

must always be anticipated, the necessity of a new type should arise, our engineers, we doubt not, would be able to give it the most serious ballistic qualities and a mechanism proof against anything. As for the question of caliber, that is, as we have explained, a complex problem. Between the dimensions of the projectile and its effects there exist relations such that it is necessary to maintain a just equilibrium between the various elements, and that it would be impossible to reduce the caliber below a certain limit without causing the ball to lose in force and velocity what it gained in lightness.—*L'Illustration*.

The War-power of Good Shooting.

The shooting of the Infantry soldier is a subject that is attracting more attention, if possible, every day. A study of the official reports, however, induces the belief that the results are not altogether commensurate with the trouble taken.

The infallible test of all military training, viz., the practical experiences of active service in the field, certainly appears to bear this view out. Statistics on the subject are extremely difficult to obtain, and vary very much according to circumstances, but the percentage of hits to rounds fired in the field is undoubtedly a very small one indeed, probably amounting in recent European warfare to not more than half per cent, possibly as low as a quarter. For the purposes of my argument, however, and in order to avoid even an approach to exaggeration, I will take the higher figure of half per cent. This means that to hit one of the enemy a soldier has to fire the stupendous number of two hundred shots. Surely a statement calculated to take one's breath away; and yet there is no mistake about it, the result of all our elaborate and painstaking training is that the subject of it hits his target once in two hundred attempts. An ounce of such fact as this is worth many tons of theory, and the question at once strikes one, "Is a system of musketry training that can do no better than this a satisfactory one?" To which an impartial observer must reply that that under present conditions, and with the means at our disposal, it is undoubtedly the very best that could be devised. The "conditions" are that the very largest number of men possible shall be trained; the "means" imply limited ground for practice, and owing to the large number trained, and the enormous cost of ammunition, limited cartridges to shoot.

The "conditions" of modern war in the first respect are almost a complete reversal of the military policy of the ancient fighting races of Europe. Now we are content to sacrifice efficiency to numbers. As long as vast numbers of men can be placed in the field on the outbreak of war, it seems immaterial that their training should have been of the very shortest and slightest description. It is

argued that, as a medium for destruction, one man laying on his stomach firing his rifle at eight hundred yards range is as good as another, and therefore that 100,000 men must be better than 50,000; but if each of the 100,000 men requires two hundred cartridges to bring down his man, and each of the 50,000 owing to better training, can bring down two men with the same number of rounds, where does the advantage of the larger force come in? It is obvious I think, that if the smaller force can do the same amount of work, it must be more economical and more suitable in every respect.

The early Greeks and Romans did not employ vast armies of half-trained men; on the contrary, their forces, compared with those of continental nations of the present day, were comparatively diminutive; but we know how strict was their discipline, and how highly trained they were in all physical and martial exercises in order to inure them to the hardships of war. The results were seen in their extraordinary victories over vastly superior numbers. It may be urged that their opponents were barbarians, almost savages; possibly, but they were not deficient in courage, and knew how to fight, and the hand-to-hand method of warfare in vogue in those days was surely more favourable to superior numbers than at present. How marvellous was the battle of Marathon, in which 10,000 Greeks utterly routed more than ten times their number of Persians! How still more wonderful the famous march of Xenophon and the 10,000, when isolated in an enemy's country 1500 miles from their own land; disdaining all overtures for surrender, even after the treacherous slaughter of their generals, they elect a new leader, and forming themselves in a hollow square with the baggage in the centre, repulse all the attacks of their enemies, and finally gain the Black Sea, having covered the 1500 miles from Babylon to Trebizond in 122 days! Surely an extraordinary example of what a small well-trained force can effect, especially when it is considered that the Persian armies were numbered by hundreds of thousands, and provided with all the engines of war so much in vogue in those days in the East, such as elephants, chariots with scythes attached to their axles, and moveable wooden redoubts drawn by oxen and filled with archers. What man has done man can do again. Is it impossible, therefore, that even in our days a small but highly trained army might contend with success against a largely superior force. Let us imagine a *corps d'élite* of 25,000 men so trained in the use of the rifle that each man can be relied upon to make five per cent of hits to rounds fired. Is it a very extravagant estimate five hits in a hundred rounds? What would a sportsman say! And what chance would an army of 100,000 men, trained to the extent only of half per cent. of hits, have against a corps of such marksmen as these, provided each with two hundred rounds per man? Weigh too

the difficulty of manœuvring so large an army on the battlefield under modern tactical formations, and the impossibility as was experienced frequently in 1870 of utilising them all in the fight. Set this against the advantage of a compact, mobile, well-found corps such as I have described. Is the idea so very chimerical?

Have we not had a remarkable lesson of the deadly power of a long-range rifle in the hands of men trained like sportsmen to stalk their game? What of Laing's Nek? what of Majuba? what of the Matabele war? Of what use are any number of half per cent. shots against such marksmen as those? But this is a subject not to be pursued lightly by any soldier, but one over which we prefer rather to draw the veil of oblivion. Here too I must pull myself up short. I fear my pen has run away with me and involved me more deeply than I ever intended in a scheme so radical as the above. However, it is too late to retract, and I must prepare for a chorus of disapproval, and a weighty consensus of opinion that any such idea is purely Utopian and absolutely impracticable under modern conditions. I bow to the decision in advance, and will descend from the high flights of a volatile Imagination to the practical business of every-day soldiering. Here I think it must be admitted that something can be done provided our system of training be made a little more elastic. To make every man of our Infantry a finished shot would require an expenditure of money and trouble that is completely out of the question. Even were time and expense no object, there is always a number of men physically incapable of acquiring the art in every battalion. On the other hand again in every battalion, in every company, there are men who develop at once the qualities necessary to make a good shot. These men become marksmen year after year in their annual course of training, but beyond the fact that they occasionally compete in matches, inter-company or inter-regimental, no attempt is made to utilise their special gifts. In the field they are squadded with the other more or less indifferent shots of their sections or sub-sections, and exercised as machines to pour in a certain quantity of lead under conditions of distance, ect., laid down for them by their half-company or section commanders who may, under our present organization, be infinitely inferior to them as judges of distance and experts in the handling of their weapon. Here I venture to think there is scope for improvement. I would form all the marksmen of a battalion into one or more separate companies. These companies I would place under the command of the smartest officers of the battalion on the same principle as the old flank or grenadier companies, especially selecting such officers as were good shots themselves, or else skilful in training their men in shooting. I would grant to these companies a large, a *very* large, extra issue of ball ammunition, and I would