

I have not had an opportunity of seeing all these inventions nor half of them, but from a casual survey of the two or three I have seen and from a study of the description published of some others, I would strongly recommend them to the notice of the Directors of the Royal Polytechnic. Were a large tank placed in the centre hall it would form one of the principal attractions of that renowned institution, and the various torpedoes I have mentioned would be admirably suited for the amusement and instruction of country clergymen and their children in their periodical visits to town; at picnics to Richmond too, provided the conservator of the Thames did not object, they might be used to amuse the ladies of the party when the gentlemen's stock of small talk failed. I do not know that there is any other practical purpose to which they could be applied. After a careful consideration of every possible position in which a man-of-war could be placed during war time, I can imagine no possible contingency in which their services could be of any value to the vessel or her enemies. They do not profess to do anything at a greater distance than four hundred yards, and I would ask how it is possible to hoist one of these machines into the water and then direct it, all within four hundred yards of a ship's broadside."

Our contemporary, the *United States Army and Navy Journal*, is half inclined to take a serious view of the question probably because a distinguished officer, whose bravery, talent, ability, and scientific attainments no one will venture to dispute, has been and is experimenting thereon. The following extracts are from its issue of 18th July.

"A newspaper despatch says: The new torpedo boat *Intrepid*, recently launched at Boston, will make a trial trip to Key West, where experiments as to her practical workings will be made. A number of officers have already been ordered to her, most of whom have been on duty at the torpedo station at Newport. This vessel is about 450 tons burden, and was designed by Naval Constructor Hanscom, chief of the Bureau of Construction. Admiral Porter's torpedo boat building in New York is smaller than the one just launched, being of 340 tons. No name has yet been fixed upon for that vessel, but it is proposed to call her the *Alarm*. The vessels are very different in design and finish. The one now being built in New York will be brought to the Washington Navy Yard shortly after being launched to receive her outfit, as well as the Fowler wheel. The boat designed by Admiral Porter will be armed with a 11-inch gun, but that designed by Mr. Hanscom will carry no guns."

The gallant Admiral with more practical knowledge than the civilian experimenter has armed his boat with a heavy gun—which will be found far more useful than "a pole with a powder bag at its extremity." Our last extract is from the editorial columns of the same issue, and while we think the British authorities would do the *St. George* a good service by making Prince-Bismarck a present not only of Abel's invention of gun cotton, but of the whole torpedo system as well, with the hope that in the next contest he provokes for the good of the "Faderland"

one or both of us would enable him to decide it in Kilkenny cat fashion, without leaving even a little bit of tail as an evidence of the contest.

"Under the heading, 'International Courtesies,' our English contemporary *Iron*, furnishes the following information: "The results of new inventions and experience made in the application of torpedoes, have been lately exchanged between the Governments of Germany and England. The importance of Professor Abel's discovery of gun cotton applied as explosive material has induced the German Government to introduce its manufacture on the Continent. During the last month Dr. Hertz, engineer of the torpedo department of the German Imperial Navy, has been deputed by his Government to study the details of the manufacturing process on the spot. The German Government has, in exchange, communicated to that of Great Britain the secret of the Hertz torpedo, of which mention has already been made in *Iron*, and the English Admiralty intends sending an officer to be present at the torpedo manoeuvres, which will take place this summer at Kiel and Wilhelmshafen. The introduction of the Hertz torpedo will simplify in a very great measure our coast defences, as the great number of electric cables indispensable for the English torpedo, as it exists at present, will become comparatively unnecessary."

"The proposed exchange exhibits such consummate tact on the part of the German Admiralty, that we suspect Prince Bismarck has directed the negotiation. The Imperial Navy parts with the American tubular cable system for the propulsion of torpedoes, and receives in return, the English secret of manufacturing gun cotton! It will thus be seen that by an admirably equitable arrangement, the great military empire, without expending time or treasure, has not only secured the most destructive explosive, but also the necessary means of conducting it under the bottoms of the ships of its opponents."

We see our military authorities are engaged in the preparation of a far more valuable and formidable weapon as much superior in every essential respect as any one can be to another—when the utility is all one-sided. It is evident that the successful solution of the question of range would make the rocket the most formidable of weapons, and with our mechanical appliances that cannot be an impossible matter.

"A number of huge rocks of an entirely novel character, says the *Army and Navy Gazette*, are in process of manufacture at Woolwich. For a length of time it has been in contemplation to introduce into the Service a 24-pounder rocket having a "carcase" head, which should be ignited by a percussion fuze upon impact with the object aimed at. This idea has, however, been abandoned at least for the present, and, instead of a carcase rocket of this nature, a 6-inch shell rocket of immense strength having a double head fitted with gun cotton has been designed. The means for projecting this rocket will be somewhat similar to that adopted for the already existing 24-pounder, viz., a stuffing of composition which ignites rapidly, and the gas from which rushes out of three vents in the base, inducing motion in a forward direction by pressure against the air, rotation being effected at the same time by its pressure upon three curved

shields, which prolong the vent upon one side only. This composition consists of charcoal, saltpetre and sulphur. The head of the new rocket is of stout Bessemer metal, and the cylindrical conoidal portion, which is separable from the other, but attached by crews, will be filled with dry gun cotton. The entire head is fifteen inches long, and a strong diaphragm separates its base from the body of the rocket, which is of proportionate length, and to which it is attached by a flange and screws. A tapped fuze hole to receive a fuze or detonator is contrived in a recess at the apex of the head. This will, doubtless, be of a percussion character, in order to explode the head of the rocket instantaneously on impact. At the same time an ordinary short time-fuze, could, of course, be employed, which might be bored to correspond with the period of light occupied by the rocket. But the uncertain duration of rocket ranges is so well known that it is doubtful whether any attempt will be made in this direction. The weight of the new projectile may be estimated at not less than from fifty to sixty pounds."

The *Ottawa Times* of Saturday says: "Tenders will be asked for by the Government immediately for the construction of the Pembina branch of the Pacific Railway, so as to allow of work being commenced upon it next month. Surveyors will be placed upon the road at once to locate it. It may be remarked in this connection that the country where the line is to be located presents no difficulties of any kind to surmount. There are one or two small rivers to bridge, but there are no grades of any consequence. In fact the grading may be said to be of the most favorable character, very little being necessary to be done except ditching and the like. The work will be just in time to afford employment and relief in the fall months to those who have been suffering from the grasshopper plague which has devastated the North West."

In our advertising columns will be found the Prospectus of a new Canadian Monthly Magazine, entitled "*The Northman and Canadian Magazine*," to be published on or about the 5th January, 1875. There is room for a first class literary publication, in Canada, and from the well known abilities of the projector, we have no doubt it will take rank second to none of the British and Foreign Magazines which now find so ready a sale in Canada. We understand that Mr. MAXWELL has already secured the very best literary talent that the Dominion can boast of, it cannot therefore fail in meeting with a ready sale. Canada has amongst her sons some who have and are contributors to the English periodicals, and whose writings rank high in the literary world, these will be regular contributors to the new Magazine. Read the Prospectus, it speaks for itself.

A special to the *Daily News* reports that French authorities seized 32,000 cartridges on the Spanish frontier, destined for the Carlists.