the pan cover, and carefully blow away any loose powder.

The gun was then loaded, but several actions were still necessary before it could be fired. The match had to be returned to the serpentine and adjusted. The coal on its end had to be blown into activity. If the gunner was forced to wait any length of time before firing, he had to change the adjustment of the match continually to insure that it would strike the pan and also to prevent it from burning down to the serpentine and going out. If it did go out, he relighted it from the coal at the other end of the match which was kept burning for that purpose.



Three matchlock muskets. From left to right: An Italian musket, 1580-1610 believed to have been used at Plymouth before 1637 when it was sold to a nearby garrison house; German musket, 1600-1630; German musket, 1640-1670.

Soldier blowing on his match to make the coal glow well before firing. From De Gheyn.

From this it may be seen that the matchlock was in many ways inferior to the Indian's bow. Its chief advantage lay in the panic produced by the flash, smoke, smell and noise of the explosion of the charge. Also, a gun could be loaded with several bullets and wound a number of enemies at one time. The ball from a matchlock musket was superior to an arrow in the size of the hole it tore, the bones it smashed, and the amount of blood it spilled. The bow was superior in accuracy and rapidity of fire. Moreover, it was light and easy to carry while the gun was heavy and clumsy. The bow was constantly ready for use except perhaps during a long rain, while the slow-match required, in the best of weather, constant attention to keep it burning; and in dampness, rain, and wind, it was useless. The light from the match also prevented

ambush at night, and the smell forestalled a surprise attack in the day time unless the foe happened to be up-wind.

Although matchlocks were the dominant type of weapon brought over on the *Mayflower*, there were also a few flint arms. Modern authorities differentiate between the true flintlock and its more primitive or regional forms, the snaphaunce, the English lock, the so-called "dog" lock, the Baltic lock, and the miquelet. These distinctions are purely modern, however. The contemporary writers called all firearms which ignited the powder by striking flint against steel "snaphances." Thus it is impossible to determine at this date exactly what form of flint arm is referred to in a given instance, and so a generic term must be used.

Flint arms were much more efficient than matchlocks. They were faster, more dependable, and less cumbersome. The powder in the priming pan was ignited by striking a piece of flint held by the cock against a piece of steel, called the frizzen or battery. The frizzen was poised directly over the pan so that the sparks produced by the contact of the flint and steel would drop into the powder. Flint arms could function in ordinary dampness and even in a light rain. There was no match to light and keep free from ash in advance of any expected action. And since there was no match, there was no light or smell to betray an ambush.

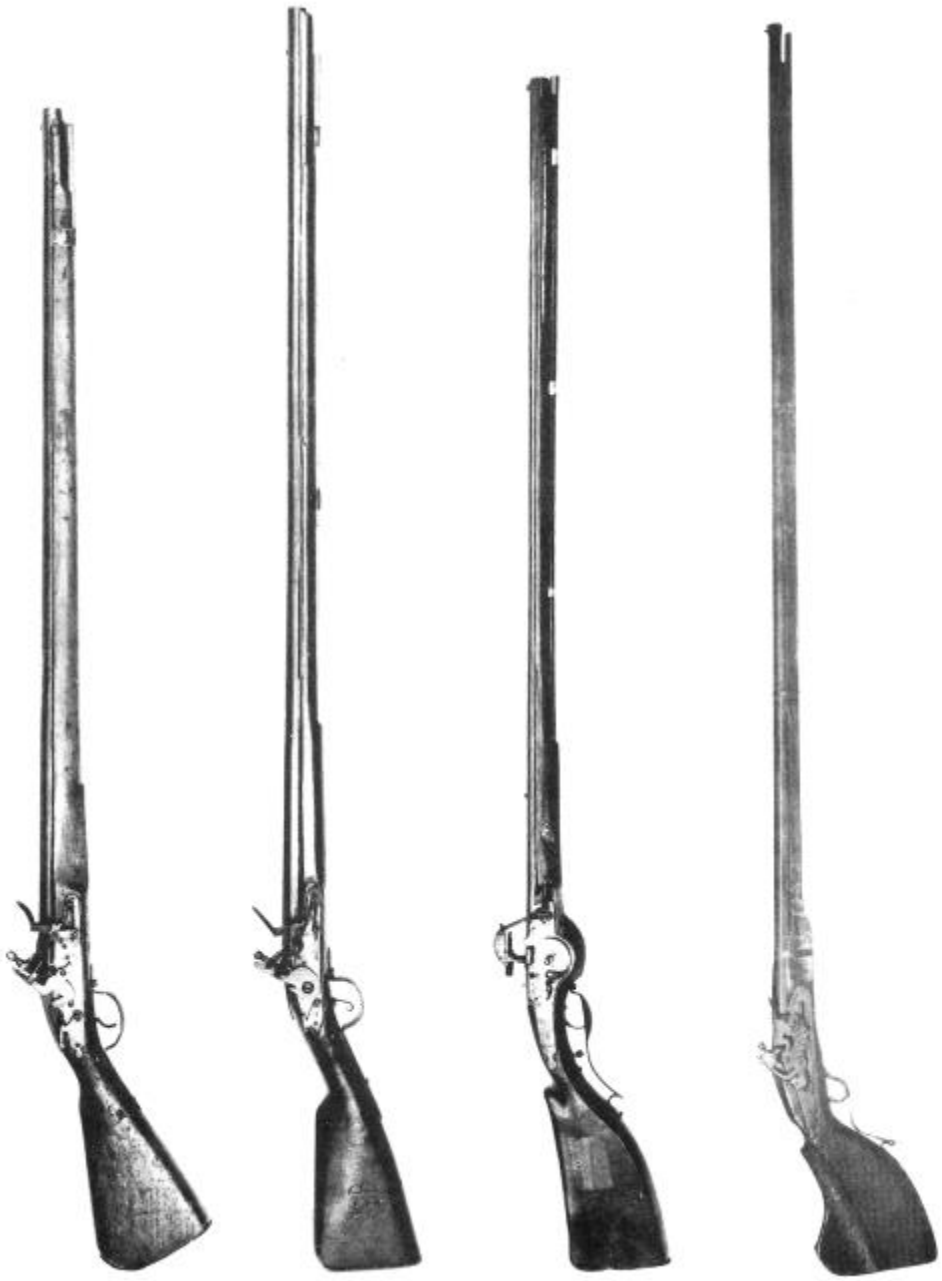
It is difficult to determine exactly when flint arms superseded matchlocks as the standard military firearm at Plymouth. There were a few flint arms in the *Mayflower* in 1620, for flints are specifically mentioned among the military stores on board. Miles Standish, a professional soldier, naturally had the best weapon available. Edward Winslow, in describing the first encounter between the colonists and the Indians, noted that Standish with his "snaphance" and one or two other Pilgrims, who were apparently equipped with flint arms, fired at the Indians and held them at bay while a brand from the fire was carried to the others so they could light their matches.

For the first ten years the supremacy of the matchlock was probably not seriously threatened. From 1630 until the outbreak of King Philip's War in 1675, however, the change is plainly visible. There are more references to matches than to flints in inventories and court records until the beginning of the Pequot War, but the tales of snap-shooting increase, and during the war the stories of ambushes and surprise attacks throughout New England indicate that flint arms were becoming more plentiful. In 1643 the Plymouth General Court ordered that every soldier should be supplied with either a matchlock or a "snaphance." By 1645 Governor William Bradford could report that the Plymouth troops had been sent to a muster at Seacunk "well armed all with snaphance peeces." In 1645, also, while matchlocks were allowed for private arms, the Plymouth General Court allowed only "snaphances" or "firelocks" for Town arms.

With the coming of King Philip's War, the era of the matchlock at Plymouth was definitely past. The campaigns of that war, forays into the wilderness, night attacks, ambushes, battles in the rain, and encounters between individuals which required snap-shooting indicate clearly that the "snaphance" was the principal weapon. In 1677, towards the end of the war, the Plymouth General Court outlawed the matchlock completely as an acceptable weapon. In abandoning matchlocks at this time, Plymouth was years ahead of Europe where the clumsy firearm persisted until after 1700.

In addition to the matchlock and flint arms in general use, there were undoubtedly a few wheel lock arms in Plymouth. The wheel lock was the second ignition system chronologically, having been developed shortly after 1500. It was an efficient system, operating much like a modern cigarette lighter with the spark produced by holding a piece of pyrites against a revolving rough-edged wheel. The wheel lock, however, was an expensive weapon, costing twice as much as a matchlock and half as much again as a flint arm. This did not necessarily preclude its purchase by the Pilgrims since those colonists were not so apt to economize on something which affected their life expectancy as closely as did their firearms. There are no records which state positively that there were wheel locks at Plymouth, and no authentic wheel lock used there has survived. The term "firelock" which is used occasionally in the documents very often was used to denote a wheel lock, and in the case of the 1646 order mentioned above, it almost certainly had that meaning.

The Pilgrims also brought two other principal kinds of hand firearms with them, the fowling piece and the pistol. The fowling piece, or birding piece as it was often called, was usually a huge gun. In 1621 Edward Winslow wrote from Plymouth to prospective colonists in England and advised them concerning their needs. Regarding these fowlers, he counseled, "Let your piece be long in the barrel; and fear not the weight of it, for most of our shooting is from stands." This was in keeping with the best contemporary sporting theory which contended that barrels five and a half or six feet long would increase the range of the gun and produce a flatter trajectory for the bullet. Such guns were almost always flint arms, although there may have been a few wheel locks.



A flint musket with the so-called dog lock, about 1637; a later flintlock musket, about 1690; a wheel lock musket, 1620-1650; the long fowler which belonged to John Thompson.

John Thompson's "dog lock" pistol.

Fortunately one such fowling piece which belonged to a Plymouth settler, John Thompson, has survived, and is preserved in the Old Colony Historical Society Museum at Taunton, Massachusetts. It is 88½ inches long with a 73½ inch barrel of .84 caliber. The lock is a primitive form of flintlock known to collectors today as an "English lock." The stock is oak and was undoubtedly made in this country.

In addition to their long guns, the Plymouth settlers also brought some pistols. Inventories of their estates contain listings of such hand guns, including one "double pistol." All the pistols would have been either wheel locks or flint arms. The matchlock was almost never used for pistols by Europeans, although it is frequently found on Oriental hand guns. Once more it is a weapon of John Thompson that has survived to show what at least one of the Plymouth pistols looked like. Preserved in Pilgrim Hall, it is a most interesting weapon. Many of the pieces are missing from the lock, but enough survive to indicate it was the type of flintlock that is often called a "dog lock" by modern collectors because of the little dog catch which held the cock in the half-cock position. The barrel is brass with interesting moulded decorations, and the wooden stock has a butt closely resembling those found on many wheel lock pistols of the first quarter of the 17th century.

These were the kinds of firearms which the Plymouth colonists used in the years from 1620 till 1690. Before leaving the subject, however, it would be well to mention one form which was not used but which has become intimately associated with the Pilgrims in popular imagination—the blunderbuss. This colorful weapon with the flaring muzzle was developed on the Continent of Europe about the middle of the 17th century, some thirty years after the *Mayflower* landed at Plymouth. It was some years later before it reached England. As a weapon, it was a highly specialized arm. The flared muzzle was designed to spread the shot in a wide pattern and thus do as much damage as possible to a closely packed group of enemies at comparatively short range. It was of no use against scattered foes at a distance. Actually, it was the direct ancestor of the modern riot gun or the shot gun used by prison guards. It was not

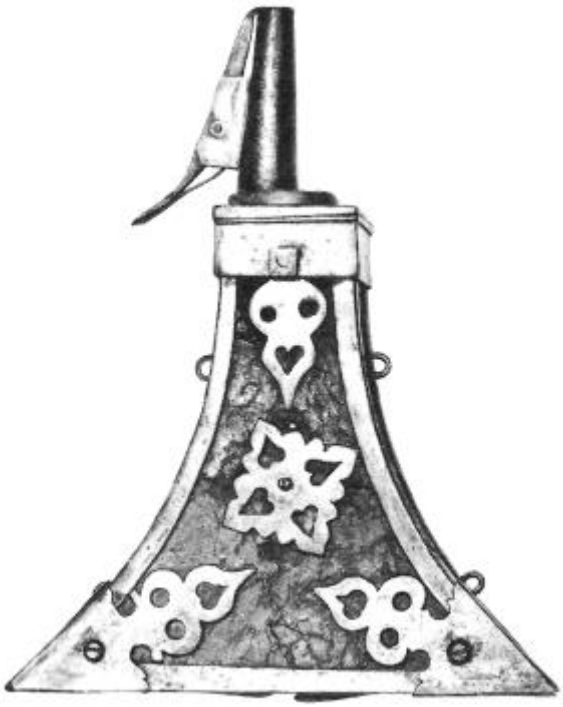
popular in America until about 1700 when the growth of cities and increasing population created here the conditions under which it was effective.

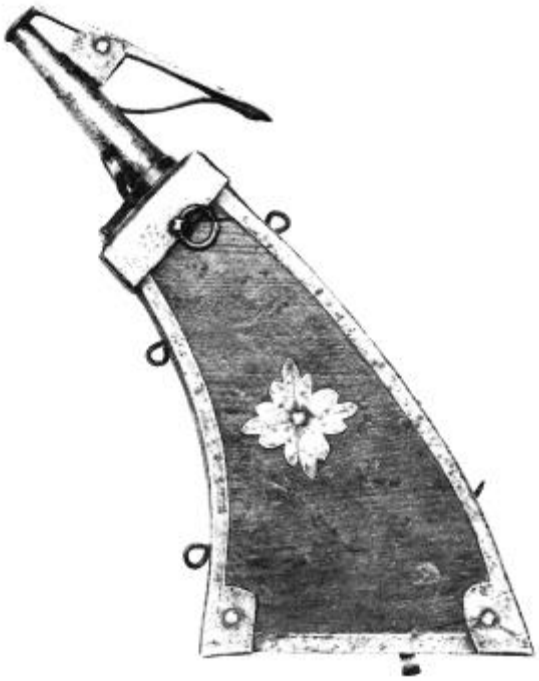
AMMUNITION AND EQUIPMENT

The ammunition which the colonists fired from their guns consisted of round balls of lead propelled by charges of black powder. The powder was weak by modern standards and thus comparatively large loads were used. When it was ignited it gave off clouds of white smoke which smelled strongly of sulphur. Usually for military purposes a single ball was used, but sometimes, especially for hunting, a number of small shot, much like present day buck shot, were used. These were called swan shot by the men who used them.

There were several ways of carrying this ammunition. The powder was normally either in a flask or bandolier; the shot in a soft leather pouch. When going into action, a soldier often took his bullets from his pouch and put them in his mouth so he could spit them into the barrel of his gun and save time in loading.

Powder flasks.





The flask was usually a box of wood, often covered with leather and bound with iron. Normally it was either roughly triangular or shaped like a flattened horn. There was a nozzle at the end with two valves, one at the base and one at the end. This enabled the user to measure out one nozzle-full of powder at a time, and the nozzle was calculated to hold just about enough powder for a normal load. Usually two flasks were used, a large one for the propelling charge within the gun, and a small one holding finer powder for use in the priming pan.

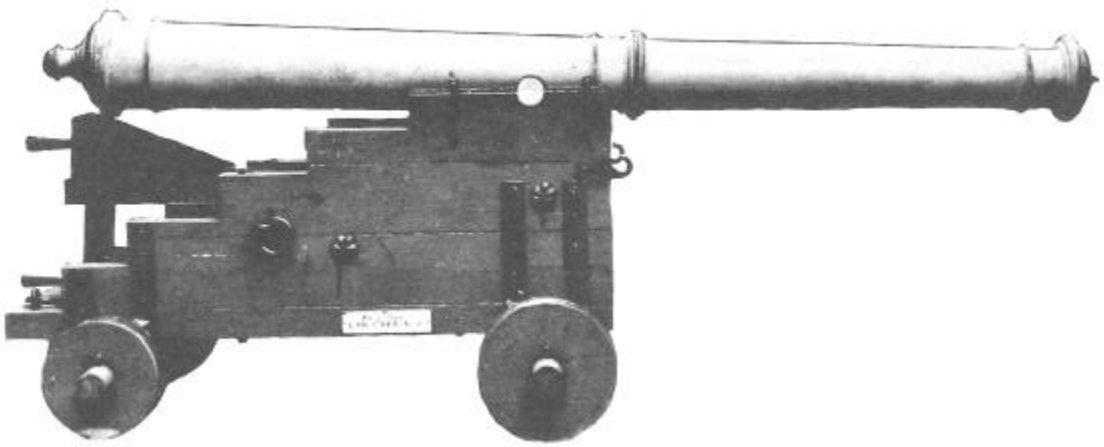
A bandolier was a somewhat more complicated piece of equipment. It consisted of a leather belt worn over the shoulder from which were suspended little cylinders of wood, metal or hard leather. Each of these cylinders held enough powder for one charge. Also attached to the belt were a bullet pouch and often a small flask for priming powder.

Theoretically the bandolier afforded a faster and more convenient method of carrying ammunition. Actually, it had many disadvantages. The cylinders rattled against each other, making so much noise it was sometimes impossible to hear commands. Occasionally the musket would become tangled in the loops. And worst of all, hanging in front as they did, they would sometimes ignite from the musket discharge and the whole string of charges would explode, which was most unpleasant and disconcerting to the wearer to say the least. Despite these drawbacks, bandoliers were quite popular at Plymouth, and they are frequently mentioned in wills and inventories.

As the 17th century wore on, there came two other developments in the means of carrying ammunition. The use of flasks made of cows' horns increased in popularity as the cattle population grew. Such horn flasks had been used to some extent by the

poorer classes in Europe, but in America they became very popular because they could be made locally and did not require great skill or craftsmanship. By the beginning of the 18th century such horn flasks or powder horns as they were then called completely dominated the flask picture. The other development was the practice of wrapping charges of powder in cylinders of paper which could be carried in a pouch. These were the first true cartridges. They had been used in Europe primarily for mounted troops for several decades before the Pilgrims landed. Gustavus Adolphus of Sweden is credited with having been the first general to supply his infantry with them early in the 17th century. However this may be, paper cartridges began to appear at Plymouth sometime after 1637, and by the beginning of King Philip's War in 1675, they were fairly common. They were not widely used by European infantry until after 1700.

Musketeer wearing a bandolier.
Note how he pours the charge from one cylinder down the muzzle.
From De Gheyn.



Full scale model of a sakeret mounted in Plimoth Plantation's reconstruction of the first fort.

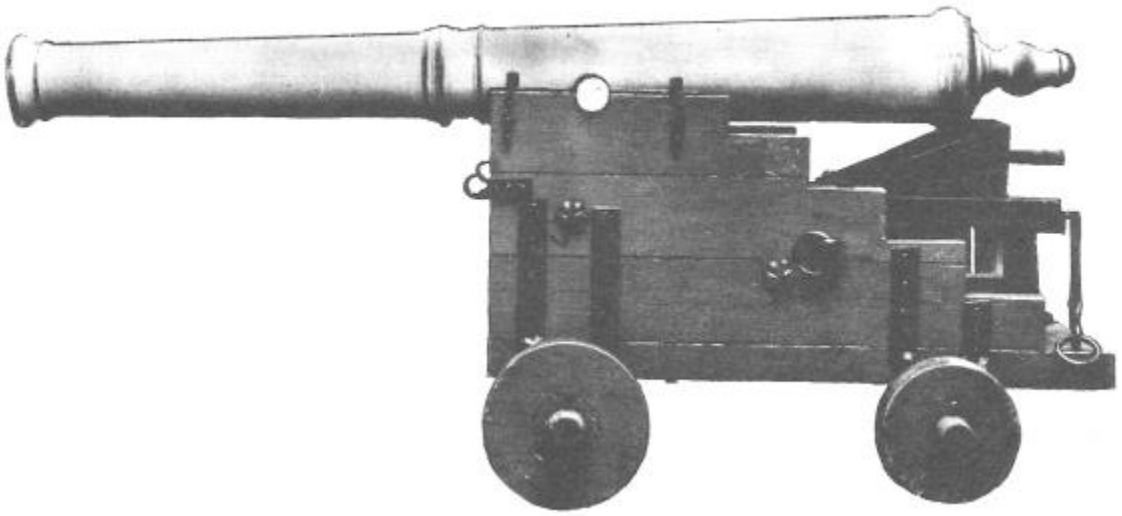
CANNON[1]

In addition to their small arms, the Pilgrims also brought some heavy ordnance. On a commanding hill overlooking the bay and landing site, they built a meeting house and fort with places for their cannon on an upper deck. On February 21, 1621, William Bradford and Edward Winslow relate how "the Master came on shore, with many of his saylors, and brought with him one of the great peeces, called a Minion, and helped us to draw it up the hill, with another peece that lay on shore, and mounted them, and a Saker and two Bases." In 1627 Isaak De Rasieres visited Plymouth and noted that the Pilgrims had six cannon of unspecified types in their fort and four "patreros" mounted in front of the governor's house at the intersection of the two streets of the town.

[1]In the preparation of this section I am much indebted to Mr. Edwin N. Rich of Wellfleet, Mass., a life-long student of early artillery who prepared the drawings from which the cannon in the reconstructed fort were made.

These guns were probably not new, and they may well have been part of the armament of the *Mayflower* itself. The largest of the cannon mentioned by name was a minion. This would have been a brass gun, which weighed between 800 and 1200 pounds. It would have had a bore of about 2.9 inches diameter and fired an iron ball weighing 3½ pounds for distances up to 1600 yards. The saker was slightly smaller, probably weighing 650 to 800 pounds. It would have had a bore of about 2.7 inches in diameter and shot a 2¾ pound ball up to 1700 yards. Since cannon designations were used rather loosely by the artillerists of the time, there is room for considerable differences in these dimensions. On Burial Hill in Plymouth are two early English cannons, one a minion [Pg 25]and the other a small saker or sakeret. These guns were

used as the models for those mounted in Plimoth Plantation's reconstruction of the original fort. Since it is presumed that the Pilgrims' guns came from the armament of the *Mayflower* and since they were dragged up the hill and mounted immediately, it has been assumed that they were placed on carriages from the ship, and so naval carriages of the period have been reproduced for the reconstructed fort.



Full scale model of a minion in Plimoth Plantation's reconstruction of the first fort.

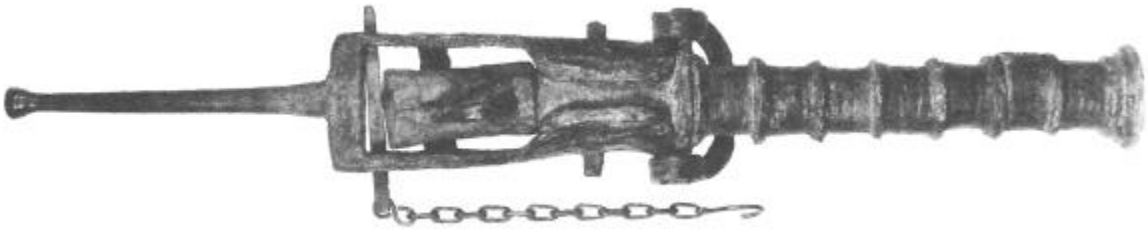
The loading and firing of one of these cannon was a complicated procedure, requiring the assistance of several men. The recoil from the discharge would normally drive the piece back away from the gun port. If it did not roll back far enough, the crew would seize the ropes or "training tackle" and haul it into a position that would permit them to load it. First a wet sponge on the end of a long handle was run down the barrel to put out any sparks that might remain from the previous shot. Then came the powder which was handled in one of two ways. Sometimes the proper amount was fastened ready-to-use in a cloth bag or cartridge. At other times it was brought loose to the cannon in a wooden bucket with a purse-like leather top closed by a drawstring. From this "budge barrel," as it was called, the powder was dipped and inserted into the barrel by means of a copper ladle on a long wooden handle. After the powder was rammed home, a wad, was inserted and rammed, and finally the projectile which was forced home by a rammer.

This projectile might be either a solid ball or one of the more deadly anti-personnel missiles such as grape shot or cannister. Grape shot was made up of a series of small balls grouped on a wooden stand and wrapped with burlap or canvas. Upon firing, the stand and cloth disintegrated, and the balls spread out over a wide area. Cannister [Pg 26]shot was based on the same principle. In this form, however, the small balls or other iron fragments were enclosed in a thin metal cylinder which came apart upon

firing. Other missiles included cross bar and chain shot, in which spheres or hemispheres were joined by a bar or several links of chain. These were particularly useful against ships because they revolved in flight and cut rigging. It is doubtful if the Pilgrims had all of these forms of projectiles with them in 1620. Some of them were just then developing. But by 1690, any or all of them might well have been used at Plymouth.

Some seventeenth century artillery projectiles.
From left to right: solid shot; fragment of shell, stand of grape shot.

Once the gun was loaded, a few more steps were necessary before it could be fired. It was primed by pouring powder from a flask or horn into the touch hole. Then the crew again seized the training tackle and pulled the gun back into position. The gunner aimed it by directing the way in which the men pulled the ropes and by shifting the position of the wedges under the breech of the barrel. Then he took a forked staff, known as a linstock, which held a length of burning match similar to that used in the matchlock muskets. He touched the lighted end of the match to the powder in the touch hole and fired his gun.

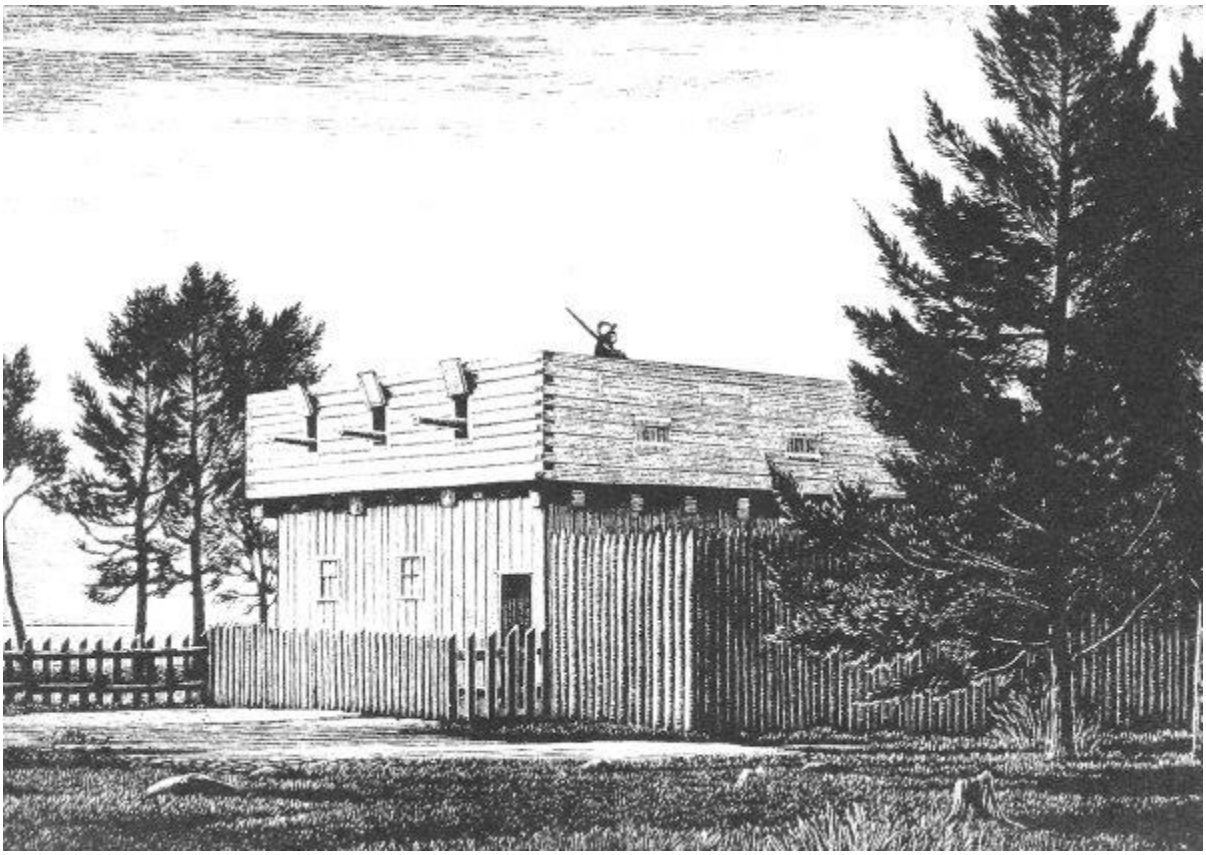


"Patrero" or "murderer" viewed from above.
For a side view see title page.

Side view of base.

The two bases in the fort and the four "patreros" in front of the governor's house were much smaller guns. Both types were made of iron, and both were breech-loaders. The guns of this category were called by a great variety of names, and the situation is even more confused than with the larger pieces. The type of base used by the Pilgrims, however, was probably a gun some 4½ feet long, which weighed about 200 pounds. It would have had a bore about 1¼ inches in diameter and fired either a lead ball weighing 5 ounces or an iron one weighing 3 ounces. In order to load it, the ball was placed in the breech end of the barrel, and a separate chamber filled with powder was placed behind it and fastened securely with a wedge. The "patreros" were probably of the type known also as "murderers." These differed from the bases in that the bore expanded in diameter from breech to muzzle. Instead of a single ball, these guns were normally loaded with small shot, short lengths of iron bar, or broken pieces of iron and stone. The expanding bore helped spread these projectiles as they left the muzzle and thus made the murderer a vicious anti-personnel weapon at short ranges. Both the base and the murder were mounted in forked swivels of iron set in a wooden pedestal.

Base viewed from above.



The first fort as reconstructed by Plimoth Plantation contains a collection of arms and armor of the period.
Woodcut by Thomas Nason.

These were the weapons which the Pilgrims brought from Europe to win their new home. They came without sufficient arms "... nor every man a sword to his side; wanting many muskets, much armour, &c." Once in this country, however, the need not only for enough weapons but also for good weapons was soon felt. Forced by their dependence on their arms, the settlers soon threw away their armour and their pikes, discarded their matchlocks for more efficient guns, and began to use paper cartridges well before these innovations were generally adopted in Europe.

This booklet has been published by two organizations devoted to the study and interpretation of all aspects of Pilgrim history.

PLIMOTH PLANTATION

Plimoth Plantation was founded in 1948 as a non-profit educational organization to foster public understanding of the Pilgrims of Plymouth. To this end the corporate organization, Plimoth Plantation, is re-creating the Plimoth Plantation of 1627, the farming community from which sprang the Old Colony of New Plymouth. It is a functioning village, over half completed (in 1969), in which guides and hostesses in Pilgrim dress carry on the tasks necessary for daily living and [Pg 29]sheep and chickens wander the narrow street. It is open to the public from April through November and is visited by more than 250,000 people per year.

The Plantation also owns and exhibits two re-created Pilgrim houses near Plymouth Rock, the Mayflower II and a small sailing craft—a Shallop—of the type used by the Pilgrims for coastal trading.

These public exhibits are backed by a strong research and publication program covering the European background of the Pilgrim story to the end of the 17th century.

The Plantation seeks the support of all who wish to help perpetuate the Pilgrim tradition. Those interested in membership should address the Membership Director, Box 1620, Plymouth, Mass. 02360.

THE PILGRIM SOCIETY

The Pilgrim Society, Plymouth, Massachusetts, was organized in 1820. Its main purposes have been to insure a universal appreciation of the Pilgrims and their contributions to the American heritage. In Pilgrim Hall, one of the oldest museums in the country, there is displayed a collection of Pilgrim relics and material bearing on the history of Plimoth Colony. Every effort is made to enlarge and improve this collection and to preserve in the library of Pilgrim Hall a comprehensive history of the Pilgrims and the colony they founded. The Society supplies its members with "Pilgrim Society Notes" containing articles which would otherwise remain undiscovered among the papers of the students of Pilgrim and Colonial history.

The Society was, in its earlier years, responsible for the erection of the Forefathers Monument, which stands on a hill behind the Town overlooking Plymouth Bay; and for preserving as a park the area directly behind Plymouth Rock, known as Cole's Hill, which served the Pilgrims as a burying ground during the first precarious winter in the settlement. Today the Society is custodian of these memorials and of others erected by various societies in the Town of Plymouth to honor the Pilgrim Fathers.

Annually on Forefathers Day, December 21st, the Society celebrates the Landing of the Pilgrims at Plymouth with a suitable observance of the occasion at the Annual Meeting of the Society which many of the members attend.

Those interested in applying for membership are invited to communicate with the Secretary of the Pilgrim Society of Plymouth. Dues are $5.00 per year, and the money thus attained, together with admission fees to Pilgrim Hall and a modest endowment supply the funds for the activities of the Society.

Those interested in a documented and more detailed study of arms and armor in all the colonies should see the author's book, Arms and Armor in Colonial America, 1526-1783, *the Stackpole Company. Harrisburg, Pennsylvania, 1956.*

Printed 2021 for Knowledge Keepers Bookstore as a supplement to the study guide for Miles Standish, the Puritan Captain.
KnowledgKeepersBoostore.com/shop