

torpedo boat, but have been met by the officials with a polite refusal.

From the opinions of persons eminently fitted to judge, it would seem that, should the new boat prove equal to the work expected of her, Admiral Porter will have given to the American Navy the most formidable and destructive engine of war ever constructed in any part of the world.

A large force of men are now employed on the work, and the utmost expedition is being used in order to get the boat launched, if possible, by the middle of July.

We have to acknowledge the receipt from the Secretary Capt. B. Burgess, of the *Journal of the Royal United Service Institution*, No. LXX, of Vol. XVII which contains the following interesting articles:

Powder pressures in the first 35 ton gun.

Marches.

Suggestions for a shelter tent.

Improved instruments for military sketching.

Biemner's steam steering screw.

The paper on *Marches* appears in this week's issue of the Vol. Rev.

We are indebted to the energetic, patriotic, and large-hearted honorary secretary of the "Royal Colonial Institute" C. W. Eddy, Esq. for a copy of a paper read before the Institution by Mr. W. WALKER, on "The social and economic position and prospects of the British West India possessions," which supercedes in interest anything we have ever seen on the same subject. Looking to the future political destinies of this group of Islands, the question naturally arises as to what power they will be most likely to fall in to and we are inclined to think that the tendency will be to seek a connection with the Dominion of Canada. We are the more inclined to believe this theory correct from the fact that within a very short period the transportation of the whole grain trade of the Western and North Western States will be in the hands of the Canadian shippers, must pass through Canadian territory, and must of necessity be shipped in Canadian vessels. Therefore, it follows, that our trade with those Islands in breadstuffs and other products of our soil, will create an identity of interest, which all the efforts of the United States have failed to develop.

The efforts to obtain a footing in San Domingo, which Mr. Walker notices has not advanced the interest of the Republic in the West Indies although it may be used as a stepping stone to acquire Cuba, and probably for ulterior purposes; but if even any attempt is made to coax or bully Great Britain out of her possessions in that quarter, the Canadian people will be prepared to take a hand in the game, with as good a prospect as the Yankees can possibly handle.

We are further indebted to the honorary secretary for a copy of the *List of the Fellows of the Royal Colonial Institution*, and we learn that our distinguished countryman

Lieut. Colonel G. T. Denison, will read a paper early in June, before the Institute, subject being the "Defence of Canada."

The theory of the *Woolwich System* of rifling and its practical application receives due attention in scientific journals in Great Britain.

It is a question deserving due attention as to the reasons why such a very absurd system is persisted in after all its miserable and astounding failures; or have the Whig Radicals imported into the public service the trade rascalities of Manchester and Birmingham. As it is very evident some peculiar interest must be served to bolster up for such a length of time such notorious failures as have been produced by the *Woolwich system* of rifling.

The following extract shows this pretty clearly.

*Fraser's Magazine* states that the artillery duel off Portland on the 5th of July last, resulting, as it did, in the signal defeat of the gun by the armor, has revived the general interest in the question, guns v. arms. However, the encounter between the 25-ton gun of the *Hotspur*, and the 14 in. plate protecting front of the *Glatton's* turret does not dishearten artillerymen. True, neither the 25-ton nor the 35-ton can at present employ all the powder they could usefully burn. True, they have "decidedly the lowest velocities," and consequently, hit weak blows. True, they have very small endurance and cannot be fired continuously, or with high elevations, or with long projectiles, last their end should be still more untimely. But the cause is evident and removable. The able principal of the School of Naval Architecture told the British Association that "the consent of all mechanicians and engineers with whom he had ever conversed was absolutely unanimous in the condemnation of the 'Woolwich' system of rifling, and that he had never heard any serious defence of it." Nobody has aught but praise for British-built ordnance. Nobody has aught but blame for the misapplication of power within them. Hardly a simple quarterly training practice takes place in the British fleet without one or more of the heavier guns being disabled, whilst discharging eight projectiles each at canvas targets. Yet the guns are strong enough, and no additional weight of metal would prevent these mishaps. The length of rifle-bearing in each groove is the same viz. 1 in., whether the shot is to be rotated 115 lbs. in weight or 700 lbs. Hence, the larger the gun and its projectile, the more suicidal the mechanical action of the projectile. Thus a 6½ ton gun may discharge its 115 lb. projectile a thousand times without much injury; but when a 25 ton gun does so 200 times, spread over several months at low elevations, and with reduced charges of mild-burning powder, the official *Manual of Naval Gunnery* records the fact as "proving that their powers of endurance are most satisfactory!" and when a 12 in 35-ton gun is found to have four cracks and four fissures in the grooved part of the bore, necessitating its being rebuilt, after only 38 slow discharges with low elevations and short projectiles, a dozen more of the same kind are ordered for the British navy to fight with. The only grave objection to this re-arming of the British fleet is stated by *Fraser* to be the great loss of endurance

which the present rifle system gives rise to in the heavier guns. Naval men are alarmed at the idea of resting the safety of the fleet and the security of the country solely upon an armament of 35 ton guns. They observe that the only gun of that nature tested so far, gave way after 38 horizontal discharges with mild pebble powder, spread over three end a half months; and that those furnished to the navy have only been proved by firing, at long intervals, three reduced charges horizontally.

With such a record it is little matter for surprise that naval officers denounce the monster artillery in unmeasured language, and it has always been our opinion that the British fleet is far more inefficient in all the glory of its iron clads, rams, monitors, turret ships, and *torpedoes* than when it was solely built of wood. We have no faith at all in *floating gun carriages* either as manageable or effective fighting machines, they have never been proved and their record in practice where all the conditions were favourable has been such as to destroy the faith of any practical seaman in their adaptability for efficient service in naval warfare—so much for the machines. The guns have been reckoned up as Inspector BUCKNELL would say, and found to be all but useless. As ships and armament the British fleet, as at present organised, has entirely too many *ifs* about it to be valuable.

The armament fails even under the mathematical test, as the following extract will show.

"The *Philosophical Magazine* has an elaborate mathematical paper investigating the advantages arising from the employment in heavy ordnance of ever changing angles of grooves to receive a fixed angle of rifling in the shot. By this device, called an increasing spiral, a reduction of powder pressure in the chamber is shown to be effected to the extent of a one hundred and sixty fourth part of the bursting force, as compared with the gun in which the angles of twist of the shot and bore coincide. It is also demonstrated that the mechanical force required to rotate the shot is a "small fraction" of that employed to drive it out of the gun. This "small fraction" is stated to be 2½ per cent. of the explosive force when the shot and bore correspond; while about one half of this "small fraction" is required when their angles of rifling differ. In the majority of British rifled guns, and in all foreign ordnance, the angles of rifling in the shot and bore coincide throughout the whole length of the gun, to the loss of the above remarkable philosophical advantage. *Broad Arrow* points out against this mathematical decrement of half a ton powder pressure an increment of nearly 40 tons per square inch, due exclusively to the oscillations of the shot around the axis."

It is evident that even Bishop Compton would fail in extracting a shadow of hope for the system out of this exhibit.

The *political economist* is one of the curses of modern civilization, and more especially of representative government; brought up in some country store where he has spent the best part of his life in haggling with stray purchasers, our *barbers* he buys with the