

cavalry equipments generally. In the meantime we recommend every officer of the active Cavalry force, who wants to know something more of his own arm of the service than the mere A B C, the "three right" and "three left," to procure the translation of Bismarck's work by CAPTAIN BRAMISH, and the little volume written by poor CAPTAIN NOLAN, who fell at Balaclava.

THE ARMY LIST.—We observe that a few errors appeared in the "Army list," published last week. They are corrected to day. It is not a very easy matter to arrange a list of this kind for the first time, and therefore we hope that our friends will hold us excused.

THE RIFLE SHELL.

It is to be regretted that in OTTAWA there is no wood-cutter, except those who use a saw-horse and axe—there are plenty of them, and right hardy chaps they are, but we want just now an operator on box-wood, not a splitter of hard maple, and tools a little more delicate than an axe and a wood-saw. But *faut de mieux*, we must do our 'goodest' by description, when we can't get the wood-cutter.

COLONEL JACOB, an officer of the Bombay Horse Artillery, but now Commandant of the Scinde Irregular Cavalry, an officer well known in India, as one of the most gallant and enterprising of the host of brave men who uphold the banner of England in the East, and a scientific soldier to boot, has invented a RIFLE SHELL, which we now propose to describe.

The rifles from which these shells are fired are four grooved, 30 inches long in the barrel, 32 gauge, and with the sword-bayonet, weighing 10 pounds, or a little over. They were manufactured by Swinburne & Co., Birmingham.

The range of these rifles is very accurate up to 1800 yards, but the conical ball will attain, if not obstructed, a range of 2,500 yards. The shape of the ball, which is two and a half diameters in length, is exactly that of the ball fired from the Enfield rifled-musquet, except that the ball is provided with four projecting ribs which fit the four grooves of the rifle. So far for the leaden or ordinary ball.

But Colonel JACOB has adopted a shell to fit these rifles. The shell is of lead, formed precisely like the ball, except that the point is made of steel, which gives a vastly greater penetrating power, and that within it there is a cavity, which is filled by a small copper tube containing half a drachm of fine powder, and a very small quantity of percussion powder, at the head. As the peculiar motion given by the grooves of the rifle, on the discharge, invariably sends the ball point foremost, the percussion powder is ignited by contact with any hard substance, and the shell explodes.

A series of experiments was made at Kunahee, in Scinde. The result we shall shortly describe. A cart containing four boxes, made and packed, just like those attached to the Field-batteries of the Royal Artillery was placed at a distance of 1800 yards, 40 yards over a mile. Four gentlemen including Col. JACOB opened fire on these carts with the rifle and shell, and before 30 rounds had been discharged, the carts representing an enemy's caisson of ammunition blew up with a loud explosion. The experiments were several times repeated with the same success at different ranges.

Another experiment was tried on a larger

scale. Five hundred pounds of powder packed between two layers of plank, were placed against a "butt," a high stone wall 14 feet thick at the base. The size of the mark was just 10 feet square, the range 1800 yards. We are not told how many shells were fired, but a shell fired from a rifle penetrated the thick planking, and exploded the powder with terrific force. The rifle shell as it seems from the description, penetrated 4 inches of timber, the explosion takes place at the moment the timber is struck, and the fire is carried onwards.

It is reported that one of the Rifles made by Sir laburne will stand 200 rounds, without becoming inconveniently foul.

A sham battery of artillery was constructed of planks and placed in the same order that they would appear in the field, and was so much damaged after 15 minutes firing by half-a-dozen men at 1200 yards, that, if a real battery had been placed there, it would have been completely disabled.

The use of these shells was perfectly well known to the British Government before the Crimean war. They were not used there, tho' they might have been, with good effect on many occasions. It is excessively likely that that wonderful department, the "Circumlocution office" was not consulted, and it is on the cards that the interests of the Barnacles may have been compromised; at any rate, seeing the conspicuous result of what is evidently a very famous invention, we can say, as a well known General officer is asserted to have said, having once come in contact with an official in the "Circumlocution," "I don't blame you, Sir, but damn your department."

A circular from the Horse Guards to the commanding officers of Regiments, says, "In consequence of its having been found that the practice of 'snapping' which was ordered by the Circular Memorandum of September 25, 1855, to be discontinued, on account of the injury caused thereby to the firelock, is of the utmost importance to the effectual carrying out of the position drill as prescribed by the 'Instruction of Musketry,' the late Field Marshal Commander-in-Chief, in concurrence with the Secretary of State for War, decided upon the adoption of snap-caps of a pattern which has been for some time under trial at the School of Musketry without any breakage of either cock, swivel or any other parts of the rifles with which they have been issued. A number of these new snap-caps being now ready, H.R.H. the Duke of Cambridge has entered into an arrangement with the War Department for their being issued to every Regiment and Depot at home and abroad, according to their establishment, and without the necessity of separate requisitions from Commanding Officers. The snap-caps will be attached to the musket by a small chain, or elastic band, and with every fresh issue extra leathers, in the proportion of twenty per company, will be supplied for the purpose of being fitted into the metal frame in lieu of others as they become worn out, an operation attended with no difficulty, and one which, it is stated, can be effected by any handy man in a company. In the event of a soldier losing his snap-cap, either wilfully or through neglect, the cost thereof, as fixed by the War Department—viz., threepence each, will have to be made good by him at his own expense.

VOLCANIC FIRE ARMS.

This extraordinary weapon has not yet reached this Ultima Thule, the city of the woods, but from what is said of it, it must surely be a "stunner." It is said to be a rifled barrel, finished with great exactness—can be loaded with from 7 to 24 balls, in from 4 to 10 seconds, and can be discharged, in any weather, 25 times in 50 seconds. There is neither cap, nor priming, nor lateral discharge. The ball is a loaded one on the Mink principle, water-proof, sure and safe.

It appears that the Volcanic repeating pistol, has been taken to England and tried by Colonel HAY, the Commandant of the School of Musketry at Hythe. It is said that Colonel HAY used a pistol of this description of 8-inch barrel, which discharges nine balls in succession. Colonel HAY fired 27 times, at an 8-inch target at 100 yards, and put 9 balls within the ring. He then moved back 200 yards more, and again fired 9 balls, putting in 7 of them. At 300 yards he again fired, and put 5 of the 9 balls within an 8-inch target, and 2 in the Bull's eye. We take it that this is shooting in a style which can hardly be come up to even by the "tallest shot among the crowd."

We believe that there is an agency for these arms somewhere in Toronto, and that they are not dearer than COLT'S arms. Not having seen them we can only speak from report, but if what is said is true, they must be far superior to the repeating weapons of COLT.

We trust that any officers of HER MAJESTY'S regular forces into whose hands this paper falls, will thoroughly understand, that when we devote our time and trouble to the publication of "small things," we do so, not for the benefit of men who make a profession of arms, and are consequently supposed "to know all about it," but for the information and instruction of men whose business does not lie in that direction, but who have, at the call of their country, donned the soldier's jacket, and given up their time in a great measure to learn a soldier's duty. *He Aude Senua Ducunt*; men must learn the small things before they learn the great ones, consequently that which we publish will in most cases be a merely thrice-told tale to the old soldier, but will be his first lesson to many a one among our raw recruits.

THE ROYAL ARTILLERY.

The *Naval and Military Gazette* of the 3rd of January, says, it is rumoured that the corps of Royal Artillery which now consists of fourteen Battalions, and seven troops of Horse Artillery, is to be divided into sixteen Regiments, independent of each other, just as so many Regiments of Cavalry and Infantry of the line.

The Editor of that very excellent paper, says that although this system answers well with Continental armies, he cannot see how it will work with our Colonial service. It is perfectly clear that the Companies composing the "Regiments" will be just as much scattered about among the various colonial dependencies of the empire, as they are now, under the "Battalion" system. Formerly the duty was taken by Battalions, which were distinguished by different feathers, thus the fourth Battalion which had black feathers and were nicknamed, "the Rooks," were employed in India, before the H. E. I. C. had any Artillery of their own, but it seems that the system did not answer.