

there need be no apprehension that it will be risked by useless exposure, the mass of the force engaged cannot generally be covered by the undulations of the ground and, therefore, it will be necessary to improvise such shelter as circumstances may dictate. The shelter trench is a simple excavation with the earth thrown outwards so as to form a mound of the same height above the surface that the trench or excavation is below it, both forming a cover breast high, the parapet placed on the edge of the trench which should be four feet wide and about two feet deep, ample room will be afforded for both ranks of a company, either leaning against the parapet or kneeling, and if judiciously placed will afford security from everything except a vertical fire. General rules for the construction of such temporary works demand that they should follow the contour of the ground placed in such positions that they could not be commanded from opposite heights, and salient angles should in all cases be avoided; the reason is that rifle fire will, in nearly every case, be perpendicular to the alignment, and salient angles would interfere therewith. The question affecting Batteries of position in combination with this system will be hereafter considered; Horse Artillery will always be worked in combination with the skirmish line.

The rifle pit is merely a detached portion of the shelter trench and is generally held in front of a fortified position; the abatis is made by felling trees with the top outwards in front of a position clearing off the leaves and pointing the branches. To active marksmen this would afford a shelter from which they could not be driven without artillery. A rail fence can be turned into a very efficient stockade in a few minutes by simply removing all the lower rails and placing them in a sloping position against the upper rail which is left in situ: the slope is outward and the men crouch behind the rails which form a far more efficient cover than one would imagine.

Each member of this system of defence is distinguished by its simplicity and the ease as well as rapidly with which they can be constructed. In ordinary ground to excavate a cubic yard per hour would be easy work for one man; he will thus excavate three and one-half feet in length of a trench four feet wide and two feet deep in that time affording ample shelter for himself and coverer.

Rifle pits depending on individual exertion and in a great measure on the idea of convenience, will be complete according to the personal feelings of the occupiers and may safely be left to the discretion of the intelligent men detached on this important outpost duty.

Abatis and Rail Stockades will take very little time to construct. The preliminary steps to an intelligent appreciation of the value of field fortifications are, first, skirmishing drill; secondly, a correct knowledge

of the topographical resources of the area operated on, and lastly, the persuasion that the success of the movements depends in a great measure on a sparing expenditure of men and a judicious use of ammunition.

Those are lessons in the science of warfare which should be taught during the autumnal manoeuvres of the Canadian troops, and are as much an essential part of minor tactics as the manual and platoon exercise.

An article has been going the rounds of the local press entitled "War Office Blunders," referring to brevet promotions in the 40th Battalion. It is only necessary to state that our contemporaries overstep the bounds of courtesy and common sense when they attribute personal feelings to the commanding officer of the Volunteer force, where a matter of duty is concerned. Officers should learn to wait the proper action of the War Office; it would be utterly impossible to gazette every man the day his brevet falls due, and their applications are invariably attended to as soon as possible. The question that called forth such needless manifestations of newspaper energy, has been settled by the *Gazette* of the 7th, and we hope in future officers will have the virtue of patiently awaiting the action of their superiors which is an indisputable point of discipline.

UNDER the caption of "Who Owns the Gold" we invite the attention of our readers to an able financial article from the *New York Spectator*. It is sufficient to make any Canadian proud of the mercantile ability and commercial enterprize of his countrymen, qualities in which they have been said to be deficient, but experience proves that it is not those who talk most of their good qualities who really possess any. Our enterprize is placed on such solid foundations that we have no fear of failure.

REVIEWS.

The *London Quarterly Review*, for October, contains the following articles:—Spiritualism and its Recent Converts; Byron and Tennyson; Beer, Brewing and Public Houses; Guicciardini's Personal and Political Records; Continued Mismanagement of the Navy; Industrial Monopolies; Jowett's Plato; Army Administration and Government Policy; The Commune and the Internationale. This is the closing number of the *Quarterlies* for the past year and is a most important addition to its literature. We earnestly recommend to our readers the series of Reviews issued by the Leonard Scott Publishing Company which consists of the *London Quarterly*, *Edinburgh*, *Westminster*, and *British Quarterly Reviews* and *Blackwood's Magazine*, which are furnished either separately or together at prices which are to be found in our advertising columns, to which we request their attention, and advise those who are anxious to acquire a knowledge of the leading questions of the day in

Politics, Finance, Commerce, Historical Criticisms and all the varied information those publications contain, to become subscribers; the publishers address is 140 Fulton Street, New York, and they have rendered inestimable service to the literature of the American continent by the republication of the standard literature of Great Britain. As a specimen number the *London Quarterly*, with the varied articles it contains, is a fair example of the intellectual treat to be found in the periodicals published by this enterprising company.

London Engineering says:—"The vagaries played by the 35 ton gun when on its proof, as regards pressures and velocities obliged the committee on explosives to reopen their investigations as to the powder best suited for this piece. They have since been experimenting with gunpowder grained in various ways and made into pellets of various forms and sizes. The most recent results of their investigations, as far as we are at present informed, tend to show that they are approaching, if they have not absolutely reached, the object of their desires, namely, low pressures and high initial velocities. In the early stages of the experiments solid cylindrical powder pellets, three-fourths of an inch in diameter and three-eighths thick were used. With these it was found that pressures of forty seven tons per square inch were obtained with initial velocities of 1,430 feet per second. It will be remembered that the 35 ton gun gave with one hundred and twenty-pounds of pebble powder, a similar pressure with a velocity of 1,370 feet. With one hundred and thirty pounds of powder the velocities fell to 1,348 feet. Hence with the solid pellets a slight improvement in the velocity was obtained. Cylindrical pellets three fourths of an inch in diameter, one half inch thick, and having an indent formed on one face three-sixteenths of an inch in diameter and one-fourth of an inch deep, were then used. The pressure obtained with these pellets ranged from twenty-three to twenty-four tons per square inch, the velocities remaining good. The next step was to split these indented pellets in halves and to glaze the halves in the ordinary way. The results of firing heavy charges with the divided pellets has, we hear, been a reduction of the pressures to fourteen tons per square inch, while at the same time initial velocities of 1,430 feet per second are obtained. It is difficult to account for this extraordinary reduction of pressure without a knowledge of all the details of the experiments of which we are not at present in possession. It appears singular that these broken pellets, which closely approach the nature of pebble powder—except that the grains are slightly more uniform in size and shape—should give pressures so very much below those of the pebble powder with equal velocities. These results are certainly very remarkable, and if repeated trials establish them as indisputable facts and do not prove them to have been so far the result of accident, derangement of the pressure gauges, or miscalculation, a most important advance will have been made toward the settlement of the powder difficulty."