

should, a disaster will surely occur. She must return to Philadelphia for repairs, and will probably go out of commission for awhile. Curses both loud and deep are showered upon the Philadelphia contractors who so imperfectly did the work for which they were so well paid by the Government: while great praise is accorded to Commander Yates, his officers and men, for their gallant conduct. Commander Yates himself speaks in the highest terms of the behaviour of all under him. The *Manhattan* has no breakwater, and the top of her turret is straight up and down, instead of being shaped like an inverted bell. If these defects were remedied, she would labor less in the sea and ship less water, so all authority agrees. But, at best, she is unfitted for rough seas, and brave men ought not to be sent to meet death in her like rats in a hole. The opinion is very generally expressed that monitors should be used exclusively for harbour defences, or at the entrances to bays and rivers, and that they should be constructed where they could reach the points designed for their use, without venturing to sea. They are exceedingly uncomfortable, even if kept dry; but it seems impossible to keep them so, and the pervading dampness renders them very unhealthy. The *Powhatan* has had much experience in towing this class of vessels, and several of her officers have served upon them. Captain Beaumont himself carried the *Miantonomoh* across the Atlantic and back. It is true he speaks in high terms of that vessel, but all the other officers concur that they would prefer to stay out of any monitor. Some of them, however, are much better than others, and where the work of their construction and repair is faithfully and skillfully done, life in them is endurable. But the *Manhattan* seems to be the worst of her class, and has always borne a reputation for ill luck. A later dispatch reports the *Powhatan* and *Manhattan* arrived at Wilmington, Del., December 1. The latter is still leaking badly in the steerage and on the turret. Captain Lee Davis arrived on a tug soon after she anchored, with orders from the Secretary of the Navy for a full re-survey of the monitor. It will probably take several days to repair her.

Our replies to the interrogatories of our correspondent "R" have resulted in arousing discussion on most important points connected with rifle shooting. In the issue of 23rd inst. there are no less than three important letters on the issues raised. We shall answer those objections in the order in which they appear. *Old Soldier* takes exception to our definition of the number of Canadian Volunteers that are capable of judging distances; the question as argued by our correspondent throws no light on the original query; there are no statistics to show what number are really to be found in our ranks. We are quite satisfied that practice is necessary to enable men to judge distance, but as all men are not capable of acquiring the habit, would it not be better to train the officers and non-commissioned officers in that necessary accomplishment; than to endeavour to train the mass of capables and incapables, an art that only one in ten can learn? Our correspondent's arguments

logically followed out would condemn the whole system of target practice as it at present exists. *Royal* is quite right, it is not only our deliberate opinion but that of the first Generals and Strategists of the age that the soldier that can't shoot is as useful as the one who can—the reason is very obvious—other qualifications besides being a marksman are necessary to win a battle or insure the success of a campaign, and if the quantity of lead thrown away in the various actions of the late war compared with the effect in killed and wounded is any criterion, the proportion of marksmen in any army is very small indeed, or they acquire a habit of firing wildly during an action, the result in every case being the same.

A bayonet charge is not an impossibility, if our correspondent had read the events of the actions of the late Franco-Prussian war he would find that it was just as useful a weapon as ever, and always finished the contest.

Royal's experience during the Fenian raid is no argument against the folly of officers doing the duty of rank and file, it will occupy the whole of an officer's time if he commands his men properly. If he undertakes to pick off his opponents he must neglect his duty.

Small bore shooting, as practiced by amateurs, argues nothing against our proposition; it is not a soldier's weapon; the gentlemen who practice it are not likely to figure in the ranks and the small bore has not received the approval of any military commission in Europe or on this continent.

The object which rifle matches are organized to encourage is, to accustom the rank and file of the Canadian Army to the use of the soldiers' weapon and not to make crack shots of every man—and we take it as a fact that as great proficiency has been obtained, as in any other organization, and that it is not possible to improve the present system.

The faults urged against the Martini-Henry have not developed themselves during the rather prolonged trial that weapon underwent before it was adopted by the SMALL ARMS COMMISSION as the weapon for the British Army.

Our correspondent takes this occasion to make an attack on the administration of the Canadian Army disclosing a state of affairs which, if true, is alike disgraceful to all concerned. Our columns are open to fair discussion not to covert attacks, and we see no reason why any officer cognisant of these disgraceful proceedings should not at once bring them to the notice of the proper authorities. The Press is not the proper vehicle for preferring charges affecting the administration of the Army. We cannot coincide with our correspondent's wish respecting the Dominion Rifle Association, it is a most useful institution and only needs to be properly directed to produce results similar to those produced by the world renowned Wimbledon.

An *Enquirer* mistakes a typographical error for a grammatical blunder, and asks a rather foolish question, which only be replied to by asking in return how he would "arrange an advance through a stump field or bit of bush"?

We know that six per cent. of the bullets fired in action are effective by the returns published of the cartridges expended in actual fight, and of the result in killed and wounded.

We publish to day the examination papers of the "Officers' Long Course Gunnery School, Quebec," of which Lieut. Colonel T. B. SPRANOE, R.A., is commandant, and for clearness of details, practical value and scientific attainment they reflect great honor on the gallant Colonel as well as display conspicuously his aptitude for conducting such an important institution and one destined to produce such a powerful effect on the future of the Canadian Army. In order to judge of the value of the questions in these papers we could wish to submit the answers to our readers, but we can only congratulate the gallant Commandant on the admirable system he has organized.

OFFICERS' LONG COURSE.—GUNNERY SCHOOL, QUEBEC.

November, 1873.

GUNNERY.

1. What are the forces that act on a projectile fired from a gun, and in what ratio does the force of gravity increase?
2. Noticing the time which elapses between the flash and report of an enemy's gun to be three seconds, calculate the distance, the elevation, and length of fuze for a common shell required to return the fire from the rifled guns mounted on the citadel. If you found the first shell fell about 20 yards short and five yards to the right, how many minutes deflection would you give, and what increase of elevation, if any?
3. Find the charges and lengths of fuze for mortars at the following ranges:

13 in.....	2,000 yds.
10 in.....	1,300 "
8 in.....	1,150 "
4. Define the terms energy in foot lbs., energy in foot tons, and give the formulae for finding the latter per inch of circumference of projectile?
5. Calculate the striking velocity at a range of 900 yards, of a 9 in. Palliser shell, 250 lbs., fired from a Woolwich rifled gun, with the initial velocity of 1,420 feet per second?
6. Calculate the remaining velocity, at the same range, of a 15 in. S.B.U.E. Rodman shot, 428 lbs., initial velocity 1,070 feet per second?
7. What thickness of iron armour, without taking wood backing into consideration, would the above mentioned projectiles respectively penetrate, striking direct at the range given; calculate also the effect supposing they struck obliquely at an angle of 60°?
8. Draw a comparison between the British and United States systems of gunnery from the above examples?
9. Write what you know about the application of curved fire from rifled guns at the sieges of Paris and Strasburg?