our own. The most common description of submarine mine, of which there are some thousands stored away in Woolwich Dock yard, consists of a simple iron case, nearly oval in shape, and calculated to contain some 500 lbs. of gun-cotton, which, as the explosive agent, is preferred to any other yet discovered. These the investigators think as suitable as any which can be provided for barring the entrance to ports and rivers, and for protecting assailable places round the coast; and, as far as present experience extends, there appears to be no better mode of mooring them than by the mushroom anchor, nor any more suitable method of ignition than by electric wires, under the control of intelligent observers on shore or in friendly ships. The application of electricity to this purpose has been greatly advanced by recent researches at the Royal Arsenal Chemical Department, and an apparatus has been devised by which an operator, seated at a key board any distance away, can not only tell instantly which of his line of torpedoes has a ship above it, and fire away one or all as rapidly as he pleases, but by which he can test and discover the locality of any fault in his cables without interfering with the mines themselves. There are also torpedoes intended to be fired on contact, the construction of which is such that, on being struck by the keel of a ship, a glass tube is broken, and a small quantity of sulphuric acid, mingling with a chemical compound, generates heat and fires the charge; but from the liability of this system to endanger other ships besides those of the enemy, and the extra risk involved in laying them down the electric plan is, except in very special cases, preferable.

It is, however, with aggressive or locomotive torpedoes that the committees appointed by the War Office are at present, and have been for some time past, specially engaged. The most primitive of these is that of fixing a charge of 50 or 100 lbs. of powder at the end of a pole projecting twenty feet over the bows of a small boat, which a daring crew may take alongside the enemy, thrust under water, and fire, either by electricity or percussion. Although the "cutting out service was several times tried during the American war with fatal results to the crews engaged, the experiments which have been lately made in England show that with proper care the outrigger system, as it is called, may be adopted with absolute immunity to the operators, and it has been authoritatively pronounced "a most formidable means of attack." Another system which has been favourably reported upon is contrivance for steering a torpedo by means of a line from the deck of a fast sailer, so that the machine shall be led as it were under an antagonist one or two hundred yards away, and fired. It has been found by repeated experiments that these torpedoes, skilfully managed, may be manœuvred with great success. One of the newest and most promising locomotive torpedoes, several modifications of which are being constructed at the Royal Arsenal, is called the "fish torpedo," from its singular form and mechanical action. It is about 5 feet long by 2 feet through its greatest diameter, and is furnished with fins and a tail to act as propellers, worked by a little engine inside, the motive power of which is compressed air. It may be set to run in any direction, and at any required depth under water, while its inventors claim for it the power of navigating an unlimited course of 800 yards, a doubtful quality although it has been tried up to 150 yards, and answered well. This torpedo is intended to be fired from ships constructed or adapted for the purpose. A tube, 28 feet long, is to be inserted longitudinally in the ship below the water line; the mouth, which projects from the bows, being fitted with a cap to keep out the water. Two sluices in the tube allow the torpedo to pass into it, the cap is removed, the ship takes aim, and the torpedo is shot out by a propeller. As it emerges, a steel vane in action the atmospheric engine, and the destructive fish proceeds at the rate of about ten miles an hour, and with remarkable accuracy towards its prey. On striking, a charge in its head is ignited by a percussion fuse, and, the charge being a heavy one, there are few if any ships afloat that could withstand the shock. Its principal defect is its liability to be affected by currents, and the consequent uncertainty as to its hitting its object, especially if that be a ship in motion, but, as its success in any one instance would practically amount to certain destruction of the vessel assailed; the system is engaging at the present time more attention than any other.—*Telegraph.* (London)

CORRESPONDENCE.

The Editor does not hold himself responsible for individual expressions of opinion in communications addressed to the VOLUNTEER REVIEW.)

HORSE AND FIELD ARTILLERY.

SIR—I wrote once before on the above subject advocating the necessity of our having more Batteries of Field Artillery than we now possess, at the same time that I decried the absurdity of establishing Batteries of Garrison Artillery for permanent service. At that time I suggested that the different branches of the Artillery service should be kept (and taught) as distinct as possible, since which time (now about a year ago) I have seen the same idea advocated by one of the leading English newspapers, I refer to the London *Standard*, which came out in a very sensible editorial on this subject in one of the three months of the current year, I forget which now. The arguments advanced by the *Standard* were, in my opinion, sound and conclusive, tho' new and contrary moreover to the established ideas of artillery theorists in general. They were these: "Make, said the *Standard*, each branch of the Artillery service into a separate regiment; let an officer on entering the Artillery choose which branch he may prefer to enter, or place him in that for which he appears most fit on examination; let the promotion go on in each separate regiment; thus each officer will become thoroughly conversant with his own peculiar work; will take special pride and interest in his particular march and will consequently be far better up in his work than if he were liable to be exchanged from one branch to another, besides which fact, there are many officers who prefer the detail and work of one particular branch to that of another; also there are many officers who are more fit for (and prefer) one branch than another; thus, there are many officers who prefer the detail and work of Horse to Field as there are others who prefer Garrison to either Horse or Field Artillery."

These, Sir, were some of the arguments advanced by the *Standard* in the editorial to which I refer. If this be so with the Royal Artillery officers, with how much more force will the case apply to volunteer Artillery officers of our Canadian army. We *cannot train* our Artillery officers as the officers of the R. A. are trained, as they cannot spare the time to devote to studying the science of the profession which it requires, therefore, I say, it behooves us to find a way by which we may teach each branch separately instead of the present actual of gunnery system which is, par parenthesis, a perfect failure as a *school of gunnery*, it at the present time being merely the refuge of two or three young men who, having no profession but some political influence, managed to get in as a sort of quiet retreat from the cares and concerns of working for a living in some other business. Speaking of the school reminds me of a case which requires some ventilating; there is one young officer in "A" Battery who joined the school from the Infantry (was attached to a Field Battery who would not have him with them, by the way, during camp) and the Colonel of his regiment refused to keep him on the strength when the camp ended, so that now he really belongs to nothing but "A" Battery; might I ask, Sir, is this sort of thing to become the custom of the service? That rules and regulations be set aside for political purposes, say boldly once for all, and it is acknowledged to be so by M. P's of both sides of the House, that politics and political influences have *too much* to do with the choice of Candidates for positions in the Volunteer force, which thing, will some day be the cause of the ruin of the force. However to my subject. We in Canada have not the men who can spare sufficient time to learn the details and workings of each separate branch separately; or in other words, let us have our Garrison Artillery, Field Artillery and our horse Artillery, and let us teach each their own peculiar duties, even, if we have to increase our Staff of instructors. At present, as I said before, the school of gunnery is merely a pleasant retreat from business, or a refuge from the toils of the law students office etc., for one or two who can afford to live at a mess (there are only 3 officers in A Battery, I believe altogether) and keep up the respectable appearance of gentlemen.

Half a dozen good instructors in each Province could do far more good than the money at present thrown away on these schools can ever effect. But before all things let each party in the Dominion Parliament refuse to use political influence in Militia affairs.

Your truly,

A BELIEVER IN HORSE AND FIELD ARTILLERY.