

A hull to carry so much iron must be very solidly constructed with double bottom and sides, which would add so much to the weight of the above mentioned vessels that they would be liable to sink in smooth water.

Their construction was originally planned by very clever men, and they were never intended for heavy weight, any more than a sloop of the Congress class would suit to carry 11 inch guns in broadside.

Now they can be moved from one port to another, going long distances, through with some risk to the vessels and their crews; but no vessel of the small monitor class, with nothing to prevent the sea breaking completely over her, can be considered a satisfactory sea going ship. Depending, as the monitors do, upon the junction between the turret and the deck being perfectly water tight, when the turret is raised to permit it to revolve, this water tightness no longer exists. Consequently, in a sea way these vessels cannot revolve their turrets and fight their guns.

Besides this, a small monitor of the Pas-saic class while being deluged in rough weather would have her ventilation affected so as to destroy the health of her officers and men, a most important matter when the necessity of keeping a ship's company in good health is considered. Hence, I am of opinion that the class of vessels above mentioned should be kept entirely for harbor defence.

Of the double turreted monitors, the *Monadnock*, *Miantonomoh*, *Amphitrite*, *Roanoke*, and *Terror*, (really valuable vessels,) want thorough repair, and entire new hulls of iron and new engines. They could not now go with safety from port to port, although intended for sea going vessels, and capable, when in order, of making long voyages. Some of the vessels are now under repairs, and, as they may be converted into fine iron clads, I would recommend that they be altered as follows:

I propose that their hulls be built on the bracket plate arrangement, like the British armour plated vessels, and like the torpedo boat *Alarm*, the latter the first vessel built on this plan in the United States.

This would give these monitors a double bottom and double frames throughout, and would enable them to carry nearly twice the thickness of iron on hull and turrets, or, at least, enough to make them invulnerable against the nine, twelve, and eighteen ton guns generally in use in foreign navies.

If solid oak backing is used the resisting power would be still greater.

These vessels should have engines of great power and simplicity of design, of the compound type, which would enable them to cross the ocean or cruise on our coast in the heaviest weather.

Both the *Monadnock* and the *Miantonomoh* have given evidence of their ability to make long sea voyages with comfort to officers and men, and this kind of vessels would no doubt live in a gale where an ordinary frigate would founder. In the reconstruction of these vessels I would recommend a change in the manner of revolving the turrets, either having them move on balls or rollers, or have high coamings fitted with India rubber packing to reach to the sill of the gun port, for the present system is liable to the objection of water getting in in a sea way. The turrets have also unreliable machinery to raise them, to say nothing of the danger of being completely disabled, while revolving on their pivot, by heavy shot.

Great diversity of opinion has existed in the minds of experienced men with regard

to the best form of fighting ship, and after examining over a hundred different plans of foreign iron clads, I think I am justified in the conclusion that vessels, like the *Monadnock* and *Miantonomoh* are better adapted for protecting our coasts and harbors, and for fighting, than any others yet built.

I have seen the *Monadnock* in all weathers, and riding out heavy gales at anchor on our coast, yet she rode the sea like a duck.

This class of vessel has a fore and aft as well as a broadside fire, and no ship can be considered an efficient fighter unless so constructed.

To make these monitors more enduring against shot, their plating should be solid on the sides and turrets, or each thickness of plate should be at least $\frac{5}{8}$ inches, the heaviest we are able to roll in this country. The laminated plates upon our vessels during the rebellion were of 1 inch thickness, and adopted from necessity, we having, in the early period of the war, no rolling machines that could turn out heavy plates.

Besides, at that time, the laminated plates were sufficient to resist the enemy's projectiles; but the solid plate has the advantage, inasmuch as so great a weight of iron is not needed when it is used, since experiments prove that a properly rolled 4 inch plate has greater resisting power than 6 inches of laminated plates.

The double turreted monitors, when reconstructed, could be made to carry 20 inch turrets of 5 inch plates, or thicker if they could be obtained. This would bring them down about 9 inches more in the water, and additional draught would also be caused by the side plating, which could be remedied, however, by raising the sides, giving the vessels more free board, and allowing height for larger boilers.

No ship is a complete fighting vessel unless she is able to ram her antagonist, and it will be found in the event of war between two great powers that the fleet possessing the best rams, other things being equal, will win the battle.

In ramming, the crushing process is superior to the piercing, and I would recommend that the bows of our iron clads be made very strong and especially adapted to this purpose.

The present system of naval tactics will serve very well to keep a fleet in order and to concentrate the vessels previous to an action, but when the battle commences and the ships are enveloped in smoke there is an end to order and sailing by flags, and every captain must act on orders previously given or on his own responsibility. It is evident that rams and torpedo vessels will have matters pretty much their own way then, and the more smoke there is the better it will be for them.

It would be impossible for an enemy to avoid rams and torpedo vessels in a dense smoke, unless continually maneuvering for the purpose, thereby breaking up the order of battle.

The decks of our monitors have hitherto been insufficiently protected. Their deck armor should be increased to 3 inches of steel, covered with wood, for being of rather low free board these vessels are liable to damage from plunging shot.

There are a variety of matters to be taken into consideration in the reconstruction of the monitors, for it would be only a waste of money to rebuild them altogether on the plan, with the prospect of their turning out inferior vessels, when so many new improvements can be introduced from plans perfected by foreign powers.

To be Continued.

CORRESPONDENCE.

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

To the Editor of the VOLUNTEER REVIEW.

POLICE!! POLICE!!!

DEAR SIR,—The North West Mounted Police having monopolized the most part of the speech from the Throne, as well as the lion's share of the militia estimates of last year—and having also been given the post of honor in the field, while the embodied Militia do the police duties in the towns;—it has not unnaturally come to be thought by many, that the whole of the active militia, might with advantage be wiped out of existence, their place to be taken by a police force.

Now "what's in a name" *Shakespeare* says; Canadian wise acres say everything—had the North West police been called cavalry, they would have performed the very same duties, much more efficiently under military discipline, than they have done, and cost the country one third less—but we don't want things well done—we don't want any one who knows anything—what we do want is votes at elections. How many votes can you influence at the House of Commons? that's the way to win the Canadian Victoria Cross.

I clipp from one of the daily Quebec papers the following pertinent letter signed "Economy" which I hope you will publish with this communication.

K. C. B.

To the Editor of the *Mercury*:

SIR,—I was pleased to hear Hon. Mr. Robertson's admission in his Budget Speech that the present cost of our Provincial Police was enormous, still we cannot afford to have the number of men reduced, though reform is much wanted somewhere as regards the cost to the Province. I find that A and B Batteries of Artillery, with a strength of almost 20 officers and 300 men, cost only eighty thousand dollars last year, this includes the maintenance of two bands of music, and 20 horses; while our Provincial Police force, with but 2 officers and less than 100 men; cost upwards of sixty six thousand dollars. Now I do not wish to find fault with the fine body of men who form our Provincial Police, and considering their extra duty, am quite willing to allow them an increase of pay over that of the regular Artilleryman, but certainly not three times its pay and maintenance. The fact is the cost of our police should just be about one half what it is, man for man.

ECONOMY.

It is stated that offers on the part of Her Majesty to confer the Grand Cross of the Bath upon Mr. Thomas Carlyle, and a Baronetcy upon Mr. Alfred Tennyson, have been in each case gratefully declined.