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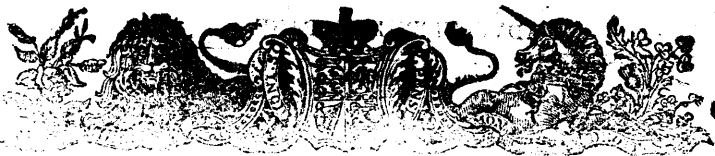
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# The Volunteer Review

## AND MILITARY AND NAVAL GAZETTE.

A Journal Devoted to the Interests of the Military and Naval Forces of the Dominion of Canada

VOL. IX.

OTTAWA, (CANADA,) TUESDAY, JANUARY 26, 1875.

No. 4.

### The Volunteer Review

is published EVERY TUESDAY MORNING, at OTTAWA, Dominion of Canada, by DAWSON KERR, Proprietor, to whom all Business Correspondences should be addressed.

TERMS—TWO DOLLARS per annum, strictly in advance.

#### TO CORRESPONDENTS.

All Communications regarding the Militia or Volunteer movement, or for the Editorial Department, should be addressed to the Editor of THE VOLUNTEER REVIEW, Ottawa.

Communications intended for insertion should be written on one side of the paper only.

We cannot undertake to return rejected communications. Correspondents must invariably send us confidentially, their name and address.

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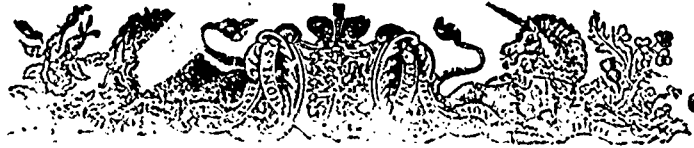
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## AND MILITARY AND NAVAL GAZETTE.

A Journal Devoted to the Interests of the Military and Naval Forces of the Dominion of Canada

VOL. IX.

OTTAWA, (CANADA,) TUESDAY, JANUARY 26, 1875.

No. 4.

### NEWS OF THE WEEK.

A public meeting was held at the City Hall on the evening of the 20th, to hear Dr. Mitchell, one of a deputation from the Western States, on behalf of the Nebraska and Kansas sufferers from the grasshopper plague. The Doctor in the course of his remarks stated that there were about 40,000 people suffering there yet. He made a strong and eloquent appeal, which will doubtless meet with a hearty response from the people of Ottawa, whose known charity is proverbial. At the close of the lecture Mr. Bronson moved seconded by Mr. G. W. Oruce, and carried unanimously "that a petition be presented to the City Council, asking them to take into consideration the question of sending relief to the Nebraska and Kansas sufferers."

The Dominion Board of Trade met in the Railway Committee Room of the House of Commons, at noon on Tuesday, the 20th inst., W. H. Howland, of Toronto, President, in the chair. The annual report of the Executive Council was presented and read by the Secretary. Printed copies of the report were distributed to the members of the Board. The action of the Government on various important questions was highly commended, such as the Free Postal Delivery system, Reciprocal reduction in Postage ratio. Encouragement of Trade with the British and Foreign West Indies, &c, &c.

Before the Board separated on Thursday, the Hon James Skead, Messrs, Clemow, Pennock and McGillivray, delegates from the Ottawa board, entertained the members of the Dominion Board of Trade to a complimentary luncheon at the Rideau Club House. The Hon. G. A. Walkham, Premier of British Columbia, was called on to reply to the toast of "The Ladies," and during his remarks, said "his mission to England had been successful, and that the people of Canada had no idea of the speedy manner in which the Pacific Railway would be constructed. He hoped in a few years to see British Columbia not only represented at the Dominion Board, but also that a midsummer meetings would be held at Victoria."

The funeral of the late Col. Wilson, Grand Master of the Grand Masonic Lodge of Canada, took place at Simcoe on the 20th inst. It was a most imposing affair. Up

wards of 800 Masons were present from all parts of the Province. Business in the town was entirely suspended, and the greatest respect was exhibited by every one to the memory of the distinguished citizen.

It is reported that Mr. Colin Campbell M. P., for Digby, and Hon. Mr. Brown, of Yarmouth, are to become members of the Cabinet of Nova Scotia, the latter in the place of Mr. Annand, who is to take the place of Queen's Printer.

A Fort Garry despatch of the 22nd says that one of the Manitoba settlers has received a letter from his friends in Russia, informing him that 931 families are leaving on the 27th proximo for Manitoba.

A Minnesota paper confirms this, and states that an agent has already gone west to Montana to purchase 17,000 head of cattle for these new settlers. As the Mennonites who arrived last fall averaged seven members to a family this new colony will add about 6,500 souls to our population.

A terrible snow storm prevailed throughout the Territory of Utah on the 14th inst., and the canyons of Cottonwood were completely blocked with avalanches occurring hourly.

Despatches from all parts of the Northwest report extremely cold weather. In some portions of Dakota it is reported that cattle are freezing to death, and great suffering is feared among the settlers along the borders of the Western States.

A snowslide in Nevada recently buried fifty Chinamen wood cutters, of whom twenty-eight were killed.

Another snow slide occurred at Big Cottonwood Canon, overwhelming six men, whose bodies have not yet been recovered.

President Grant has announced that if the U. S. senate seats Pinchback as one of its members he will consider it a sufficient warrant to continue to support the Kellogg Government.

The *Noravian* had a rough passage out. One of her boats was carried away, a mast was split, one of the passengers was thrown down and had his knee cap broken, and several other minor casualties occurred.

A cable telegram of the 20th instant, says: "The *Pall Mall Gazette* says that war, if not actually declared against Turkey, is resolved upon by the Government of Montenegro, Persons well acquainted in the East regard the situation as one of the gravest character."

The Custom Officers at New York, seized on the 19th inst. \$60,000 worth of silks, cottons, &c, smuggled from Europe.

A cable telegram of the 19th, says the British ship *Berar*, is supposed to have foundered with all on board—twenty in number.

The London *Globe* says it has good authority for stating that the British Government has demanded an explanation and apology from the Government of Peru, for removing a passenger from a steamer at Callao.

Her Majesty Queen Victoria is threatened with a severe family affliction—Prince Leopold is reported to be dying from hemorrhage of the lungs.

A special despatch from Vienna to the *Daily News*, says the prospect of an adjustment of the Montenegro difficulty is more hopeful. It is supposed that Turkey is yielding. Austria, it is stated, will send troops to the Bosnian frontier. The *Standard's* special telegram from Trieste represents that, on account of the deep snow in the passes and on the roads, it will be impossible for the Montenegrins to enter Turkish territory during the next two months, except at points where the Turks are in overwhelming force.

A despatch from St. Petersburg says the *Journal de St. Petersburg* has an article which is taken as an indication that Montenegro has the support of Russia in the difficulty with Turkey.

Disturbances have occurred in two villages of Geneva Canton, Switzerland, over the baptism of children by Old Catholics. The presence of troops was required to preserve order.

Forty-seven Carlist officers have notified the Spanish consul at Bayonne that they have given in their adhesion to King Alfonso.

A cattle train fell through a bridge on the Hannibal and St. Joseph Railway on Sunday, causing a tremendous smash, and killing \$20,000 worth of cattle.

The Hon. Mr. Gladstone has retired from the Leadership of the Whig party in the House of Commons, which virtually means that he intends retiring into private life.

The Turkish Minister of Foreign Affairs has resigned on account of complications growing out of the Podgoritz outrages. The policy of his successor will be more conciliatory, but should a conflict become unavoidable, Austria will endeavor to confine it to the narrowest possible limits.

It is stated that Republican emissaries have left Barcelona and other towns in Spain to confer with the Carlists chief, in Saballo, for the purpose of causing a general rising against King Alfonso. It is further said that in the event of the project succeeding it is proposed by the Plebiscite to decide between monarchy in Don Carlos as King and a Republic. There is considerable agitation among the Republicans in Barcelona.

### The U. S. Navy 1874-5.

Imagine any army whose artillery consists of culverins or leather cannon—whose infantry is equipped with match locks or arquebuses in place of needle-guns or Remingtons: then compare the fighting power of a body of men so armed, with a modern European army equipped, as it is in every detail, with the results of great mechanical skill introduced after scientific and thorough scrutiny by great masters in the art of war. The two pictures will scarcely be more striking in contrast, than a sketch of our Navy compared with that of any one of the several powers, or compared with what our Navy ought to be if the money its material has cost had been intelligently applied.

The report of the Secretary of the Navy for 1874, contains the usual information respecting the distribution of squadrons, and gives a very sanguine view of our naval efficiency, based chiefly on the results of the naval assemblage in the Bay of Florida; but we regret to see that it contains no hint of any definite policy of naval construction. The present state of naval science requires that we should have some policy if we are to expend the naval appropriation to any advantage. The conditions brought about by steam, armor, and the heavy ordnance of late years, and it is safe to add by torpedo, have made this imperative. Doubtless the power of the torpedo, in the present state of the art of submarine attack, exists largely in the imagination; but the promise and potency of this mode of defence are so great that there is only required the appreciation of our present defenceless state, on the part of Congress, and common sense on the part of the Navy, to make it a practical and certain system. One effect of this will be to place it in the power of weak nations to defend their harbors and coasts from naval attack, and to enable any country to keep off a maritime foe by far more effective means than maintaining a vast and costly armada.

The Navy Department asks for nineteen millions, about one half to be devoted to constructive purposes, the other to be personnel of the service. This distinction draws a sharp line: the Department may be organized with eight Bureaus, or little Navy Departments, as it now is, or with a greater number, their functions must come under one of these divisions, *i. e.*, the construction and maintenance of naval vessels, on the one hand; and the other the personnel and service afloat. We propose to review the former division of the service systematically, giving a brief outline of the type and condition of each vessel, beginning with the first borne on the Naval Register for 1874. If in thus surveying our naval force, as will presently be seen, there is nothing to commend, we cannot fairly be charged with a want of proper national feeling in exposing our weakness. The "Grand Naval Drill," as it is popularly called, which took place in the Florida Gulf about one year since, placed before the world far more conspicuously than it is in the power of any public journal to do, our real naval strength, or to be more exact, our naval weakness. Agreeing as we do with the opinion of officers of wide information and discernment, sorrowfully but emphatically expressed it is with in bounds to characterize this squadron, gathered together as it was by great exertion and for a warlike purpose, as a collection of naval trash, unworthy the Navy and the Nation, without a ship in it (with perhaps one exception) capable of meeting

other than at a disadvantage such vessels as are possessed by the feeblest navies in Europe, to say nothing of the iron clads of some of the South American powers.

One experienced officer present at this review said, "When he entered the service as a midshipman, wherever he went he found that the American frigate was a little better than the frigates of any other nation, that the American sloop of war was a little better; and in his travels he found that, vessel for vessel to the extent that we possessed war vessels, the United States was in advance. Foreigners copied our style." Admiral Dahlgren stated, not long before his death, in an official report: "The policy of the country always has been, and should be adhered to, that however small our naval force in peace, every vessel of it shall combine in itself the highest known qualities of a ship of war in armament, speed, and personnel."

Now, owing in a large measure to the confusion brought about by our system of naval administration established by law, we can no longer point to the individual excellence of our vessels. So far from combining the "highest known qualities" of ships of war; they scarcely possess a single feature of excellence. A war vessel has long since ceased to be the product of a ship carpenter's adze, carrying the long rows of cast iron smooth bores, with which we once won naval renown. The highest efforts of engineering and mechanical skill have been and will continue to be brought to bear on every detail which enters into the composition of the naval fighting machines, as such vessels actually are, that now constitute the real strength of a navy.

The Fleet Engineer, speaking of the Florida Gulf naval review, said, "It is probable that under favorable circumstances two or more of the vessels might have been driven up to ten knots; but for the great majority six knots was the maximum steaming capacity against a moderate head wind and over a smooth sea." The fleet was armed with antediluvian cast iron smooth bore shell guns; with perhaps the exception of three or four 15 inch, these would be absolutely harmless, for example, against the Spanish ironclad *Arapiles*, while her projectiles could perforate any iron clad, except one, in the squadron. As Commodore Parker shows in his able criticism of the review which we publish this week, one iron clad—any one selected from a long list we have before us—could sink or disperse such a collection of slow, vulnerable and gunless vessels as made up our fleet. It may be affirmed that this wolf running among these sheep might have a pole poked under his bottom with a pot of powder on the end of it; but when it is remembered that "our attacking ships" (at the great naval drill) were limited to a speed of four miles an hour in approaching the supposed antagonist, and that in place of the non-resisting floating target, an enemy's ship in rapid motion would be encountered, which, instead of waiting until the assailant, creeping at the rate of four miles an hour, had come near enough to be able to thrust his powder bag under the hull, would fire a broadside of grape, at short range, against the boom with its ropes and tackle—not to mention the crew handling the complex gear—what would happen? Among other disastrous effects would not the *sans froid* of the telegraphic operator manipulating the "electric key" be so disturbed that the "circuit" would not be made at the precise second of time necessary to make this contrivance in any degree effective?

From June 30, 1869, up to June 30, 1874, there had been appropriated by Congress in round numbers \$50,000,000, (not including \$3,200,000 which was appropriated for eight sloops of war), which has been spent in tinkering the old vessels of the Navy—*i. e.*, on ships, and things entering into their maintenance of officers and men or any expenditures connected with either the Bureau of Provisions and Clothing, or of Medicine and Surgery, of the Marine Corps, nor for coal nor for any expenses belonging to the Bureau of Equipment and Recruiting, except about \$1,000,000, properly chargeable to maintenance of vessels, in 1869. During this period not a new vessel has been built, except the feeble torpedo boats *Intrepid* and *Alarm*. This money has been spent in "repairing" old vessels, not one of which, as all competent judges must admit, has the qualities essential to a modern vessel of war. In several instances, particularly in the case of certain iron clads, large amounts have been very unwisely spent; the result will be, (as will be shown presently), vessels, which in the chief requisite are no better than they were before these expensive alterations were begun.

We will now go through the list of our Navy, taken from the Naval Register, giving a brief outline of each vessel, to confirm all we have said respecting the condition of the service concerning its vessels:

#### WOODEN STEAM VESSELS.

**1ST RATES.**—*Colorado, Wabash* and *Minnesota*, frigates with auxiliary power, built in 1854, can steam under favorable circumstances about 7 knots; against a head wind, force say 5, will just about hold their own: their steam machinery (Martin boilers included) was behind the age even when it was built some 18 years ago. They carry batteries of 9 inch cast iron smooth bores, and, in a word, are a type of vessel long since obsolete.

*Franklin*, same class as above, with about a knot more speed, completed some two years after the war, long after the type was a naval curiosity.

*Niagara*, a huge sloop, built in 1854, so deteriorated she cannot be rebuilt. Steam machinery condemned and broken up.

**2ND RATES.**—*Nevada—Wampanoag* class, known as Isherwood engine carriers—hull of white oak, not even copper fastened: never at sea, but board reported "she exhibits a marked cant or twist of hull"—"she presents even a worse case than the *Wampanoag*"—"she is utterly unworthy of repairs and ought to be sold immediately"—"not a single gun can be used on her gun deck in giving chase to an enemy ahead." We believe she has been condemned and will be broken up.

*Connecticut* same as above, on the stocks at Boston, will probably never be completed—frame of white oak.

*Florida*—late *Wampanoag*—has never been to sea, except for a deceptive trial trip down the coast "with a fresh breeze abaft the beam."

The following figures, relating to *Wampanoag*, will give some idea of the nature of these vessels: Total weight of vessel, 4,339 tons, made up as follows: engine and boilers, 1,260 tons; coal, 750 tons (2,010); battery and objects of ordnance, 111 tons; spars and rigging, 100 tons; anchors and chains, 60 tons; boats, 29 tons; 376 men and stores, 53 tons; bare hull, 1,975 tons; cubic feet occupied by engines and Martin's patent boilers, 17,437!

*Tennessee*, same as above except engines, the entire steam machinery has been taken out, and is being replaced by new; we have

not space here to treat of the costly alterations made on the ship, but will do so on another occasion—suffice it now to say that this vessel, by the time the present repairs are done, will have cost the treasury some two and one half million for construction, repairs and alterations.

*California, Illinois, Guerriere*, modified *Wampanoags*, constructed of green timber, rotten to be broken up, *Antietam, Java, New York*, and *Pennsylvania*, same as last, keels laid 1863; still on the stocks—(two, we think, with live oak frame,) *Delaware*, same, in use as floating hospital. Quarantine, N. Y. All this class had Isherwood (60 x 36) engines made for them, and piled in the Navy yards now condemned.

*Susquehanna*, old paddle vessel some 22 years old, is now being "repaired" into a screw; and is, we believe, to be fitted with an Isherwood engine.

*Lancaster, Brooklyn, Pensacola, Hartford, Richmond*, all built before the war 1853-60, machinery built by private establishments, probably the best vessels in the wooden Navy, but they are fast becoming, if not already, obsolete, and are not fitted to engage modern vessels of same displacement.

*Albany, Congress, Severn and Worcester*, modified *Wampanoags*, built of white oak, rotten and worthless, not worth repairing, have Isherwood (60 x 36) engines.

*Powhattan*, old paddle vessel, some 22 years old.

*Saranac*, old paddle vessel, some 20 years old.

*Alaska, Benicia, Omaha and Plymouth*, built in 1868 of white oak, and by this time must be pretty rotten, they are equipped with Isherwood engines, and some of them with Martin patent boilers, etc. They are small vessels, length between perpendiculars 250 feet 6 inch, beam extreme 38 feet, depth of hold 19 feet, 7 inch.

*Lackawanna, Ticonderoga, Canadigua, Monongahela and Shenandoah*: dimensions, length 236 feet, breadth 38 feet, 4 inch, depth 10 feet 3 inch; built in 1862-3. Isherwood machinery. One or two have live oak frames. A good deal has been done to improve them, but they are very poor concerns for vessels of war. Their boilers are well above the water line, so that one shot striking the side anywhere abreast of the long length, fore and aft, occupied by the boilers would scald every body on watch in the steam department, and destroy the motive power.

3RD RATES.—*Juniata and Ossipee*, small sloops built 1862-3; Isherwood machinery; Martin's patent boilers well above water line; can neither sail nor steam as vessels of this size (1,900 tons displacement) ought to. They are said to be poor sea boats; in a late gale the *Ossipee* lost all her boats.

*Quinnidaugh and Swatara*, gun boats with white oak frames, the machinery of former condemned and put in scrap heap; are being repaired with live oak frames and "increased dimensions." *Swatara* had Isherwood machinery, it has been "repaired" into "compound." As the latter is the first vessel sent to sea with "naval compound machinery," her late voyage to Bahia has been looked at with interest. It is reported that under steam in the calm belts "with fires under six boilers, and with an average speed of 6½ knots, she consumed about 15 tons of coal in 24 hours (!) The temperature in the engine and fire rooms cannot well be kept below 130 deg." "Her average speed under sail any one day was 8½ knots. She does not stand up well under canvas."

*Galena*, an old broadside iron clad built in 1861-2; white oak frames; armor stripped

off and hull "repaired" with live oak frames and "increased dimensions."

*Vandalia and Marion*, old sailing vessels built about 25 years ago, being repaired with "increased dimensions" and fitted with a screw and compound engines.

*Iroquois and Wyoming* built before the war, with machinery by private builders, but with "Martin's patent boilers" above the water line, probably as good as any medium wooden vessels in the Navy, but for the small dimensions (only 1,500 tons displacement) they can scarcely cope with modern sloops now used for the same general naval purposes.

*Wachusett, Mohican and Tuscarora*, built in 1861-2, and copied from the last.

*Nantasket and Resaca*, condemned and to be broken up.

*Narragansett*, (1,100 tons displacement) a sloop, not a redeeming feature, built before the war.

*Ashuelot and Monocacy*, two old paddle steamers built in 1863, now in Asiatic station, and reported to be unseaworthy to be sent home.

*Nipsic*, (worthless, but a new one is being "repaired" to take her place), *Saco, Nyack and Shawmut*, gun boats with three guns, built during the war; Isherwood machinery; boilers well above water line.

*Yantic*, same, with engine by private builder.

*Kansas*, same, fitted with machinery captured in blockade runner; when new first under steam.

*Michigan*, iron paddle vessel on Lake Erie, about 25 years old.

4TH RATES.—*Frolic and Gettysburg*, iron paddle vessels captured blockade runners.

*Tallapoosa*, iron paddle vessel, department yacht.

*Wasp*, small paddle vessel with 1 gun.

*Palis and Despatch*, screw tugs.

We next come to an assortment of wooden sailing vessels. These consist of two old line of battle ships on the stocks; three ships in commission for various purposes; seven receiving ships at Navy yards; and seven laid up in ordinary; one yacht—this, we believe, has been disposed of.

Under the head of iron clads—a class which constitutes the real strength of modern navies—we find fifty one vessels entered on the Register. Of this number the *Albatross, Cohoes, Ellah, Hero, Iris, Klamath, Koka, Minnetruka, Modoc, Napa, Naussett, Nibo, Otsego, Piscataqua, Shawnee, Suncook, Umpqua, Wassuc, Yazoo and Yum*. These are the so called twenty "light draughts" on which some twelve or fifteen millions were squandered. A Congressional investigating committee undertook to find out where the responsibility of these constructions belonged, but, if we may believe their report, this important point eluded discovery. Both the Constructive Bureaus openly declared that they had nothing whatever to do with them except in a ministerial way, the distinguished officers who recommended certain important features maintained a wise silence, and the inventor of the monitor had placed himself on record, in an official communication, as in condemnation of the plan on which they were built, before a rivet had been driven in their construction. They are perfectly worthless, and as the Department has taken steps to dispose of them at almost at any price, they may be dismissed from the register.

We next come to the Passaic class; these consist of the *Comanche* (at San Francisco), *Catskill, Lehigh, Montauk, Nahant, Nantucket* and *Passaic*. These are small vessels of about 1,200 tons displacement; they were

built with great despatch during the early part of the war, during which they did most excellent service; their side armor is made of five one inch plates, and their turrets of eleven plates, each fifteen sixteenths of an inch. Laminated armor was resorted to at this time, 1862, because there were not then a mill in the country that would take an order for rolling plates of greater thickness than one inch. It was adequate to resist the artillery then in use, as is abundantly shown by their numerous scars. It is needless to say that in twelve years—from 1862 to 1874—vast changes has taken place in both armor and guns. Among other important points, it was proved many years ago, that there is no comparison between the resistance offered by a given thickness of armor, composed on one hand by a number of plates bolted together, and on the other by one solid plate; the solid armor presenting many times greater resistance than the laminated. The 7, 8, and 9 inch Woolwich rifle guns, now compose the armament of the second rate British iron clads, and are also to be seen in the batteries of many of their new and swift non armored vessels; guns of equal power made in France, in Sweden, in Russia, and by Krupp, are common in the batteries of every European navy, Spanish included.

The 7 inch gun will easily pass its shell through the armor of all but one of our iron clads, while the 8 and 9 inch can do the same execution on the strongest of them. But the 7, 8, and 9 inch are now looked upon as small affairs; 600 and 700 pounders are now afloat within the turrets of European monitors, in some cases protected by 14 inch solid plates; more monitors like these are in course of construction. It is absurd to speak of this ordnance in connection with any armor in our Navy—one 600 pound shell exploding within a turret or hull would probably decide the issue for the vessel so hit.

With most of these facts before us, the Journal in its issue of Oct. 13, 1866, called the attention of the department to this important matter of armor; and again, after more evidence of the same sort had accumulated, we urged that this matter receive consideration, under date of Feb. 24, '72, and Dec. 27, '73. In the winter of 1873-4, when the department turned over nearly all of the monitors of the Passaic class, on the Atlantic seaboard—seven in all—to iron ship builders on the Delaware and in New York, to have their hulls raised and new decks put on them, omitting the vital point of solid armor, we again placed the subject before our readers at length (March, 7 1874).

The next class of iron clads are those known as the harbor and river monitors, the *Ajax, Canonicus, Manhattan, Mahopac, Srugus*, and *Wyandotte*. These are of some 300 tons greater displacement than the Passaic class; like them they were built during the war. With regard to armor the strictures applied to that class apply with equal force to this, the turrets being made of ten one inch plates, and the side armor of five one inch plates, and "armor stringers" 4 inch thick let into the backing behind them; these stringers are two in number, bars of iron 4 by 6 inches. As the backing in this class is little more than one half the thickness of the former, the resistance is but a trifle greater. A number of these vessels are having the same character of alteration put on them as the others, hence the views expressed respecting them include these also.

It is, however, evident, that if the cost of solid armor of adequate thickness, about

\$112,000, necessary to save these two classes from utter worthlessness, is added to the \$180,000—cost of present repairs—and to the indefinite, but large amount that will be expended, under the head of "extras" and "repairs to steam machinery," a sum total will be reached, which would go very far towards building an entirely new iron clad, comprising all the improvements demanded by the last ten years of progress, and which are essential to enable us to meet the armored vessels now in European navies, should they make a hostile visit to our harbors or coasts. That a class of defensive vessels suited for this purpose is a matter of the very first importance no military man will deny. Yet no intelligent effort or proposition has been made in this direction.

The next class of iron clads consists of the double turreted monitors. *Miantonomah*, *Amphitrite* formerly *Tonawanda* (at Mare Island, Cal.), and the *Terror* (formerly *Agamemnon*). These were built during the war; their hulls are of wood—green white oak—and are now thoroughly rotten; their displacement is about 3,000 tons. The turrets are made of ten one inch plates, hence what has been said of the worthlessness of this sort of protection is also applicable to this class. It is understood that three of these vessels on the Atlantic seaboard, are undergoing repairs of a very novel character, viz: the wooden hulls are being "repaired" by replacing them with hulls built of iron. As their armor on hull and turrets is worthless, as their steam machinery (in two of them of the well known Isherwood type), is pretty well used up, as their wooden hulls are rotten, and as their turret arrangement cannot be wisely applied to an iron hull without reconstruction, the senselessness of wasting appropriations in this way needs no further demonstration.

It is represented that the *Monadnock*, whose white oak hull is now rotten in California is being repaired by having a new vessel built of iron at New York, to be there put together, the parts marked and then shipped to San Francisco, where they will be put together, and thus carry out such "repairs," as we think were little imagined by Congress when the appropriation bill passed that body.

If, these "repairs" to this class do not carry with them "increased dimensions," even should the after thought of solid armor be acted upon, they cannot be made adequate to the requirements of the times. The makeshift that it as been affirmed is to be adopted, is a foolish waste of money. It is to consist in straightening and applying to "raised" sides of these monitors, the narrow, curved and brittle solid hammered five inch iron slabs made for the central part of the turret walls of the *Colossus* class. These slabs are utterly unfit for armor; all the guns already mentioned as sufficiently powerful to send their shells through the laminated armor, will produce equally damaging effects on this inferior hammered metal, which for the purpose of a facing, exposed to shot, is but little better than cast iron.

Again, their displacement is insufficient to carry two turrets and permit them as well as the hull to have the thickness of armor required to keep out the projectiles from guns now afloat. Still further, if the "increased dimension" plan is resorted to, the present steam power is inadequate to give even tolerable speed. Is this then to be "repaired" with "increased dimensions?" View this matter in any light, it is evident the old jack knife, with the new blades and handle, is the old jack knife still.

The *Kalamazoo* class of iron clads, the next in order, consists of the *Colossus* (formerly *Kalamazoo*), *Massachusetts* (formerly *Passaconaway*), *Oregon*, (formerly *Quins gamond*), *Nebraska* (formerly *Shakamaxon*).

These vessels were begun during the war, their hulls are of white oak, and may now be regarded as worthless. Speaking of them, the Chief of Bureau of Construction (see appendix to Secretary's Report, 1871;) says: "Four of the largest class, built in the Navy-yards of white oak, are now on the stocks, two of which are too much decayed to be completed, and should be broken up. One, the *Colossus*, I respectfully recommend be completed and launched as a type of the class." Let us see what this type is: It has been decreed that this vessel is to be finished as a broadside iron clad, throwing away the costly turret arrangements that have been made for her, and 10 guns have accordingly been cast for her new battery.

Whoever is responsible for this recommendation, we are bound to say, made it either without due reflection or in ignorance of the existing relations between guns and armour. It would produce a vessel years behind the times, unable to cope with modern iron clads; the hull of white oak, which would rot in a few months, with displacement (even with one quarter of the steam power left out, as is the case), insufficient to carry armor thick enough to give protection against artillery long since afloat, and with a maximum speed, under favourable circumstances, of not over 10 knots! Such is the character of a vessel the Department is seriously recommended to construct.

The *Chickasaw*, *Kewadin* and *Winnabago* are the remains of the Mississippi flotilla of ironclads, built during the war. They have had their day, and now add nothing to the strength of the Navy.

The *Dictator*, built during the war, has a strong iron hull, probably in nearly as good condition as when built, but the hull is armored with lamination plates, and bars let in the backing behind them; the turret is also made up of laminated plates and bars—no better armor could then be had. Armor this vessel with solid armor, and equip the turret with the best guns attainable, and though built so long ago, she would be one the most formidable iron clads in existence. There are not three iron clads now built that could engage her with impunity if she was put in the condition she ought to be put in at once. If a small part of the money that has been wasted in tinkering at worn out vessels had been applied in this way, no one can deny that it would have been a wise expenditure.

The *Puritan* has an iron hull similar to, but 25 feet longer than the *Dictator's*—it was pronounced by Admiral Goldsborough's board to be of "masterly workmanship." This vessel, completed with solid armor, (as already mentioned regarding the *Dictator*,) would be a strictly first class iron clad. She is now at League Island, never having been completed; the money that ought to have been spent in giving the country an iron clad capable of meeting the enemy has been frittered away.

The *Romaque* is one of the frigates of 1854, cut down during the war, and fitted with three turrets, made of eleven plates fifteen sixteenths of an inch in thickness—as before pointed out, a mere pasteboard protection; her sides are high, and armed with four and one half inch hammered plates, fastened with through bolts directly on the old hull; altogether she is of but little ac-

count. She is now in commission in New York Harbor.

The last vessels on the register are twenty five steam tugs, mostly purchased or built during the war, averaging about 250 tons, and mounting in all eleven brass boat guns, and scarcely worth mentioning as part of the naval force.

We have thus pictured the condition and character of our vessels, and must be allowed to say, without imputing blame to any one, it exhibits our Navy at a very low ebb. The navy is absolutely but little if in any better condition to day, respecting its material, than it was six years ago, or there about, and relatively with the progress of naval science it is in a much worse condition than it was then. Millions have been tinkered away without system and without intelligent appreciation of the real needs of the service. Our vessels have long since ceased to be "individually excellent;" on the contrary, they are now individually very imperfect. The wooden vessels are slow and feebly armed; vast sums have been and are still being spent on the iron clads, and yet in the very points where they are the most deficient nothing has been done; the result is, that after all this money has been spent, they are not only nearly worthless for war purposes, but they are but little better than before this unsystematic patchwork was begun.

We do not mean to charge any individual with the responsibility of this and other blunders equally gross. The nature of our system of naval administration is such that responsibility for faulty construction or stupid blunders is never fixed. If a vessel is slow, deficient in stability or other essential qualities; has a greater draft of water than promised, is deficient in battery; if millions are expended in making alterations and repairs not needed, and neglecting those imperatively demanded; then if the disgraceful results of our "system" are, with the simplicity of a child paraded before the world by a "grand naval drill," it may well be asked, who or what is to blame? Instead of an answer, a familiar phrase is heard:

"Thou canst not say I did it; never shake Thy gory locks at me."

This article is a long one, but we have merely crossed the threshold of a subject which is so important to the Navy and the country that we intend to continue its discussion, going still further into details.—*Army and Navy Journal*, 26th Dec.

### The so-called Whale Boat War of The Revolution.

To the Editor of the *Army and Navy Journal*.

SIR: On the part of the British this was really an organized gunboat system, by which vessels capable of co operating with their army and the heavy draft ships of their navy, were placed in the control of loyal gentlemen conversant with the then unsurveyed waters of America and duly commissioned for the service. These gunboats were costly; we find, December 3, 1781, an account of a small unfurnished, and very ordinary "whaleboat," stolen by an enterprising party of American bushwackers, and being ransomed for £200, a large sum in those days, when £1 would buy \$200 in Continental money; they were about forty feet long, thoroughly well built, carrying from two to four guns, with arm chests and small arms, some of them with three masts and pulling twenty six oars, perfect sea boats, picking up prizes on the broad ocean, ex-

cellent gunboats, getting close in shore and suppressing the fire of hostile infantry during a landing of British troops, on foraging parties or other expeditions—and thus fulfilled many required conditions at an age when steam was unknown.

In course of time the Americans essayed to fit out somewhat similar vessels, but in their case the want of a base of operations, of respectable associations, of a firm military control, and the stern sense of responsibility which it involves, at once became manifest by speedy degeneration into a semi-smuggling, and, taken in the whole, rather cowardly and chicken roost robbing, course of proceeding, which, effecting no useful purpose, never co-operating with regular troops or concerted and important enterprises, or so much as heard of in connection with Washington's Army, soon fell into disrepute even with the Americans, whilst the British unsparingly denounced it as the service of a collection of thieves and marauders.—(*New York Post Boy*, June 28, 1779.)

Far different was it with the Association of Loyal Refugees, by which name the British system was known. On all occasions we find them fighting bravely, co-operating as auxiliaries with men of war, covering with their fire the landing of British detachments, acting as convoys in distant and dangerous expeditions, making prizes of large vessels hundreds of miles away from New York, and punctually returning prisoners and prizes to the authorities there, and in the gay dinner parties, for which New York under the British was celebrated a regular toast, after that of the Royal family and the commanders, was: "The Loyal Associated Refugees." In the *Royal Gazette*, January 3, 1781, appears a proclamation of His Excellency Sir Wm. Franklin, Royal Governor of New Jersey, and then President of the Hon. Board of Associated Loyalists, showing the royal authority under which they acted, and at Lloyd's Neck the association had a strong fort, surgeons and king's ships. The American troops, by order of General Washington, at one time endeavored to take this fort, but the attack not succeeding, the matter was hushed up. Governor Franklin's wife died in New York, on the 28th of July, 1776, where the curious may still see her mural tablet in St. Paul's Church. Twenty years before the war the following advertisement appears in the *Mercury* of Oct. 28, 1754:

GENERAL POST OFFICE, PHILADELPHIA,  
Oct. 10, 1754.

This is to give notice that until Christmas next a post will set out every Monday, Wednesday, and Friday, precisely at eight o'clock in the morning, from Philadelphia for New York, and from New York for Philadelphia, and will come in at both these stages every Tuesday, Thursday, and Saturday, about five o'clock in the afternoon. By command of the Deputy Postmaster General.

WM. FRANKLIN, Comptroller.

In the *Mercury* of Nov. 15, 1779, is a notice requesting the Loyal Refugees of the Province of New York to meet that evening at 5 o'clock, at the house of Mr. John Amory. Two days before this, an invitation had been issued to the representatives of the Loyal Refugees of the several provinces in rebellion, to meet at the Coffee House, on Tuesday evening at 5 o'clock, signed by Anthony G. Stewart, President. The object of these meetings was to frame and present an address to His Excellency, Sir Henry Clinton, Governor, and to which he replied,

"I receive with the highest satisfaction an address from so loyal and respectable a body of gentlemen. It gives me hope that my most earnest wish to protect and derive assistance from your exertions, has been felt by you. The sense I must have of the honor you confer on me, is a new motive to my further efforts to deserve well of the Refugees, and I approve of your assembling, as your object must certainly be consistent with the public good."

The following official papers, published July 6, 1779, tend to show the character of the organization, its affinity with the regular navy and its strict discipline. The report of Lieutenant Commander Winslow is omitted as too lengthy:

ON BOARD THE DIANA TRANSPORT, WHITE-STONE, JUNE 2, 1779.

DEAR SIR: I have this moment received the enclosed report from Lieutenant Commandant Winslow, and forward it immediately by Mr. Leonard, who will do himself the honor of delivering it to your Excellency, and of explaining to you whatever may be desired by your Excellency, and the other of our respectable and obliging agents to whom His Majesty's "Loyal Associated Refugees" are under infinite obligations. I have the honor to be, with great respect and esteem, your Excellency's much obliged, and most faithful servant,

EDMUND FANNING, Col. Associated Refugees, etc.

HIS EXCELLENCY, GOVERNOR FRANKLIN.

The above letter encloses report of Lieutenant Commander E. Winslow, Associated Refugees, written on board His Majesty's ship *Royal Charlotte*, in Huntington harbor, Long Island.

Captain Howe's compliments to Mr. Leonard and the commanders of the Associated Refugees armed vessels, and begs to return them his particular thanks for their strict diligence and attention in attending the convoy from Rhode Island, and acquaints them that in justice to their conduct he has represented their zeal and assiduity to Sir George Collier, commander in chief in New York, dated on board His Majesty's ship *Thames*, in Huntington bay, June 30, 1779.

TYRINGHAM HOWE.

In an address presented to Colonel Cuyler, previous to his departure for England, by a camp at Smithtown, Long Island, we have a further view of the association:—

SIR: The Loyal Refugees established at Smithtown, beg leave to signify their approbation of your conduct in the support of His Majesty's government in every stage of the rebellion. Your firmness and uniform deportment in the hour of trial, has caused many to follow your example, and merits applause. With gratitude they return you thanks for the kind attention and patronage you have at all times shown the loyalists, and with concern they regret your departure at this time, though they flatter themselves with your speedy return to reassure them. As you are personally acquainted with their sentiments, they doubt not but you will give assurance of their loyal attachment to His Majesty and government, and of their readiness to give every assistance to the suppression of the rebellion. They wish you a safe passage and speedy return, and with every mark of esteem, have the honor to be in behalf of the body, sir, your most obedient servants, P. V. Allyn, major commanding; P. Luke, S. V. D. Poel, B. Dyer, captains; M. Pendergrass, Wm. Castles, John Huyck, lieutenants; P. Darland, quartermaster.

It would be impossible, from want of space, to give even a suggestion of the details of the daring and adventurous services of these gunboats or "whale boats," but a few selected items illustrate at least the diversity of their employment. On the 12th of March, 1781, we notice the accounts of an expedition, in company with men of war, by which the Americans were severely raided on in several places on the sea board. The loyal associates in their light draft boats, bore all the brunt of the actions, were frequently under heavy fire, and returned successful. In the *Post Boy* of June 14, 1779, is the following: "Last Thursday a party of Loyal Refugees landed at Shrewsbury, New Jersey, and brought off Colonel's Hendrickson and Wyckoff, Mr. Van Brunt, Captain Chaddock, Captain McKnight, (who broke his parole here some time ago) one of the militia, and a Continental soldier. The first five were Tory persecutors. About 9 o'clock Friday morning, returning to their boats, they were attacked by a body of militia, whom they repulsed, killing three and wounding eleven. They then brought off their prisoners."

On the 16th of April, 1781, we catch a glimpse of an English source of supplies. "Last Thursday Captain Turner of the whale boat *Trimmer*, sent in (to New York) a sloop which he cut out from Morris river, in the Delaware, the Monday before, with two other vessels which have not yet arrived. On the 23d of April, the same boat sends in "a rebel galley and a large schooner loaded with Indian corn." On the 11th of June, then off Sandy Hook, and nearly in sight of the light house, the *Trimmer*, in a gale, capsized and sunk, carrying down with her thirty five souls. After various remarks, at different times, on the protection to the commerce of New York, afforded by the "cruising whale boats of the Loyal Refugees," the *Royal Gazette* on the 30th of May, 1781, gives notice that the Americans had also fitted out large boats on the Delaware. "Three large whale boats are now fitted out at Philadelphia and ready to fall down (the river) in order to protect the trade of the Delaware against our cruising whale boats, which have greatly annoyed it. These boats are still intended to cruise along the Jersey shore, from Cape May to the Hook. (Sandy). Our coasts will therefore be upon their guard." In consequence of this notice, the Loyal Refugees sent out one of their bravest men—(a daring loyalist, procribed by the Americans as early as 1773; a prisoner in New York when Washington held the city, and escaping from him)—in command of two boats with picked crews, the results of which is thus given in the *Mercury* of August 24, 1781—almost the same account being published in the *Royal Gazette*, with the additions that Captain Thompson's lieutenant was wounded, and of the American armament, which consisted of one four pound howitzer and two swivels in each boat, six pieces in all, besides small arms. "About 3 o'clock last Tuesday afternoon, a very severe action was fought between the whale boat *Surprise*, Captain Thompson and her consort; both their crews consisted of twenty six men, and the two rebel whale boats belonging to Philadelphia, off Little Barnegat, on the coast of New Jersey: The conflict lasted more than an hour within pistol shot, in which Captain Thompson received a dangerous wound in the thigh, notwithstanding which he continued the contest until the rebels took to their oars, first

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## The Volunteer Review,

AND

### MILITARY AND NAVAL GAZETTE

"Unbribed, unbought, our swords we draw,  
To guard the Monarch, fence the Law."

OTTAWA, TUESDAY, JANUARY 26, 1875.

TO CORRESPONDENTS.—Letters addressed to either the Editor or Publisher, as well as communications intended for publication, must invariably be *pre-paid*. Correspondents will also bear in mind that one end of the copy-sheet should be left open, and at the corner the words "Printer's Copy" written and a two-cent stamp attached to the writing of the communication placed thereon will pay the postage.

LIEUT. J. B. VINTNER, of Victoria, and Captain H. V. EDWARDS of New Westminster, are our authorized Agents for British Columbia.

Our object in reviewing Major General Collinson's able paper on "the Strategic importance of military harbors" is to show our readers how important a matter it has become, to keep before the people of Great Britain the necessity of not only defending the *citadel*, as the British Islands may be called, but also the outworks thereof—the colonies and foreign possessions—which constitute the British Empire, a subject which is lost sight of almost if not altogether by the great mass of military and naval strategists; yet nothing can be more certain than the downfall of the citadel if one of the lines of communication with its outworks are cut. In order to show what real importance is attached to this problem of the strategic defence of the Empire, the gallant lecturer points out, without following the argument to its legitimate conclusion, the fact that coal is the key note of the question we are considering to-night, as well as of the larger question of our war policy," and then goes on to show what the "range" of steam propelled war vessels really is, from a statement of the celebrated Mr. Rzed as follows:—

"Maximum of unarmored ships—*Mersey*—Coal power, 350 tons; total distances to which it will carry them at 12½ knots, 1,550 knots; at 11 knots, 2,320 knots.

"Maximum of armored ships—*Monarch*—Coal power, 600 tons; total distances to

which that will carry them at 12½ knots, 1,560 knots; at 11 knots, 2,310 knots."

A knot is a nautical mile and the rate is per hour, so that the *Mersey's* coal or steam power would carry her at 11 knots per hour, 1,160 miles out and the same distance back, or about half ways between Quebec and Liverpool. The larger the armor-clad vessel the less its coal capacity, and as a consequence its power as a cruiser is limited. It will also be seen that the consumption of coal is largely increased when only a slight increase of speed takes place, and as a consequence the war vessel of the future must be both a sailing and steam propelled vessel. The lecturer says: "At present we may take it that a war steamer's fuel will carry her from Southampton to Gibraltar, but not to Malta; to Halifax, but not to Bermuda; to Cronstadt, but not back again." It is then shown that there are not sufficient coaling stations for war vessels on the coasts of the British Islands, and those that are in existence are placed with a view to general commercial requisitions, and not at all suited for war purposes, and of no real strategical importance.

Naval arsenals, dockyards, and facilities for repairing and refitting vessels of every description are next dealt with, and a distinction made as to position: "There is this difference between a coaling station and an arsenal as regards position, that the former should be as easy of access as practicable; whereas one of the most important points about the latter is that it should be as secure as possible from all attacks by land or sea." The loss and destruction of a coaling station would be just as fatal in the event of war, and the arguments that hold good for the value of a coaling port is equally good for the port containing an arsenal, as well as being a strategical harbor. It would simplify the defence of Great Britain very much to have all three combined, and we submit with all due deference to the opinion of the gallant General, "that the natural solution of the military and naval problem involved is to be found in this direction. On the subject of Strategic Harbors it is not our intention to say much, we have given reasons sufficient to show our conviction as to the existing necessities which must define their position, and the range of steam vessels will have more to do with that than any other principle. We will content ourselves with one or two paragraphs, illustrating the manner in which naval operations are to be conducted in future and to what its principles have been reduced:—

"Therefore it appears probable that on the whole, for this important branch of naval warfare, fleets will in future work on what we should call on land interior lines, and that the most useful positions for strategical harbors will be just in rear of those lines, to continue the military simile." . . . .  
"The best strategical lines for the defence

of a sea are in some respects the reverse of those favorable on land for covering a tract of country. On land a convex line is favorable to the defenders because they can move by the interior lines shorter than the enemies round the circumference; but at sea with the land behind you preventing your moving by those interior lines the most favorable line for defensive strategy would be a concave one, and the best position for the main body would be near the centre of the curve."

The gallant officer then goes on to show that "the main object" of any expedition against the British Isles would be London, so that there is a citadel within a citadel in the case, and the hazards to be encountered in the accomplishment of the main objective demands the total collapse of the offensive and defensive power to warrant the attempt—that such a collapse can be brought about in two ways is evident—mismanagement and misconception of the true *naval strategy* which the defence of the Empire demands. The first is exemplified in the disorganization of the army and navy consequent on what has been falsely called the late Reforms—the latter is foreshadowed to a considerable extent by the desire of military strategists to reduce modern warfare to the conditions under which it was waged in the days of the *Grande Monarque* in which the extensive fortifications on the most approved systems of VAUBAN, COBURN, or CONNORVILLE retarded the march of armies led by military pedants and taught to perform all movements to the cadence of a pendulum without regard to the constantly varying circumstances which each operation involved.

What may be called the details of defence is next dealt with—the necessity of fortifying small harbors and indeed all possible landing places on the south and east coasts of England is pointed out as ports of refuge for coasting vessels and for those men-of-war which could not keep the sea in the face of a superior force. He says: "Where land defences can be applied in such situation it must be recollected that they not only enable you to reduce the number of sailors and ships required for the defence of one but they supplement them at a very much cheaper rate. For the same expense for which one gun can be mounted and kept effective in an armor-plated vessel, about ten guns can be mounted in the strongest manner and kept effective on shore. Every additional defence of this kind tends to put the coasts in the position of the banks of a river which the enemy cannot get at."

The defence of our sea ports and coasts generally by fortifications is to prevent their surrender to an inferior force—or their destruction by the same, but if at any time the failure of Britain's first line of defence—her fleet—sets at liberty a sufficient force of her enemy's war vessels the surrender or

destruction of her most elaborate fortified ports is a simple question of time. If ever the power of offensive warfare passes out of the hands of the British people, it will assuredly be followed by invasion and the loss of Empire, and it is upon her fleets alone that her powers of offence must be based, and her land forces can only maintain her last defensive lines so long as to enable the authorities to, secure an honorable capitulation; but that such defence opposed to the modern ironclad fleets would be effective or final, as regards the ultimate termination of the contest, no strategist will admit. In fact this problem of the defence of Great Britain will be solved, if at all, in her colonies and foreign possessions—her rulers, King, Tory, or Radical, may concentrate all her military forces within the compass of her islands and all her fleets for the protection of her coasts, but it is nothing more than a retreat within the citadel with all the outworks in the hands of the enemy and all her communications cut off. Major General COLLINSON R.E., has given an able lecture on the strategy of defence as it existed in the days of NAPOLEON LE GRAND, when the waves and winds fought for Britain in a more effectual manner than either her statesmen or strategists, and not at all applicable to the days of KAISER WILHELM KURFURST. It is curious too, that the discussions on this clever paper were confined principally to the value of "holding guard" in Filyburg, wherever that may be, and not one word was said or a doubt let fall as to the soundness of the doctrine or otherwise. In our next we shall give from a paper read by another British officer, not quite as high in rank, an exposition of the true *Naval Strategy* of the Empire—for military action must always be merely subsidiary in the operations undertaken by an insular empire like Great Britain.

We publish in another page (without the diagram) an article from the *United States Army and Navy Journal* of 26th December on the *Offensive Torpedo* as improved by Captain ERICSSON and must say that notwithstanding its neat appearance on paper we cannot see its utility. The diagram shows us a section of the side and plane sheer of the ironclad *Devastation* with the torpedo in contact; the case appears to be a cylinder with a semi-circular head, its length over all is about 14 feet with a diameter of 30 inches (at least the scale shows so much); it has a pair of screw propellers on the same shaft at the stern, a bent tube entering the main case ten feet forward of the screws and attached to the stern by an upright piece allowing full play for the screws, receives and prevents the tubular cable from fouling the propellers. It carries a heavy charge, and if the *Devastation* could be got into a mill pond, remain perfectly still, take no precautions whatever, it is quite possible she might be blown up with less than the

charge of ERICSSON'S torpedo. Meantime such experiments as the following will compel scientists to receive all tales of its efficiency *crum grano salis*.

"Another of the series of torpedo experiments against the double iron bottom of the *Oberon* was made on the last Saturday in November at Stokes Bay, near Portsmouth. The mine was charged with 500 lbs. of damp disc gun-cotton, and was placed on the shoal running out from Monckton Fort, at 30 ft. distance from the stem of the vessel on the starboard quarter, its submersion being 48 ft., its horizontal distance from the outer skin of the double bottom being 30 ft.; but, as the *Oberon* draws only 12 ft. the absolute distance of the mine from the double bottom was 52 feet. As the object of this experiment was to compare results with the last the conditions were kept precisely similar, except in one important particular. In the last experiment the mine was suspended from a spar, but on Saturday it rested on the surface of the shoal, so that in the results of this experiment and the last a direct comparison was obtained between the effects of a buoyant and a ground mine. After the mine had been fired the *Oberon* was towed by a couple of government steam-tugs into Portsmouth Harbor, and placed in dock for examination. When the dock had been cleared of water it was seen that the outside of the double bottom had suffered more than in the last experiment, and that the damage was confined within a smaller area. Some of the plates of the outer skin between the longitudinals were bent inwards and a little cracked in the line of rivets, and the thin unsupported plate which connects the two sides of the double bottom abaft the stern-post was broken so as to admit water. This fracture was evidently due to the blow from the explosion of the mine taking effect upon the edge of the plate. The ground mine, therefore, delivered a more direct and concentrated blow upon the *Oberon*, and inflicted greater damage than did the buoyant mine in the last experiment. When the *Oberon* entered the dock it was found that her trim was altered by 16 in. greater depth by the stern and 10 in. less by the head. It would appear, therefore, that but very little water got into the double bottom by way of the fracture. No water got inside the ship, the inner skin of the double bottom being again free from the slightest damage."

In our issue to day we republish the leading article from the *United States Army and Navy Journal* of 26th December, entitled "The U. S. Navy, 1874-5" for the value of the instruction it conveys relative to our neighbor's defensive arrangements.

It is well for the people of the United States that Great Britain still commands the seas, and that she is not greedy of territorial acquisition or covetous of her neighbor's wealth; because the seaports of the United States present such tempting plunder to an intelligent naval "WULFEN," as would make old "BLOOMER'S" mouth water if he could rise from the dead to see it. Amongst the many admirable institutions the United States possess, that which has trained such naval officers as Commodore FOXHALL A. PARKER, is not the least important, and it is a pity to see talent like his, which could be usefully employed in teaching those admi-

nable tactical lessons which we have reviewed so lately, idle, for of that fleet on which the safety as well as the honor of the country depends.

The report of the Chief of the Ordnance Department of the United States, for which we are indebted to the *Army and Navy Journal* of 2nd inst., contains an interesting account of the conversion of a 10 inch cast iron smooth bore gun into an 8 inch rifled gun with a wrought iron tube; it also gives a statement of the guns at present mounted in the various forts, and advises their gradual conversion into rifled artillery. With the best material in the shape of cast iron in the world, it cannot be a matter of great expense to produce superior rifled guns in the States, and it is to be presumed that economy alone is the only reason why it has not been done.

We copy from the *United States Army and Navy Journal* of 2nd inst., a letter on "The so-called *Whale Boat War* of the Revolution," in which the writer with true manliness and generosity does justice to the bravery of the *United Empire Loyalists*, and makes us wish that he had given us the authorities from which his interesting information is taken. Of the 12,000 gallant exiles that followed their country's flag into the Northern wilderness, the name and memory are still kept alive by their descendants who holding the first offices in the State and the first places in the Society of the Dominion of Canada, are building a British Empire on this Continent of which the Mother Country is justly proud; and in less than a century from the day their ancestors landed as homeless exiles on its shores have raised that Empire to the fourth rank of the nations of the civilized world—extending its boundaries from the Atlantic to the Pacific—reckoning its commerce by millions of tons, and its shipping by thousands. Verily the path of duty is the path of honor, safety and profit.

The Spaniards seem to have at last solved the problem of the form of Government best suited to themselves by almost unanimously declaring for the eldest son of the ex-Queen ISABELLA as their future King, under the name of ALFONSO XII., thus showing the intrigues that uphold "liberty and equality" for their own purposes, the rottenness of their pretensions, and that Republicanism is as little applicable to the state of human society in the nineteenth century of the Christian era, as it was in the first century after the building of Rome.

It is to be hoped that this event will put an end to the nonsense some leading Canadian Journals have been in the habit of putting before their readers since Prim's successful rebellion introduced anarchy into a badly governed State out of which the only remedy could be sought was a return

to the system he and his co-conspirators had overthrown.

The complications likely to arise out of this matter are grave enough. SERRANO, the late President (save the mark) of the Spanish Republic, is reported to have carried his grievances to Berlin in hopes that BISMARCK and KAISER WILHELM KURFÜRST will help to reinstate a liberal potentate such as he has proved himself—always exceedingly careful of his own interests. It is just possible that the *Spanish ular* may be fatal in this case without "the Austrian Matel." A far greater conqueror (NAPOLEON LE GRAND) than either lost crown and liberty in the Iberian peninsula, and German interference has not even the acquiescence of the Pope to sanction it.

Nearer home some of our neighbors are endeavouring to make the rights exercised by the Spanish people the cause or reason why their Government should interfere in Cuban affairs; they had better take care, the *Arapiles* is not now in dock, and notwithstanding the imposing effect of *sea drill* the whole American fleet would find more than a match in what remains of the Spanish—it is not every day a mud-flat can be sunk at the entrance of a dockyard.

It is reported that all the European powers have decided to recognize ALFONSO XII. as soon as he appoints accredited ambassadors. If he has learned anything in Paris by his exile it will be to put down with a strong hand representative government as administered in France—to restore the Old Constitution of Spain—and to punish as they deserve the authors of her late humiliation. France will be sure to follow the example set her by restoring NAPOLEON IV. A strong personal Government is the only one possible for both countries.

Mr. O'LEARY, a delegate from the Irish Laborer's Union, sent out to examine into the capabilities of the North West as a field for Irish emigration, gave a very interesting account of his travels through the Dominion, at the Rink Music Hall, on Wednesday evening last. The lecturer began by stating that he landed on the shores of the Dominion on the 6th June, 1874, and had since spent some seven months in an examination into the resources of the Dominion, and was highly pleased with what he saw. He goes on to describe his sensations of wonder when first beholding the rich and wide-spreading natural fields of the North West, with their luxuriant grasses, myriads of flowers, numerous game, and herds of fat sleek cattle, the realization being much beyond what he anticipated. He spent some weeks in visiting various portions of the country. He declared the soil as superior to any he ever saw elsewhere, and as producing the most superior crops of roots and cereals. Wild fruits, such as raspberries, strawberries, cranberries, gooseberries and grapes were found growing in great profu-

sion, also wild hops in various parts. He described his buoyancy of feeling under 120° of heat, in consequence of the dryness and lightness of the air, and considers the climate as wonderfully healthy and invigorating. The autumn season of last summer in Manitoba, he described as the most beautiful weather he ever experienced anywhere, the Indian summer apparently lasting for some three months. The Red River was open for navigation as late as 4th November, when he passed up its waters by steamboat, on his way to St. Paul, leaving summer behind him and finding ten inches of snow upon the fields of Minnesota. An appreciable difference in climate being discernable on passing up from the valley of the Red River on to the height of land. Mr. O'Leary described in glowing terms the grand water system of that great inland continent pouring through a dozen streams from the Rocky Mountains each draining some thousands of miles of plain into Lakes Manitoba and Winnipeg and forming their first junction, of natural and artificial navigation, under the walls of Fort Garry through the Red and Assiniboine Rivers.

The chair was occupied by the Hon Mr MACKENZIE, who at the close presented the thanks of the audience to Mr. O'LEARY for his practical and eloquent lecture.

AN extra of the *Canada Gazette* was issued on Wednesday, the 20th inst., commutating the sentence of death passed on AMBROISE LEPINE, at the late Assizes for Manitoba, to imprisonment for two years and the permanent forfeiture of his political rights;—

GOVERNMENT HOUSE

January 15th 1875.

Sir,—I am commanded by the Governor General to inform you that His Excellency has had under his full and anxious consideration the evidence and other documents connected with the trial of Ambroise Lepine who has been capitally convicted before the Court of Assizes held at Winnipeg on the 10th day of October, 1874, of the murder of Thomas Scott on the 4th day of March, 1870, at Fort Garry.

Although His Excellency entirely agrees with the finding of the jury, and considers that the crime, of which the prisoner Lepine has been convicted, was nothing less than a cruel and unjustifiable murder, he is of opinion that subsequent circumstances, and notably the relations into which the provincial authorities of Manitoba entered with the prisoner and his associates, are such as, in a great degree, fetter the hands of justice.

It further appears to His Excellency that the case has passed beyond the province of Departmental Administration, and that it will be best dealt with under the Royal instructions, which authorize the Governor General, in certain capital cases, to dispense with the advice of his Ministers and to exercise the prerogative of the Crown, according to his independent judgment, and on his own personal responsibility.

I have, therefore, in command, to inform you, that it is His Excellency's pleasure that the capital sentence passed upon the prisoner Lepine be commuted into two years imprisonment in gaol from the date of con-

viction and the permanent forfeiture of his political rights.

His Excellency desires that the necessary instrument for giving effect to this commutation be forthwith prepared.

I have the honor to be, Sir,  
Your most obedient humble servant,  
H. C. FLETCHER,  
Gov. Gen.'s Secretary.

To the Hon. Minister of Justice,  
Ottawa.

GOVERNMENT HOUSE, OTTAWA,  
January 18th, 1875.

MY LORD,—In further reference to previous correspondence, I have the honor to enclose for your Lordship's information, a copy of a communication I have addressed to the Honorable Telesphore Fournier, my Minister of Justice, instructing him to commute the capital sentence recently passed on Ambroise Lepine, into imprisonment for two years in gaol, and the permanent forfeiture of his political rights.

2. In thus dispensing with the advice of my responsible ministers, and exercising the Queen's Prerogative according to my own judgment, I am aware I have undertaken a very grave responsibility, more especially as the facts and considerations by which the issue has to be determined are of a very complex and embarrassing character. Upon these, however, I will not enlarge as they have already been fully set forth in former despatches.

3 I am quite convinced that the matter is one which, in the general interest of this country, will have been best dealt with by my direct action.

4. Although the commuted sentence may appear very inadequate to the enormity of the crime, of which it is the punishment, I believe it to be such as will best satisfy the conflicting exigencies of the case.

I have the honor to be, my Lord,  
Your Lordship's

Most obed't humble servant,  
DUFFERIN.

To the Rt. Hon.  
Sec. of State for the Colonies.

We have received a copy of the Daily "Advertiser," just issued in Toronto, by Mr. E. Devine, who has for some time past been publishing a weekly of the same name. The main feature about the new venture is that every Saturday's edition is to be printed on blotting paper, by which means it will be made useful if not instructive.

#### Dominion Board of Trade Officers.

At the meeting of the Dominion Board of Trade on the 22nd the following officers were elected.

President—Mr. C. F. Fairweather, of St. John, N.B.

Vice Presidents—Ontario, Mr. A. Brown, Hamilton; Quebec, Mr. Robertson, Montreal; New Brunswick, R. Marsh, of King's County; Nova Scotia, Hon. Mr. Stores; Prince Edward Island, Hon. Mr. Howland.

Executive Council for 1875—Messrs. Darling, Montreal; Fry, Quebec; Pennock, Ottawa; McLennan, Montreal; Sheriff Harding, St. John; Howland, Toronto; Joseph, Quebec; Cunningham, Kingston.

(Continued from page 41.)

(throwing over four of their dead. Among the number, one of their captains, named Eccles. Capt. Thompson's behavior on this occasion does him much credit, and demands the tribute of praise from every loyal heart. It is remarkable that after having received a swivel ball in his groin, he discharged his fusee twice; and when the anguish of his wound had disqualified him for the more active part of the contest, he still continued giving orders in a supine posture, and exhorting his men, who were all refugees, not to strike the colors to the rebels. This relation is given to the public not to magnify the action in its immediate consequences, but as a clear testimony to the more elevated bravery of those who have nobly sacrificed their domestic ease and enjoyment to the best of all principles, that of loyalty."

The wound was mortal, and in a corner of a New York churchyard, in a land which he fought against, lies the body of this celebrated loyalist. Two years after the date of his last battle, the British abandoned a hopeless task and left the country, taking with them twelve thousand loyalists, who set led anew in the Provinces of Nova Scotia and New Brunswick, under the folds of the flag they loved.

KNICKERBOCKER.

France.

DEBATE ON THE CONSTITUTIONAL BILLS.

Paris, January 21.—In the Assembly to day the debate on the Constitutional Bills was opened. M. De Vontavor's bill was first taken up. It confirms President MacMahon's powers, establishes Ministerial responsibility, creates a second Chamber, invests the President with power to dissolve the Assembly, and provides that on the lapse of the Presidential power a Congress of two Chambers shall decide upon the future government of France.

The members of the Left objected to the exclusion of Republican principles from the measure when the Republic was the existing form of government.

M. De LaTour, Legitimist, opposed all constitutional bills. He attacked the Republic and Empire, and urged the restoration of a monarchy, and declared his party would vote in favor of granting Marshal MacMahon only the means necessary to preserve order. He attempted to read the letter of Prince Bismarck, published during the Arnim trial, in which the Prince stated that a monarchy would strengthen public credit and enable France to form alliances.

This created great excitement in the Chamber, the reading was interrupted, and the speaker's voice drowned by shouts from all parties, and the sitting closed without a vote.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday the 23rd inst.

- Bishop's Mills, Ont.—Capt. Wm. Bennett, to [July 1873, \$200
- London, Ont.—Lt. Col. J. B. Taylor, to Jan. '76. 4.00
- Maj. Wm. Dempster, to Jan. '76. 4.00
- Halfax, N.S.—Lt. Wm. Imbuh, to Jan. 1870. 2.00
- St. John, N.B.—Lt. Col. C. R. Ray, to Jan. '76. 4.00
- St. Stephen, N.B.—Lt. T. C. Stevenson, do 4.00

CORRESPONDENCE.

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

To the Editor of the VOLUNTEER REVIEW.

Montreal, P.Q., 23rd Jan., 1875.

DEAR SIR,—You will confer a great favor on many of your subscribers who have served in her H.M. Regular Army by occasionally inserting in your valuable and widely circulated paper the stations of the "British Army."

It is true such information is furnished by the Army List, but except in Montreal and Toronto it is difficult to obtain one, and then, even, it must be ordered direct from England. It is pleasant now and then to ascertain where the old corps (in which perhaps a man may have spent the best of his life) is quartered, and should you kindly take this little matter into consideration, it will, I assure you, be gratefully acknowledged. Yours, dear Sir, very respectfully.

AN OLD N.C. OFFICER.

We shall endeavour to comply with the above request.—ED. VOL. REV.

(FROM OUR OWN CORRESPONDENT)

Montreal, 23rd Jan., 1875.

A Board of Survey on Military stores assembled lately on St. Helen's Is and. President—Lieut. Col. Fletcher, C.M.G., D.A.G., 5th M. D. Members—Lieut. Col. Harwood D. A.G., 6th M. D. and Lieut. Colonel Strange, R. Artillery, &c., &c. After a very minute inspection the stores were found to be in a highly satisfactory state of preservation, and arranged with military order and precision; much credit is due to Captain Pope, late H. M. Royal Artillery and Store keeper at this station, whose energy and activity in all matters appertaining to the appointment he holds, unquestionably shows him to be "the right man in the right place." The M. G. Artillery, the 6th Batt'n or Hochelagas, and the Victoria Rifles, have recommenced their weekly drill, the latter under the superintendance of Captain Atkinson G. F. R. brigade and formerly of H. M. 60th Rifles. The N. C. Officers of the 6th Battalion have lately organized a N. C. officers' mess, Reading room, &c., &c., on the same plan as that of the P. W. Rifles which has proved so perfect a success since its establishment. I should here mention that the reading room of the latter corps, is open at all times to the Volunteers of the force in general, a great boon to very many who are thus enabled to avail themselves of the perusal of the English Newspapers, Military journals, and other items of interest to a military man, through this courteous proceeding of the corps in question. Speculations are just now rife amongst our Volunteer Community whether or not the ex-Lieut. Colonel of the Prince of Wales Rifles, Ber-

nard Devlin, Esq., now that he is an M. P., will obtain the payment so long withheld from the Montreal force for their services when called out for two whole days at the elections in this city some years ago; the amount claimed is merely about \$600.00 (six hundred dollars), and the Corporation for reasons best known to themselves have, it is considered, very unjustly repudiated the claim. Should the gallant Colonel succeed in inducing the Government to settle this vexed question of long standing, the same will be appreciated as a kind office on behalf of the Volunteers, who are ever ready to turn out when called on and should receive any pay they may be entitled to for so doing.

There is still a talk of making up the Cavalry force here to a squadron; Montreal has only one troop, whilst Quebec, Toronto, London and Kingston have a couple of troops each. In a large city like Montreal one full squadron of Cavalry would surely not be out of place and a good turn out of this necessary arm of the service could then always be depended on. It is hoped that this augmentation may eventually be granted and Montreal placed on a par with her sister cities, as far at least as Volunteer Cavalry are concerned. No chance of the fine old drill shed being repaired and again given to our Volunteers, who have now to drill wherever they can obtain a room for the purpose. X.

SPANISH AFFAIRS.—A telegram from Madrid, January 17th, says: King Alfonso will assume command of the army of the North. He will probably be accompanied to headquarters by Jovellar, Minister of War. Strenuous efforts are to be made for the relief of Paupeluna. A movement of troops with this object has already commenced. The King has signed decrees relative to the salaries of the clergy, and declared that while giving support and respect to the Catholic clergy, he desires to firmly maintain religious liberty as it exists in most civilized countries. The subvention to the clergy has been raised from 3,500,000 to 4,100,000 piestars. The merchants of Madrid have presented a magnificent crown to the King.

COST OF DAMS BREAKING.—The New York Commercial says that two millions of dollars were lost in Massachusetts last year by the breaking of reservoirs and dams, many lives were sacrificed, and large industries seriously embarrassed. Yet all this warning proved of no avail. The Reservoir Commission in that State report that twenty seven unsafe dams and reservoirs exist there at this hour. It is somewhat curious that they do not suggest any punishment for this criminal negligence. The owners of these works should be indicted for their hideous methods of trifling with human life. When an accident has happened, and some hundreds of lives are sacrificed, it will be too late to make punishment available for any active good. It behooves every community, whose homes are at the mercy of a sudden burst of water, to act promptly for its own protection. Otherwise its folly may cost it dearly.

## AT THE BRIDAL.

BY MRS. HARRIET PRISCOTT STOFFORD.

Wild stood the doors, that morning,  
Of the sombre and ancient church,  
And gayly the yellow sunshine  
Streamed in on its seldom search—  
Streamed over the rustling satins,  
Over Jeweland waxing plums,  
Over smiling and confident gallants,  
Over women all beauty and bloom,  
And I paused to look at the parson  
In the midst of the shimmer and stir,  
And to hear the priest murmur: Forsaking  
All others, cleave only to her.

Fair twinkled the taper-set altar,  
And sweet blew the organ's breath,  
While the lover bent and repeated:  
"To love and to cherish till death."  
The light from the great rose-window  
Came splendidly sifting down;  
On her face there fell a glory,  
An lover her hair a crown,  
And I knew by the awful passion  
With which he stood white and wan  
That he cast his heart before her  
For her feet to tread upon.

But the bride was softly smiling,  
Lovesome and bright and fair—  
He was but the ring on her finger,  
He was but the rose in her hair!

And I would there had been a glamour  
Over my eyes, and a blur,  
At that eager vow of forsaking  
Others, and cleaving to her:  
For out of the pillar's shadow  
I saw beside me start  
A wild-eyed girl, with her baby  
Clasped over her bleeding heart,  
And down from the porch she lay—  
The wreck of a rupture unhealed—  
With only the river before her,  
With only the river for rest!

—Harper's Magazine.

## Aggressive Torpedoes.

It appears from the particulars published in the Journal, November 28, regarding the Whitehead Torpedo, that its constructor has recently modified his system in order to attain a very high rate of speed—the only possible expedient by which the disadvantage of not possessing any directing power, can be, to some extent, met. Obviously the deviation from the intended course resulting from currents and other disturbing causes, after pushing out the torpedo, will be diminished in the inverse ratio of the speed of the submerged body. And, of course, the chance to strike an antagonist in motion, will be greater in proportion to the increased speed of the torpedo. But, unfortunately, great speed cannot be produced without resorting to such a form that the efficiency of the weapon will be seriously impaired, if not destroyed. Bearing in mind that the power necessary for propulsion increases as the cube of the velocity, we need not be surprised to find that the length of the improved "fish" torpedo has been augmented to 19 feet, while the diameter has been reduced to fifteen inches. Nothing short of such disproportion of length and diameter, admits of lines sufficiently sharp to enable a submerged body to be propelled at the extraordinary rate of speed which, agreeable to the reports of our officers on the Austrian coast, has recently been attained by the Whitehead torpedo. Nor could such speed be produced, notwithstanding the sharp lines employed and the consequent sacrifice of necessary capacity, unless the submerged body were charged with compressed air of a tension which experienced engineers regard as dangerous. Recent accidents in Europe prove that an expansive force of one thousand pounds to the square inch, now employed by Whitehead, is not safe even for experimental purposes. But let us assume that workmanship and materials have arrived at such a state of perfection that we may safely handle the "fish" whose skin, agreeable to reports

forwarded to the Bureau of Ordnance, is only one eighth of an inch thick, and whose interior is charged with air exerting a pressure of 1,000 pounds to the square inch. The important question then presents itself; will the new instrument prove sufficiently destructive to sink a modern ironclad ship? The reports referred to state, that the explosive charge of the Austrian torpedo consisted of 66 pounds of gun powder placed, of course, in the forward end of the body where, owing to its pointed form, the charge will occupy a length of nearly four feet. Hence, as the force of explosive substances contained in elongated vessels, acts at right angles to the longest axis, it will be evident that the force of the long, taper, conical charge of the improved Whitehead torpedo—supposing that it strikes fair—will be exerted in lines nearly parallel to the skin of the vessel struck. Apart from this grave circumstance, the fact should be considered that, the charge is of conical form and that therefore the distance of the centre of gravity of one-half of its mass is situated only one sixth of its length from the base. Consequently, at the moment of ignition, fully one half of the explosive energy will be wasted by expansion into the empty body of the torpedo, while the other half, acting at right angles to the axis of the torpedo, will as before stated exert its force in lines nearly parallel to the ship's side and thus become partially harmless. Again, the portion of the charge near the apex of the cone though in contact with the body struck, is too small in volume to exert destructive force.

The foregoing considerations point to the fact that the expedient of making aggressive torpedoes long, slender and pointed, in order to attain high speed in spite of the limited amount of motive energy which can be stored within their contracted bodies, is incompatible with destructive efficiency. No system which does not admit of carrying a very heavy explosive charge of such a form that the centre of gravity of the same is nearly equidistant from its outer limits, will prove adequate to destroy ironclads constructed on the admirable cellular plan of the *Inflexible*. Unless, therefore, some new motive agent can be procured many times more powerful for the space it occupies, than atmospheric air compressed, the tubular cable system must be resorted to, since that enables us to propel a body of sufficient magnitude. Nor should the all important fact be lost sight of that the tubular cable system enables us to control and direct the course of the torpedo. Regarding the proper form and size of the vessel which contains the explosive charge, we need hardly observe that hitherto that subject has received too little attention.

The reader will find in the illustration which we give above, prepared from a drawing which Captain Ericsson has furnished to enable us to discuss the question of form and magnitude of charge, without entering into an elaborate disquisition. The section of the ship represented which the aggressive torpedo is supposed to strike, will readily be recognized as that of the British ironclad *Decastation*. Fig. 1 shows the top view of a torpedo carrying a charge of 400 lbs. of nitro glycerine. Fig. 2 shows the top view of another torpedo of nearly similar form carrying a charge of 1,000 pounds of the same explosive substance as the former. The slight difference in size of the two torpedoes will probably surprise those who do not reflect on the fact that, while areas are as the square of the lineal dimensions the contents is as their cube. Having in for-

mer issues of the Journal minutely described the Ericsson torpedo, we need only remind the reader that the rudder is placed under the bow of the submerged body, and that the horizontal ruddiers, or fins, for regulating the submersion, are placed one on each side, nearly amidships. The propellers, tubular cable, and wire-mast with the colored ball at the top, for indicating the position of the torpedo, require no further description. The blunt form of the bow will, no doubt, be objected to by Naval architects on account of the attendant increased resistance. In answer to this objection it suffices to state, that the unlimited amount of motive energy supplied through the tubular cable renders the resistance of the torpedo of no account. Referring to fig. 2, it will be found on applying the scale, that the centre of gravity of a charge of 1,000 pounds is situated less than twenty inches from the skin of the iron-clad ship. Experts are aware that the explosion of such an enormous charge, in actual contact, especially as the mean distance of its mass is only twenty inches from the point struck, possesses adequate force to destroy ironclad ships of any form whatever. It is hardly necessary to observe that the cellular system will be of no avail if the force of the explosion be sufficient to break the ship partially in two. Possibly the constructor of the *Inflexible* prepared to show that a charge of 1,000 pounds of nitro glycerine is not sufficient to produce such an effect. If so, he will do well to consider that the tubular cable system admits of doubling or quadrupling the stated charge.—*Army and Navy Journal*, Dec. 26.

## Army Ordnance Department.

REPORT OF THE CHIEF OF ORDNANCE.

ORDNANCE OFFICE,  
WAR DEPARTMENT,  
December 14, 1874.

To the Honorable the Secretary of War:

Sir: I have the honor to submit, for the action of the Secretary of War, the following:

I In my annual report submitted in October last, I expressed the belief that, prior to the meeting of Congress, much valuable information would be obtained from experiments with certain experimental guns, then nearly ready for trial, as would enable this bureau to report understandingly on "that most important subject, the "Armament of our Fortifications." Although the information is not as complete as was expected, sufficient has been done and reported, upon which to base the following recommendations:

There are at present in our forts the following heavy guns:

321 15-inch Rodman guns, smooth bore,  
1,294 10-inch Rodman guns, smooth bore.  
90 8-inch Parrott rifles.  
40 10-inch Parrott rifles.

These Parrott rifles, even if reliable when using the heavy battering charges required in modern warfare—of which doubts are entertained—are so few in number as to constitute but an unimportant item among the 4,181 guns required for our forts, when ready for their armament.

Rifle guns ranging from 8-inch to 12-inch in calibre, with power sufficient to penetrate at considerable distances the armor of iron clad vessels, must be provided. The heaviest rifles are the guns of the present, as they will be of the future, and while smooth

bore may for some time to come play a secondary part for want of a more powerful weapon, they must inevitably yield to the rifle in every important juncture, as the old smooth bore musket has given place to the breech loading rifle in the hands of the soldier. While thus expressing the conviction that the days of smooth bore ordnance are passing away, I desire to call attention to the fact, that the first grand stride towards the introduction of great guns in any service was made in this country by the late General Rodman, of the Ordnance Department; whose reputation as an ordnance officer is world wide, and that the 15-inch gun he first made in 1861 was the most powerful weapon then known, soon to be surpassed by his 20 inch smooth bore made in 1864, weighing 116,000 pounds, and throwing a shot weighing 1,050 pounds. The introduction of ironclads in modern warfare calls, however, for the penetrating power of heavy rifles, and the smashing and racking effect of a 15-inch smooth bore must yield to the working energy of a 12-inch rifle that will pierce the thickest iron armor at long distances.

How best and most economically to provide for this great want, has exercised the brain and skill of the most distinguished officers in every country, and caused the expenditure of millions of money. There is little doubt that steel is the best material for guns, but the product is by far too costly to be considered now, and besides would have to be procured abroad. Wrought iron guns lined with steel, as adopted by England, have not given that satisfaction that would justify an expenditure of several millions of money in plant for their manufacture. In this country, the success of the Ordnance Department in improving the quality of our cast iron for cannon has been marked and satisfactory, and we may I claim, with good reason, to the best cast iron guns in the world. They require, however, to be strengthened when subjected to the enormous strains which as rifles they are to withstand; and the success abroad of lining cast iron with wrought iron or steel has suggested an easy and economical mode of converting our cheap cast iron smooth bores into powerful and efficient rifles. Our trial thus far with a 10 inch Rodman gun lined with wrought iron, and converted into an 8-inch rifle, gives promise of success; and another lined with steel now nearly ready for firing may probably give equal, if not better results. This 8 inch rifle has already been fired 325 rounds,\* with battering charges of 35 pounds of powder and 180 pound shot, giving an average velocity of about 1,425 feet, and a working energy of nearly 5,000,000 foot-pounds; capable of penetrating seven (7) inches of iron armor at distances from 500 to 1,000 yards. This success enables us at comparatively small cost to utilize the 1,291 10 in. smooth bore guns, which as smooth bores are utterly useless against iron clads, by converting them into 8 inch rifles capable of penetrating seven inches of iron armor.

The value and interest of this proposed conversion is all the greater from the fact the casemate of our forts, designed many years since, are too contracted to accommodate a gun of much larger size than the 10-inch Rodman; and this very gun intended for that special purpose can thus be strengthened and increased in power, to meet the greater demands that modern improvements in naval attack and defence make upon it.

\* Up to date, 19th, this gun has been fired 448 rounds.

In again urging upon Congress the absolute necessity for some action that will enable us to place our forts in fighting condition by providing their armament; I will be excused for stating an undeniable fact, which appears to be entirely ignored, that a fort is worse than useless without guns to arm it—indeed that it is not a fort at all without its armament—more like a body without a soul; and that other fact, which also seems to be lost sight of, that cannon cannot be purchased ready made in market, but have to be manufactured specially, and must be provided in time of peace. It is certainly the part of wisdom to be prepared for future wars, that occur in the life of every nation, but should our appeals be constantly disregarded and the next war find the country unprepared, and our seacoast defenceless and at the mercy of an enterprising enemy, the responsibility for all subsequent disasters cannot rest on the Ordnance Department of the Army, nor the Secretary of War, nor the Executive.

I have, therefore, the honor to recommend that an appropriation of two hundred and fifty thousand (\$250,000) dollars be made by Congress for converting smooth bore guns into rifles by lining with wrought iron or steel.

The above sum will enable us to convert at least 140 guns.

2. In 1873 Congress appropriated \$270,000 "for experiments and tests of heavy rifled ordnance." The guns "designated by a Board of Officers appointed by the Secretary of War," under the provisions of the act, have been in preparation under the supervision of their respective inventors, and the whole number will probably be ready for trial in the early spring. The necessity and convenience of having a proving and experimental ground in near proximity to the city of New York, has forced the Department, with your approval, to establish a temporary one on the Government reservation at Sandy Hook, New York harbor.

Even in the trial of the 8 inch rifle, referred to above, this Department has been hindered by the want of funds, and these important experiments, that will eventually lead to a determination of the question so vital to the national defence, have had to be conducted under great embarrassments, and with the rudest appliances and conveniences.

It is expected that by the opening of spring, eight guns, varying in calibre from 8 inch to 12 inch, and in weight from 16,000 to 85,000 pounds, will be ready for firing. The firing of a 12 inch rifle is a very expensive business; each round fired costing about one hundred (\$100) dollars. As the gun may stand 500 rounds its trial will cost fifty thousand (50,000) dollars, and only in a less degree will the expense be in the trial of guns of smaller calibre.

Funds necessary for this purpose should be appropriated; and added to this, a sum sufficient to provide all the carriages, depressing and others, butts and platforms, and all appliances, conveniences, and labor required for the prosecution of such exact and important work.

I know of no military or naval power that has not provided an experimental and proving ground with every facility for conducting trials upon a grand scale; and there is no way of avoiding considerable expenditure, while seeking and obtaining necessary data from which to draw conclusions, that will lead to such large expenditures in the future in arming our fortifications.

I have, therefore, the honor to recommend that an appropriation of two hundred and fifty thousand (\$250,000) dollars

be made for proving ground and experiments and tests of heavy ordnance.

Very respectfully, etc.,  
S. V. BERRY, Brigadier General.  
Chief of Ordnance.

December 21, 1874.

The gun up to this date has been fired 513 times, 500 of which with battering charges. After the most careful examination and measurements, no damage to the rifling or enlargement of the bore can be detected, and the gun apparently is in perfect order—serviceable in every respect.

### The Oberon Experiments.

(From the London Army and Navy Gazette.)

The failure of a sixth attack upon the *Oberon* target ship by the torpedo committee, with the heaviest mine which they possess at the distance of only fifty two feet diagonally, points to the conclusion that nothing but "hugging contact" will prove effectual in torpedo warfare. When we say failure, we use the word of course, in a qualified sense, as, undoubtedly, a very considerable effect was actually produced by the explosion of the 500 lb. charge of gun cotton upon the fittings and other articles on board the target vessel. But a result adequate to the expectations of the committee, and to the anticipations of interest lookers on in the Army and Navy, would have been nothing less than the crushing in of the two skins of the *Oberon*, so as to create an aperture sufficient to sink it in a few minutes. Such an event was indeed, confidently expected; and there were good grounds for this confidence, as not many months ago experiments were made by the Admiralty torpedo committee at Portsmouth with a target representing the bottom of the *Devastation*, which were eminently successful in their results. A 100-lb. charge of compressed gun cotton, exploded in water at a distance of some 15 or 20 feet from the target, which was strongly secured with stays and backing, blew a hole through the plates 5 feet square. But the sum total of the effects produced during the series of experimental trials at present in course of development at Stokes Bay, so far as regards the bottom of the vessel, has been nothing more than the compression of a few plates to the extent of an inch or so. We must, however, admit, as was suggested some weeks ago in our columns, that a vastly different condition might obtain if a huge and ponderous mass such as that of the *Devastation* and possessing a great corresponding power of inertia, were presented to the blow of a 500 lb. torpedo. During each of the recent experiments the *Oberon* was lifted bodily up and dropped again. This could not occur with an iron clad vessel, as if once thus lifted, she would probably be swamped in her descent. But we may certainly assume that she would not rise to the blow, having far too much inertia; hence the effect would be felt like that of a battering ram. We understand, moreover, that the committee are not in any degree discouraged by their ill success. We published some time ago a report to the effect that several huge floating mines, to contain each 1,000 lbs. gun cotton, were in course of construction. Two of these have now been received at Portsmouth, and so soon as the size of the "primers" and other details have been decided on, trials will be made as to their effectiveness at Stokes Bay. It is rumored also that the committee are adopting means to develop more fully the power of detonation in the 500 lb. charge.

ges of compressed gun-cotton. Hitherto the "mines" or "cases" have been to sely filled with circular discs three inches in diameter and two inches high. Under these circumstances, a quantity of interstices exist, which tend most materially to weaken the force of detonation, such force being transmitted amongst wet discs of gun-cotton only when the discs are actually in contact. Now, however, it is proposed to construct solid slabs or masses of compressed gun-cotton, of such a shape as to correspond with one another, and to fill without a single interstice the wrought-iron case comprising the torpedo. Should the present approved pattern of stationary torpedo case not be found suitable for the proposed shape of gun-cotton slab, steps will be taken so to modify their contour as to adapt it to the circumstances required. Unquestionably this will increase most materially the shattering effect of the detonation of gun-cotton within torpedoes; it remains to be seen whether the explosive effect will be better transmitted through the surrounding medium of water. But, granting that much may be done by an effective stationary torpedo against a heavy iron clad owing to its tremendous inertia, we still adhere to our original opinion, that with the ordinary class of vessels, "hugging contact" is indispensable in order to produce a really destructive blow. To obtain this end, therefore, it will be necessary to employ a Whitehead's "fish," a Harvey "sea torpedo," or some other active explofer. We may, however, expect that a great deal of light will be thrown upon this question by the result of the trials about to be instituted with the last named weapons against the port-side of the *Oberon*. The fears that we expressed in regard to the security of contiguous charges of gun-cotton, when placed at a distance asunder of only 100 feet, were not verified in the recent experiments. On that occasion, three minor charges, one containing 50 lbs. of dynamite in boxes, were buoyed round the principal mine at distances from it and each other of 100 feet. They were not affected by the explosion. Such experiments would, however, seem almost superfluous when we consider that the distance between the torpedo and target vessel has now been reduced to fifty two feet.

### Encounter With a Shark.

Fatal as is the white shark to the unarmed those who carry weapons of defence very frequently cope with and master him; even women, undaunted by their teeth, have been known to stab and destroy them in their bath. One day, a little boy about eight years old, happened to be washed from a catamaran which was managed by his father, who was thus initiating him into the hardships of life which he intended him to pursue, and before he could be rescued from the turbulent waters a shark drew him under, and he was seen no more. The father lost not a moment, but calmly rose, and placing a knife between his teeth, which he carried sheathed in his summer band, plunged beneath the dashing waves. He disappeared for some time, but after a time was occasionally seen to rise, and dive under the billows, as if actually engaged with his formidable foe. After a while the white foam was visibly tinged with blood, which was viewed with a sensation of horror by those who could only surmise what was going on under the water. The man was again seen to rise and disappear, so that the work of death was evidently not complete. After some further time had elapsed, to the

astonishment of all who had assembled on the beach—for a considerable crowd had now collected—the body of a huge shark was seen for a few moments above the white spray, which is completely crimsoned, and then disappeared. An instant later the man rose above the surf and made for the shore. He seemed nearly exhausted, but had not a single mark on his body, which bore no evidence whatever of the perilous conflict in which he had been so recently engaged. He had scarcely landed when an immense shark, was cast upon the beach by the billows. It was quite dead, and was immediately dragged by the natives beyond the reach of the surf. As soon as the shark was drawn to a place of security it was opened, when the head and limbs of the boy was taken from his stomach. The body was completely dismembered, and the head severed from it, but none of the parts were mutilated.

### The Darien Expedition.

Preparations for the new Darien Expedition are being rapidly forwarded. Lieutenant Frederick Collins, U. S. Navy, who has been selected to conduct the explorations and surveys, has been in Washington attending to the final details. With him will be associated Lieutenant J. G. Eaton, J. T. Sullivan, E. W. V. ry, and S. C. Paine, as assistants, and Dr. J. P. Bradford, now of the *Brooklyn*, as medical officer. The party will proceed to Aspinwall, and there be met by the *Canandaigua*, or other suitable vessel, which will convey them to the mouth of the Atrato river, and then transportation by steam launch and cutters up the stream to one of its branches, the Napipi, where the work will begin. The ship will then leave them, and return about the middle of April to bring them back. The object of the expedition is to make a more complete survey of the Napipi canal route than the limited time already spent on it has rendered possible. A careful line of levels will be run from the Atrato to the Pacific, and the country be elaborately reconnoitered to secure the most favorable profile. It is proposed to cross the Napipi by a dam, and the location of that and the extent of the basin it will cause to be overflowed, will be carefully investigated. Borings will be frequently made to the depth of the required excavation, to ascertain the character of the sub soil and underlying strata. The streams relied upon to feed the canal will be carefully gaged, and observations made to determine the daily rainfall and other meteorological incidents. The party will go well supplied with "Darien ration," and all the instruments necessary for the accomplishment of their work scientifically. They will take but few men from the *Canandaigua*, and rely mainly upon the natives of the Atrato valley for laborers, thus reducing their demands for commissary stores and field equipment, and consequent transportation as the true Isthmian is not proud, and "needs but little here below." Lieutenant Collins has been a member of all the Darien Expeditions occurring within the last six years, and is eminently qualified for the important duty which has been confided to him, and hardly less so to the younger element of the Navy, which he represents. Good wishes will accompany the young explorers, and many hopes for a safe and speedy return.—*U. S. Army and Navy Journal*.



GOVERNMENT HOUSE, OTTAWA.

Friday, 15th day of January, 1875:

PRESENT:

HIS EXCELLENCY THE GOVERNOR  
GENERAL IN COUNCIL.

WHEREAS it has been represented that large importations of Coal Oils are continually taking place at various ports in the Dominion, samples of many of which will not stand the fire test required by the Inland Revenue Act, 1833, and amendments thereto; also that large importations of certain products of Petroleum, such as Gasoline, Benzine and Benzole are being made, such articles being very explosive and dangerous at a very low temperature.

His Excellency, on the recommendation of the Honorable the Minister of Customs, and under the provisions of the 17th section of the Act passed in the session of the Parliament of Canada, held in the 31st year of Her Majesty's reign, chapter 59 and intitled: "An Act to increase the Excise duty on spirits, to impose an excise duty on refined Petroleum, and to provide for the inspection thereof," has been pleased to order, and it is hereby ordered, that with a view to the better regulation of the foreign Petroleum trade, and the security of the lives and property of Her Majesty's subjects, the following regulations be and they are hereby adopted and established, that is to say:—

1. From and after the date hereof, the officers appointed to gauge and test spirituous liquors, wines, &c., at the respective ports of Toronto and Hamilton in Ontario; the Port of Quebec, in Quebec; the Port of St. John, in New Brunswick; and the Port of Halifax, in Nova Scotia, shall be and they are hereby appointed Inspectors of Imported Refined Petroleum at those Ports respectively; and that the respective Collectors of Customs and Sub-collectors of Customs at all other ports and out-ports in Canada, shall be and they are hereby appointed Inspectors of Imported Refined Petroleum at their respective ports and out-ports, with power to employ in the actual process of testing such oils any officer or officers under their respective surveys whom they shall consider competent for that purpose.

2. That the instrument to be used for testing all imported refined petroleum shall be the "Coal Oil Pyrometer," made by Charles Potter, Toronto, Ontario, and all such petroleum as will not stand the fire test of 105 degrees, as required by said Pyrometer, as required by section 2 of chapter 15 of 21 Victoria, when used according to the instructions accompanying the same, shall be dealt with as may be ordered by the Minister of Customs in each case.

3. That every package of imported Refined Petroleum, inspected as before provided, shall be legibly marked or stamped in such manner as the Minister of Customs may direct.

4. That no imported refined Petroleum, which will not stand the said Test, whether designated as "Coal Oil," "Naphtha," "Benzine," "Benzole," "Paraffine" or other oil or field, distilled, manufactured or produced by any process or treatment whatever, shall be admitted to entry for consumption or Warehouse in Canada, unless the Importer shall have produced a license from a Collector or other proper Officer of Inland Revenue, authorizing him to import and keep the same on hand.

W. A. HINWORTH,  
Clerk, Privy Council.

---\$20---  
WILL BUY A  
**FIRST MORTGAGE PREMIUM BOND**  
OF THE  
**N. Y. Industrial Exhibition Co.**

These Bonds are issued for the purpose of raising funds for the erection of a building in the City of New York, to be used for a

Perpetual World's Fair,  
A permanent home, where every manufacturer can exhibit and sell his goods, and every patron can show his invention; a centre of industry which will prove a vast benefit to the whole country.

For this purpose the Legislature of the State of New York has granted a charter to a number of our most wealthy and respectable merchants, and these gentlemen have purchased no less than eight blocks of the most valuable land in the City of New York. The building to be erected will be seven stories high (151 feet in height) surmounted by a magnificent dome, and will cover a space of 23 acres. It will be constructed of Iron, Brick and Glass, and made fire-proof. The bonds which are all for \$20 each, are secured by a first mortgage on the land and building, and for the purpose of making them popular, the directors have decided to have quarterly drawings of \$100,000 each; this money being the interest on the amount of the whole loan.

Every bondholder must receive at least \$21.60, but he may receive

**\$100,000:**

Or \$31,000, or \$10,000, or \$5,000, &c., &c.

"3d Premium Drawing, March 1st, 1875."

"4th Series Drawing, April 5, 1875."

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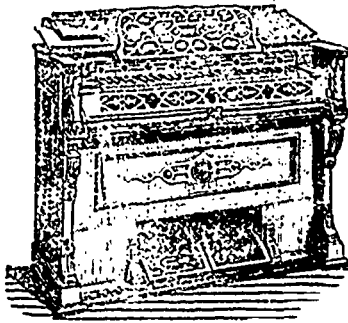
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