

warfare guns of greater weight and larger calibre. One of the best authorities on the feasibility of working what are known as guns of position in action, is Lieut.-Colonel J. D. Shakespeare, late of the Royal Artillery, now commanding 1st Middlesex Volunteer Artillery, and he is quite sure on the subject of both working, transporting and manoeuvring heavy guns with the ordinary transport horses. All indications, indeed, point out to the Artillery service being divided into Horse Artillery, Field Artillery and Garrison Artillery, each division using appropriate guns and receiving a special training; for instance, the horse artillery must be taught the duties of light cavalry corps and will be obliged to act in that capacity, the guns attached to this force not exceeding in weight the present bronze 9 pounder. The force acting in concert with cavalry must combine rapidity of movement with lightness of equipment. The field artillery may be armed with guns ranging from the large 16 pounder to the 32 pounder; acting in concert with infantry rapidity of movement is not so necessary, combinations will take more time, but as the unit of this force should be attached to the various battalions, all consequences likely to arise from want of rapidity will be to a great extent obviated, while the light artillery should cover any movement as skirmishers. The men of the field artillery must needs be more stalwart and require more careful training than those of the horse artillery, inasmuch as their guns require more mechanical skill in manipulation, while the garrison artillery, from having to deal with heavier guns and greater variety of projectiles than either, will require a larger period to train and must possess more mechanical as well as scientific knowledge. Every cavalry regiment of 350 sabres should have a troop of horse artillery of 100 men and six field pieces attached. Every battalion of infantry of 600 bayonets should have a battery of field artillery of 100 men and four guns of position, as part of its establishment. Spare gunners in either arm acting as cavalry or infantry indifferently, to cover the guns, not otherwise.

Taking our military force at 70 battalions or 42,000 men there would be thus 280 guns of position, and as we ought to have a cavalry establishment of at least 10,500 men, or 30 regiments, and 180 field pieces, which would be the proper proportions for such a force in this country; our garrison artillery should be almost or altogether raised on the frontiers and ought to consist of at least 600 men in each battalion or brigade. The horse or field artillery should form in ordinary times a portion of the regiment or battalion to which they were attached, in the field they should be brigaded under their own staff officers, and subject alone to their orders. There can be very little doubt that this arrangement would greatly simplify the manoeuvring of artillery in the field, and by attaching it to the infantry and

cavalry, preclude the possibility of leaving either one without its appropriate proportion of artillery, and as it is not possible to impart to either a greater degree of mobility than their covering force, concentrated movements are easily made with the certainty that an appropriate force is always present. As to the means of transport the field artillery will easily find it in the ordinary country horses, but the horse artillery will require a better class of animals which the country can easily afford. The garrison artillery not requiring such means of transport will present a much simpler organization, but their training and military education must be of a more elaborate order. It will be seen then how much has to be done before the organization of our military force is completed; we require over 460 pieces of field artillery, or say 30 batteries of horse artillery, at \$10,000 per battery, or \$300,000, including all appliances, 70 batteries of field artillery at \$8,000 each, \$560,000, or a total of \$860,000, comprising a complete equipment. The force to be raised would be, for horse artillery 3,000 men, field artillery 7,000 men while the garrison artillery should at least be as numerous as both or 10,000 men; this would bring the total of our active force up to 70,000 men and that is the figure at which it should stand without an ordnance corps, which being composed of professional men (Engineers and Provincial land surveyors) would add nothing to the cost. With an ambulance and commissariat corps an addition of 5,000 men would be necessary so that this country should double its present force before its organization is completed. With an army trained solely for defensive purposes this disposition of the artillery is the best that can be made, its essential features being that the means of transport could always be found more readily for the units at the local headquarters of infantry or cavalry than if organized in brigades and the resources of the country could thereby be rendered more easily and cheaply available.

In this issue will be found a memoir of a gallant soldier, an honorable gentleman, a useful citizen, an ingenious mechanic, a statesman and a man of large scientific acquirements and abilities, who has passed to the rest of the just in a ripe and honored old age, the late Colonel Ruttan, widely known as the Sheriff of the Counties of Northumberland and Durham, and more widely as the inventor of that system of ventilation for railway cars which has made travelling by train endurable. The descendant of an U. E. Loyalist, Colonel Ruttan has steadily upheld the honor of the gallant race to which he belonged and is another illustration of the fact that "the memory of the just smells sweet and blossoms in the dust," and that the fearless, honest discharge of a public duty, regardless of personal considerations, brings in its train the blessings of personal prosperity. Eighty-

eight years ago the successful rebellion of the thirteen colonies, aided and abetted by Whig treachery, drove the U. E. Loyalist, plundered and stripped of all worldly goods into the dense and trackless forests on the north shore of Lake Ontario, carrying literally nothing but allegiance to his sovereign and the consciousness of having discharged his duty to his country with him; to-day his descendants are the aristocracy in wealth and intelligence of the British Empire in North America, honored, respected and trusted, the slaves of no mob, the serfs of no political tricksters, but *free men*, to whom the glorious task of building up a great constitutional power is confided; while those by whose villiany their fathers had suffered have perished from the face of the earth. Every instance of this kind furnishes an example for the careful study of rising generations, privations boldly incurred from a sense of duty nobly and uncomplainingly borne would teach us that those gallant hearts, while scrupulously discharging their obligations, have looked to a better and more enduring country for their reward, they have had it in both. This memoir is rich in historical incidents and points out that a great man has fallen in a ripe old age full of honors.

No episode in the military history of any people is more glorious than the defence of Canada in the war of 1812-15, nor has any country such unsullied military annals throughout three great contests within the space of sixty years; the Canadian people, French and British, have proved themselves soldiers, *sans puer, sans reproche*. Honor then to the gallant heart which has borne its part in the last of these contests, and we hope that the usual military honors (which we regret were not paid in this case) will be awarded to such of those gallant veterans as may answer their last roll call in the future.

Our gallant correspondent "Centurion" enters thoroughly into the question of the re-organization of the Canadian army; his letter contains valuable suggestions having the best of all possible recommendations, that they are thoroughly practical, and, therefore, deserving serious consideration. The only question with which we are at issue is the desirability or advisability of abolishing the Volunteer Force; we do not think the country desires that measure or that it would be wise or judicious to resort to the ballot system alone for the purpose of keeping up our *Active Force*; in that case, even with the savings "Centurion" so ably shows could be effected by the most economical management, it might and would be a far more costly system to Canada than the present mode by which her military force is kept up. If the proposition is to be admitted that the ballot must be enforced, it follows, in justice to all classes, that no exemption shall be permitted. It is hardly necessary to point out how in that