DOMINION OF CANADA.

MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 22nd November, 1872.

GENERAL ORDERS (29).

No. 1

MILITIA STAFF.

BREVET.

To be Lieutenant Colonel:

Brevet Major William P. Philips, V.B., Brigade Major 7th Brigade Division, Ontario.

LEAVE OF ABSENCE.

Lieut.-Colonel W.O.Smith, C.M.G., Deputy Adjutant General of Military District No. 10, for one month, on urgent private affairs.

ACTIVE MILITIA.

Provisional Battalion of Infantry on Service in Manitoba.

The resignation of Lieutenant George Simard is hereby accepted.

PROVINCE OF ONTARIO.

Gananoque Field Battery of Artille y.

Errata in G.O. (26) 25th October, 1872 and G. O. (28), 8th November, 1872, *read* "To be Surgeon: Edgar Hamilton Merrick," *instead of* "Edward Hamilton Murick."

PROVINCE OF QUEBEC.

BREVET.

To be Major:

Captain Robert Stewart, M.S., No. 2 Company, 55th Battalion, from 15th February, 1872.

PROVINCE OF NEW BRUNSWICK.

CONFIRMATION OF RANK.

Captain Robert R. Call, G.V.B, Newcastle Field Battery, from 30th September, 1872.

GRAND TRUNK RAILWAY BRIGADE.

1st Brigade Garrison Artillery.

To be Major:

Brevet Major and Captain John Taylor, V. B., vice Frederick C. Stratton, whose resignation is hereby accepted,

To be Captain:

1st Lieutenant William Henry Rosevear, vice Taylor, V.B, promoted.

1st Battalion Rifles.

The resignation of Major Peter Clarke is hereby accepted.

By Command of His Excellency the Governor General,

WALKER POWELL, Lt. Colonel.
Deputy Adjutant-General of Militia.
Canada.

THE NEW MILITARY RAILWAY.

On Wednesday experiments were made at the South Camp, Aldershot, to test the recently constructed narrow-gauge railway which has been laid down between the Field Stores Depot and the Barrack Stores. A large number of engineers were present. Mr J. B. Fell, the inventor of the system, explained its advantages. The line is upwards of one mile in length. About two-thirds is laid on curves of from three chains to seven chains radius, and there is a gradient of 1 in 50 for a length of 770ft. upon a viaduct of from 20ft. to 25ft in height, the gauge being 18in. The rails are laid on two longitudinal timber beams, supported at intervals of 10ft. and 15ft. by posts with lateral struts. The general plan of the structure of the locomotive which is used has been designed by Mr. Fell; the working plans were prepared and the engine built by Messrs Manning, Wardle, and Co., of Leeds. The engine weighs 4½ tons and the tender 3¼ tons, with coal and water. There are three pairs of driving wheels coupled, each 16in. in diameter. There are also four horizontal wheels running upon guide rails fixed on the lower edges of the beams. The depth of the guide rails below the carrying rails is twelve inches, and this is equivalent to an extension of gauge; so that, as regards stability and safety, the gauge of 18in. on this system of railway is equivalent to one of 3ft. 6in. on an ordinary railway. The bodies of the wagons are 8ft. long 5ft. deep and are calculated to carry a load of three tons each, or from 300 to 400 cubic feet of bulky articles. The wagons are suspended from two pairs of wheels placed, not under the body, but at each end of it; the body of the wagon is thus brought down to about 3in. above the carrying rails, and a very low centre of gravity is by this means obtained. The experiments yesterday formed one of a series which had been held at Aldershot during the past three months, and the result fully justified all that its inventor has stated respecting the scheme. The lines made on this principle are capable of carrying sufficient quantities of military store, including field artillery and siege guns of 7-tons weight.

A proposal is now under the consideration of the War Department for connecting the narrow guage railway at Aldershot with the Basingstoke Canal and the South-Western Railway, also for extending it to the North Camp and canvas camping ground, by which plan, if adopted, a large expense of hired transport would be saved, and the present experimental line the chief object of which has been to test the practicability of making and working a rapidly constructed line for military purposes in the field.

GEODESIC GUNNERY.

(From the New York Times.)

If the range of guns is to increase much more it may become needful to take into account, in artillery practice, the curvature of the earth; theodolites may have to be employed to make nice calculations of angles, and the machinery of war be directed by the exact process of the civil engineer. Sir Joseph Whitworth has now invented, we are told, a field gun better than either the new 9 pounder or the new 16 pounder, of which the English Press has lately told so much. This latest cannon is made of compressed steel. *It is strong enough to bear* twice the usual charge of powder. At one hundred yards, with a charge of two pounds and three quarters, it can put a 9 pound bolt through a three inch armor plate and set atah angle of forty five degrees, And, finally, this extraordinary weapon will throw a projectile over a clean space of six miles.

The way in which the strength requisite to get these resitus has been obtained is one we think, which will prove important to other mechanisms, besides the makers of artillery. The new Whitworth gun is, as we have said, made of steel, and, although no exact description of its manufacture is at hand, we take it for granted it is constructed of lamine of twissted cylinders. By all the processes hitherto, steel has been more or less defective, and we suspect it is not made quite perfect by the new one. In each of the methods, the Bessemer included, air passes through iron, thus endowing the latter with the carbon, whose addition makes the difference between iron and steel. Now a greater or less portion of this air remains in the substance, and occasion holes and flaws. These, of course, weaken the steel and make it liable to break up. Sir Joseph Whitworth has met this difficulty by a new divice. He has applied to the hot metal, while in course of manufacture, the tremendous pressure of twenty tons to the square inch, and has thus driven forth the atmospheric particles, the presence of which would otherwise diminish the stability of the gun. This expedient must, apparently, greatly increas the efficiency of batteries in the field The advantages of the superiority of range are probably of much less moment, however, than those of the superiority of endurance and the economy of the charge. Artillery at great distances *notoriously does little* mischief, and unless from great heights, or from forts—the new gun being designed for the field—Sir Joseph's invention on this score is unlikely to be of exceptional service.

It may be expected that this improvement in the manufacture of steel will be found of great value as applied to other peaceful objects. Greater strength and more trusty durability in the material must, of course, be desiderata for many purposes, and the utility of any process that may secure equal strength with less bulk as equally manifest. In this way, what had been designed for slaughter may serve more beneficent ends in ways not hitherto thought of. Consequences like these, in truth, afford some comfort when we look on the continual rush and hurry of human invention to devise new and more destructive engines to take away human life. The money and the thought, from this point of view, are not altogether thrown away. The arts of peace are thus subserved by the cultivation of the art of war, and life may be ameliorated by the devices meant to destroy it! Meanwhile, if for the sake of economy only—for, if the exploits of the new Whit-