

## RIFLES AND RIFLE SHOOTING.—IV.

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Arrows, besides their ordinary use, were sometimes employed as vehicles to convey combustible matter to set on fire an enemy's works or shipping. On these occasions phials of quick lime or other inflammable matter were fixed on their heads and discharged from bows, and this was practised long after the introduction of gunpowder. At the siege of Harfleur—1416-17—raging fire was, we are told, hurled against the French. Grove says that "arrows with wild-fire and arrows for fire-works are numbered among the military stores at New Haven and Berwick in the first year of Edward VI.

The best length of bow was 5 feet 8 inches, but in earlier times they were much longer. The first arrows were made of reeds, afterwards of carnal wood, and finally of ash. The ends were feathered with the plumage of the goose, and Henry V ordered the sheriffs of the several counties of England to procure proper feathers, by picking six feathers from the wings of each goose, in order that there might not be any lack of arrows. By an Act of Parliament in the reign of Henry IV it was enacted, that the heads of arrows and quarrels should be boiled, or brazed and hardened at the points with steel, and that every arrow head or quarrel should bear the name of the maker, under pain of imprisonment.

Archery was the national art of England, and even from the pulpit exhortations to excel in it were often heard. On 12th April, 1349, Bishop Latimer, when preaching before Edward VI., took occasion to denounce the vices of the age, and to advocate warmly a revival of those noble and manly pastimes in which he had excelled in his youth: "In my time," said the prelate, "my poor father was so diligent to teach me to shoote, as to learn me any other thing; so I think other men did their children; and he taught me how to draw, to lay my body to the bow, and not to draw with strength of arms so other nations doe, but with strength of body. I had my bows bought me according to my age and strength; as it increased in them, so my bows were made bigger and stronger, for men shall never shoote well except they be brought up to it. It is a right goodlie act, a whole some kind of exercise, and much to be commended in phisicke."

With the introduction of gunpowder and the gradual use and adoption of fire-arms, both the long and crossbow fell into disuse, but the musket had a long and hard struggle to supplant them. It was a contest of 250 years. The bow had, as stated, a range up to 400 yards, greater in fact than that of the musket, it was much less expensive, could be discharged with greater rapidity, and was much more easily carried by the soldier. A military writer in 1580 said of the musket "except the noise in one's ears, to which he will henceforth be accustomed, I think that it is an arm of very little effect, and I hope that we shall, one day, give up its use." The invention of the flint lock in 1635, decided the contest in favor of the musket. Armored knights clamored against the use of firearms, as their heavy armor could not be made proof against the heavy bullets, and it was not a usual thing for a well armored knight to be killed. A good suit of armour would generally repel the blow of an arrow or quarrel, and the horses—not so fortunate, being driven wild with rage and pain caused by the wounds inflicted by missiles, would rear and throw their riders; but the doughty warriors would roll about for a time upon the earth, and then retire with only a few bruises to engage in a tilting match the next day. In many battles not a knight was slain, for even when unhorsed it was difficult to administer the *coup de grace*, for the *misericorde*, or dagger of mercy, refused to penetrate the joints or chinks of a well made suit.

(To be continued.)

## REMARKS ON REVOLVERS.

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There is perhaps no weapon for which there has been so great a demand of late years as the revolver. The civilian provides himself with this arm for home defence, while the military or naval officer considers it a necessary part of his equipment. The revolver has also been recently issued on service to our cavalry regiments, to sergeants of infantry, and to non-commissioned officers and drivers of royal artillery. The coastguards carry revolvers and on board ship the blue-jackets are similarly armed. The burglar having added the revolver to his professional tools, it has become necessary to give the metropolitan police this weapon also.

Although the revolver has come into such general use there is probably no weapon which is so little understood, and in the purchase

of which the customer is so entirely at the mercy of the gunmaker from whom he buys it. Very few purchasers of revolvers understand the merits of the different types of these pistols which are offered for sale, and a still smaller number have the opportunity of testing the mechanism or the power of the weapons they buy; but there is no arm which should be selected with greater care, as, when required for use the owner is generally in extreme peril and the failure of his arm may cost him his life. The revolvers which are offered for sale vary considerably in size and calibre,—from the 6-shot holster pistol with a barrel  $7\frac{1}{2}$  inches in length, weighing 2 lbs. 7 oz., and having a calibre 0.45-inch or upwards, to the 7-shot 0.22-inch bore, which weighs 4 oz., and has a barrel  $2\frac{1}{2}$  inches long.

In the following table, which compares the powers of the various types of revolvers, only those are considered which have a calibre of 0.40-inch or upwards, the pistols which have a less calibre being considered more as dangerous toys than as weapons. The small revolvers which have calibres of from 0.38 to 0.22-inch will no doubt kill a man at a very short range and when the bullet strikes a vital spot; but for general use they are not to be recommended. There are also some revolvers made which have a greater calibre than 0.45-inch, and some which have cylinders chambered for a larger number of rounds than six (twelve, or a greater number of chambers being sometimes met with), but these are not recommended, as their weight renders them unhandy.

Useful revolvers may be divided into two classes—the "holster" and the "belt or pocket" revolver. Under the designation of "*holster revolver*" we may consider all such as weigh 2 lbs. and upwards, having barrels varying in length from  $7\frac{1}{2}$  to  $5\frac{1}{2}$  inches; while the "*belt or pocket revolver*" should not weigh more than 1 lb. 15 oz., or have a barrel longer than  $4\frac{1}{2}$  inches. Anyone who has constantly carried a revolver, either when mounted or on foot, will readily understand the reason for only admitting the small and light pistols into the latter class. The above pistols may be either "single action" or "double action," these being the terms given to the nature of the mechanism by which the cylinder is revolved and the hammer brought to the position of full cock. A "single action" revolver must have the hammer brought to full cock by the thumb of the right hand, this motion also revolving the cylinder and bringing a fresh chamber opposite the barrel. The "double action" revolver may be treated in the same way, but also by merely pressing the trigger its hammer can be raised and the cylinder revolved, and on continuing the pressure the hammer is released and the cartridge exploded. This is termed "firing by trigger action." "Single action" revolvers are now seldom made, as those having "double action" mechanism are considered to be more useful weapons.

Cartridges, or empty cartridge cases, are ejected from the cylinder by two different methods:—with "non-extracting pistols" by means of an ejecting rod, or with "extracting pistols" by having the frames jointed, so that on lowering the barrel an extractor withdraws the cases or cartridges from the cylinder. Only two extracting pistols appear in the following table, but probably this mode of extraction will soon be adopted for all sizes of revolver, as a rapid means of removing the empty cases adds much to the efficiency of the arm.

Cheap revolvers may be bought for a few shillings, but they are pretty sure to become unserviceable after having been in use for a very short time. The price at which they are sold renders it quite impossible that anything but the most common materials and the poorest class of work can enter into their construction, and although they may fire a few rounds with accuracy they will give way under a more lengthened trial. Even high priced revolvers are frequently found to fail, the usual defects being miss-fires or the cylinder not revolving on the trigger being pressed on the hammer being brought to full cock.

Supposing the cartridges to be perfect, the miss-fires are caused either by the main spring being too weak, the cap of the cartridge not being brought directly opposite the nose of the hammer as the cylinder is revolved, from the hammer nose being too short, or not clearing the sides of the hole in the frame through which it acts. The hammer being loose on its axis-pin will also cause miss-fires. The failure of the cylinder to revolve is caused by the pawl or lifter being too short, or the ratchet on the cylinder in which the pawl acts being defective. With cheap and badly made revolvers these defects may not be noticed at the time of purchase, but after a little wear the mechanism ceases to act, owing to the various parts of the action being of bad material, or not being properly hardened on their bearing surfaces. For instance: if the tumbler bent is left soft it will, after being a short time in use, become so worn that when the trigger is pressed the hammer will not be raised, or if the revolver is "single action" the trigger nose will not remain in the bent of the hammer when the latter is placed at full cock.

Occasionally the failure of the cylinder to revolve is not due to a defect in the pistol, but is owing to the ammunition used. Some-