

agreed that Sir John Michel and no business in Wilton on Saturday, and if he won a victory at all he lost it again by running inside the post. Sir John Michel, therefore, it is said, was today allowed to go on the northern side the Willey only by favour, and was strictly debarred from occupying Yarnburg Castle, though he would naturally have done so had his foothold been sound.

Very little freedom of action was permitted to the rival generals. Last night the Commander-in-Chief drew up instructions which restricted Sir John Michel to the lines between Chitterno Down and Lamb Down, and Sir Robert Walpole to the ground between the Barns and Willey village; the latter had the advantage of the strong position known as Yarnburg Castle, the remains of an old Roman fort and entrenchment. The movements of either side being thus, one would think needlessly hampered, no use could be made of the cavalry to feel the enemy, and the contending armies were perforce drawn up in battle array very much as they might have been in the Long Valley, only that the ground being so much more accidented, troops could be moved from point to point with less exposure, and flank movements might be attempted with some chance of success. As a refreshing change, which must have been grateful to his forces, General Walpole made up his mind to be the assailant for the first time, and all his brigades were in position ready to begin at the appointed hour—nine o'clock—when an order came from the Duke to defer the operations for half an hour. Whether this delay was prejudicial to the Northerners as the staff appear to think, is doubtful, but at any rate such an interference in the programme at the eleventh hour was indiscreet and unpopular. The explanation of the why and the wherefore has been offered, and even if the distinguished foreigners had "overslept" themselves, as has been suggested, that was no valid reason for "changing the fixture." The engagement commenced with an artillery duel of some duration; then the 5th Division, under Lord Mark Kerr, advanced on the left, covered by the guns in Yarnburg Castle; but having crossed the valley which runs down towards Fisherton, and faced the steep ascent to Lamb Down, they met with an unexpectedly warm reception. The Guards and the 16th Regiment were strongly posted in a shelter-trench, dug expressly during the morning, all along the crest of the hill for upwards of a mile; a battery was behind them, and Maxwell and Pakenham's brigades, on whom devolved the task of storming the heights failed in their object. But why chiefly? Because Sir A. Horsford brought up an overwhelming force to support his skirmishing lines, whereas Walpole had dribbled his battalions all over the field in such a way that they could be massacred in detail, as were his cavalry on Thursday last, and his artillery, as on Saturday, were "nowhere." On his left, therefore, he was unsuccessful, except inasmuch as he subsequently succeeded in occupying Willey. On the right, thanks to Colonel Baker's temerity and Colonel Marshall's good management, he was less unfortunate. The Southern Light Brigade made a bold raid from Chitterno Down, round Gilbert's Copse, and were about to swoop down on the Household Cavalry, when Marshall skilfully withdrew his regiments, and the six guns, hitherto so carefully masked, opened a brisk fire. Hussars and Lancers bent a hasty retreat, but every saddle must have been empty ere they got out of range, and to that effect

was the umpire's decision. McMahon's heavy cavalry, not deterred by the examples that had been made of their comrades, also essayed to charge, but their discomfiture was equally signal. In concert with Marshall, the 9th Lancers and 13th Hussars worked round the enemy's left flank, and would have fallen upon his infantry with great effect, but, lo! and behold, the dead Hussars and Dragoons had reformed, and were ready to receive them. By this time the heavy clouds, the driving rain, and the dense smoke, which could not lift owing to the weight of the atmosphere so completely obscured the view that North could not be distinguished from South, the various positions could not be apprehended, and dire confusion was imminent, when His Royal Highness ordered the bugle to sound, and the combat ceased. Hitherto, with rather a wint of consideration, the troops have each day been detained on the ground until the Duke had finished his admonitory address, but today they were permitted to march off at once. The Northern Army will encamp to night on Stonehenge Down, the Southern in the neighbourhood of Berwick St. James, and to-morrow the last struggle will take place, Walpole holding Amesbury as his base of operations. No decision as to which corps victory belonged was announced on the field, but the general impression is that Michel has again "scored." In spite of the inclemency of the weather, the Prince of Wales was present throughout the day, and our hereditary legislators were again in great force. The foreign officers were sumptuously entertained at Longleat yesterday, and a large house party assembled to receive them, including the Duchess of Buccleugh, the Ladies Scott, Lord Denbigh, &c.

(To be continued.)

The cavalry boot *versus* overall controversy is in full vigor in the French cavalry. The authorities have not yet decided whether the pantaloons and boot to the knee should be adopted or not in the French Army. The French officers say that the boot has no doubt great advantages, and allows the rider to have a closer seat on horseback, but in wet weather it shrinks, and becomes utterly useless, unless retained night and day on the leg. In one of the Hussar regiments now in camp at Roquencourt, near Versailles, the men are wearing a new pattern of "booted overall," which looks very well. The overall is made of red cloth, as usual, but fitting rather tight, something like breeches. The leather booting is brought up to the knee, and fashioned like a "Neapolitan" boot, so that the soldier looks, at a very short distance, as if he wore boots and breeches. The leather booting is made to fit pretty tight to the leg, and those who have tried it say it is quite as easy to ride in as long boots. It is thought not unlikely that these overalls will be adopted throughout the French cavalry.

It is reported, apparently on good authority, that four of the recently-constructed Russian 11-in. steel guns have burst upon proof with ordinary bursting charges, and that the Russian authorities have in consequence expressed an official opinion that the powder charge given to these new guns of one-sixth the weight of the projectile is much too great for their strength, and that future trials shall be made with powder charges not exceeding one-tenth the weight of the projectile fired.

OFFICERS SUORT COURSE "B" BATTERY, G. S.

GUNNERY SCHOOL.

QUEBEC, October, 1872.

GUNNERY.

1. Define the following terms:—

Line of Sight.

" Fire.

Axis of Piece.

Trajectory.

Range.

Point Blank.

Windage—Its advantages and disadvantages.

2. Give the formula for calculating the energy of a shot.

3. Give rule for calculating the distance of an object from an elevated battery. What would be the distance of a ship from Kingsbastion height, 317 feet, angle of depression $4^{\circ} 17'$, and at what distance would she be secure from the fire of the Rifled Gun on the salient, supposing she was able to close with the battery?

4. What advantage is gained by rifling a gun?

5. Which is the best in flight—a solid shot or common shell? Give reason for opinion.

6. Describe the Woolwich, Shunt, and B. L. Armstrong systems of rifling, and the advantages and disadvantages of each.

7. How would you construct a tangent scale and calculate the length of a degree, if the one in use was broken in action or lost.

8. What does the length of a gun depend upon?

9. Calculate the length of time-fuze for the following ranges.

S. B. Common	1,400 yds.
" Shrapnel	1,200 "
Large Mortar Shell	1,300 "
Small "	700 "
7 B. L. R. Common	2,000 "

10. What relation do the figures on the fuze bear to the time of flight?

ARTILLERY MATERIAI.

1. How is rope described in official demands? Given a rough rule to calculate its strength, and the size that will suit a given block.

2. How are guns described? What rules are laid down for their description?

3. How are the bursting charges for Common and Shrapnel Shells regulated? and state reasons, "giving bursting charges for Shrapnel Shells for 68, 32, and 24 P. S. B. guns?"

4. State when you would attach sabots to shot and shell. Describe the modes of attachment for land and sea service.

5. Describe Petman's Patent Service Percussion Fuze, with the aid of a sketch. What are the points of difference between this fuze and the General Service? Why is the former not adapted for use with Rifled guns?

6. How are shells prepared for Petman's L. S. Fuze, and how are such shells distinguished?