

favorable conditions of smooth water, close quarters, and distance measured by line, the public in general might have expected. To facilitate the aim, a canvas target, however, was erected near the turret, marked with six bull's eyes, eighteen inches apart, arranged in two vertical lines. At this target four preliminary or trial shots were aimed, each diverging from the straight line, over, under, and to the left of the respective bull's eyes, without any very clear rule. The initiated, however, know well enough that 12-inch shot at that range is subject to an eccentric movement which may be compared to that of a fish turning up its belly, or to the balancing motion of schoolboy's top before it settles down to a "sleep," and which causes inaccuracy of fire, whilst the quantity of pebble powder thrown out of the gun unconsumed at the first discharges led them to expect, in consequence of the gun becoming hot, that higher velocity and lower trajectory would be attained in the succeeding discharges. As time was being lost, it was deemed right to fire the fifth shot at the bull's eye on the turret eighteen inches below the top, and we may here observe that a piece of board, about two feet high was fastened on the turret above the bull's eye to aid the alignment of the sights. At length the *Holspur* hoisted the preconcerted signals, bang went the 25-tonner, and away went the eccentric shot, carrying off the little board resting upon the turret and a portion of the handrail, which disappeared like Dr. Dee's spirits in a streak of light blue flame, though not, we believe, with "melodious twang" the doctor speaks of. Another board was rapidly substituted, and this time a 600lb. shot was fairly lodged in the turret, but a couple of feet below the point aimed at. The shot hit fairly in a weak spot, on the side of an armour bolt, and touching the lower edge of the upper plate, along the middle horizontal line. The plate was lifted a few inches, but the point did not get through the backing, a fact which we shall presently be able to account for, in strict accordance with all we have asserted as to the disadvantages of the studded projectiles. The inner skin was bulged in and broken away, flinging about in all directions the heads of small screw bolts, and the nut and screw end of a great armour bolt, which might together have rendered the five men, who would have been stationed to the right gun, *hors de combat*. But the structure was otherwise sound, the guns and Scott's carriages quite unharmed. The base of the projectile was broken up, and it was said that it flew backward hundreds of yards, passing the *Holspur*, into the sea beyond. We spoke last week of the studded projectile of the 35 ton gun losing its head in the target when it was caught by its studs as a fish is hung by its gills, but in this case the severity of the blow, owing to the short range and the weakness occasioned by the stud holes combined, caused the hinder

part of the shot to break off and rebound like a racquet-ball struck against a wall. To reason this out more fully and seriously, every scientific man will admit that certain amount of "work" was expended by the breaking up of the projectile, and the friction of the studs when they took the armour, as proved by the brassy look of the grooves they bored in it. The question is not whether this was so, the fact so far is indisputable. The only room for question is whether the amount of work thus expended would have sufficed to complete the perforation, and thus have carried the shot through into the turret, and this we are disposed to answer in the affirmative.

The examination of the damages having been completed, and the turret revolved to prove its complete efficiency, the third 600 lbs. shot (reckoning the shot that missed the turret as the first, to avoid confusion), was aimed at the bull's eye between the ports. Again, the shot was untrue, but struck in a yet more important part, about two feet below the point aimed at, glancing along the glacis plate, and entering the turret, head and shoulders, on a line with the deck, broke off short by the front ring of studs. The studs had penetrated about three inches, and four of them had scored deep holes into the iron plate. This time the fish had been fairly caught by the gills, and what is strange its head and shoulders had been separated by the shock!

On the whole, therefore, we feel justified in our conclusion that the machinery of the *Glanton*'s turret has stood the severe test to which it was subjected, admirably, and that the projectiles—not the guns—have miserably failed. The special object of the experiment was to ascertain whether the guns, the gun carriage, the slides, and the turning machinery of the turret would stand fire, and it is due to the present Director of Naval Ordnance to recall that it was he who recommended the definitive adoption of Captain Scott's compound pivoting carriages for the 18, 25, and 35-ton guns mounted in turrets. There was the further desire to know what effect the concussion caused by the heavy blows on the walls of the turret would have on the crew inside. The men, we are told, had a *dazed* look, but sailors are not hens, and that "dazed look" strikes us as a somewhat suspicious circumstance, knowing as we do that men in the American civil war suffered permanent cerebral injury under similar circumstances. This part of the experiment, therefore, we cannot consider satisfactory; and, after all, the men are the most important part of the machinery. The fact that some of the boltheads and the two centre buffers were knocked off inside the turret, points to a distinct source of danger to the crew, and suggests that "mantlets" made of rope or leather must be fitted entirely round the inside of the turrets, and that all light fittings and other articles stowed inside must be excluded. What the

effect would have been of a shot directed against the pilot tower must still remain a matter for speculative thought, as the authorities seemed to have declined this part of the performance, which we understand was proposed to be included in the original programme.

Having once more, by reference to the results of a severe practical test, substantiated all we have said on the subject of the studded shot, and thus, as we think, thrown the *onus probandi* on the authorities if they persevere in their present system, we will only add that the experiment has conclusively established that the risk of the turrets of our ironclads being jammed under a heavy fire, or of the gun slides and machinery being damaged, is very slight indeed. This point was settled by a crucial experiment. After the last shot from the *Holspur*, the ports of the *Glanton* were unplugged, and in the presence of Mr. Goschen and other high officials, the guns were loaded with full powder charges and shot, and fired out to seaward over the breakwater. The carriages, the gear, and in a word, the whole of the fittings worked as perfectly as could be desired.

THE Fifth Prize Meeting of the "Stadeco na Rifle Association," was opened on the Lewis range, near Quebec, on the 6th August.

Our friends are sure to have a good time of it, and as their representatives at Wimbledon have won the Kolapore Cup, we may expect to see some superior shooting at the Lewis meeting.

REVIEWS.

We have to acknowledge the receipt of the *British Quarterly Review*, for July, from the Publisher, LEONARD SCOTT & CO., 140, FULTON STREET, NEW YORK. It is the organ of the English Non-Conformists, and the present number contains:

William of Occam.

Wit and Humor.

Report of the Commissioners on coal.

Mano Polo's Travels.

An Ecclesiastical Tournament in Edinburgh.

The Agricultural Labor Strike.

Germany—Prussian Influence on its Literature.

Results of Disestablishment in Ireland.

Contemporary Literature.

FORT GARRY, Man., Aug. 2.—Col. Robertson Ross and Mr. Sanford Fleming arrived last night, having made the trip in seven days.

The Indians are anything but quiet. A Chippewa squaw was killed by some Sioux Indians near the Portage. It is doubtful whether the surveying party out West will be allowed to proceed.

The Dominion election will come off here about the end of September.