

## EXPERIMENTAL TORPEDO PRACTICE.

The experimental torpedo practice at the present time being carried out at Portsmouth (says the *Times*) is very interesting, but at the same time—very properly so no doubt in the majority of instances—is looked upon as of quite a “confidential” nature. There are occasions, however, when this confidential condition may be dispensed with, and the public allowed to know something of what is going on at their cost, and one such occasion occurred about midnight on Thursday, in an attack made by torpedo boats, from Portsmouth Harbour, upon Her Majesty’s turret frigate *Monarch*, anchored at Spithead. Captain Boys, commanding the Gunnery Establishment at Portsmouth, with the officers forming the torpedo committee, now sitting at the Royal Naval College, Portsmouth, and other officers belonging to the torpedo class on board the *Vernon* under the construction of Commander Fisher, left Portsmouth dockyard, soon after one p.m., for Spithead, where after a cautious approach from the eastern entrance to the roadstead, the *Monarch* was observed lying at anchor, but evidently on the lookout for the approach of the torpedo flotilla, her own boats being lowered and manned and rowing guard round her. The four torpedo boats—steam launches painted white fitted with outriggers and dummy torpedoes, one of the latter being supposed to represent the “fish” torpedo—made a dash at the frigate through her circle of guardboats. The launch carrying the fish dummy got near enough to drop her weapon overboard within sufficiently close distance for it to do its work. Another, after having her rudder unshipped by one of the guardboats, continued her course for the frigate, and struck her with the torpedo. The other two boats appear to have failed in their attack. The principal object of the experiment may have been, as the boats were painted white and as another attack will be made upon the ship with the boats painted grey, to ascertain by observation from the *Monarch* the best colour for the disguise of a torpedo-boat in its approach by night upon a ship at anchor. We may suppose, if we like to do so, that as the dummy fish torpedo was dropped overboard within proper distance, and as the frigate was struck by the dummy of another kind of torpedo, the *Monarch* was sunk in a simple way as she lay at anchor. But, putting aside for a moment the fish-torpedo, and considering only the ordinary torpedo, which has no propelling power within itself, it will at once be seen that for torpedo boats to approach and successfully explode their mines near the water-line or under the bottom of a ship at anchor would now be a far more difficult task than some people may suppose. The *Monarch* had her rowing boats keeping guard round her, and watching for the approach of the torpedo flotilla; but had the experimental attack upon her been an episode of actual warfare, the *Monarch* would have been laying within her own nests of protecting torpedoes, laid out on her bows and quarters, while at the same time the boats could have taken a wider range, and fought with their guns and torpedoes. This brings, in fact, the ordinary torpedo to its proper level, the problem being that, if the enemy will not come to the torpedo, the torpedo must be taken to the enemy; and we have endeavoured to point out, in noticing this experimental attack upon the *Monarch*, some of the difficulties that would certainly be met with in any attempt of the kind upon a ship at anchor, both sides only using the ordinary torpedo. If the Harvey towing torpedo be taken as

the best of all such weapons, as an ordinary torpedo having no propelling power within itself, it also appears almost a useless weapon in any conflict at sea, for it must be presumed that both sides would be towing the “Harvey.” Take the instance of two ships of about equal speed, one pursued, and both towing off, from their bows and quarters and under their sterns, Harvey torpedoes. So long as the pursuing and the pursued vessels move nearly in a circle, whether to starboard or to port, how is the pursuer to strike him? If he were to attempt it, the probabilities would be that he would himself come in contact with the other ship’s torpedoes, while in the meantime the guns from the ship moving in the circle would be playing the same game upon the other that the *Kearsage* played with the *Alabama*. It is not a very disputable assertion to make if we say that in future actions between ships at sea, where the ordinary torpedo may be used in conjunction with the gun, it will be the latter that will decide the battle. It is entering upon very different ground, indeed, when self-propelling torpedoes, or torpedoes that can be sent under water against the bottom of an enemy’s ship at great distances and with equal velocities and percussion as can be done with cannon shot through the atmosphere at the topside of a ship, come to be considered. Whitehead’s fish torpedo does not yet fulfil all these required conditions by a long way; but it is undeniably a step in the right direction, and that all the conditions will be fulfilled eventually, and submarine torpedoes supersede our present naval artillery, would seem to be a matter placed almost beyond doubt. If this should in time be really accomplished, what follows? The creation of an iron-clad navy in which all the leading features of our present ships would be reversed, with all artillery and armour plating carried below the water line, and with coals, provisions, chain cables, &c., carried above all, and only surmounted by the funnels saising upwards from the boiler rooms, and a signal pole.—*Broad Arrow* 2nd August

In an article on the firearms at the Vienna Exposition, the *Wiener Weltausstellungs Zeitung* of June 19 informs us that Austria has the richest collection of fire arms. Of military firearms we find exhibited in Gallery No. 10 the systems of Werndl and Fruh with, with all their constituent parts in different states of fabrication, the Chassepot and the Berdan musket. The exhibition of rifles of luxury is very rich and beautiful, especially the Lefancheux and the Lancaster, which are always and everywhere used by preference, although the exhibition of other manufacturers is a proof that other systems of military firearms, such as Peabody, Werndle, Wanzl, etc., can easily be adopted for sporting rifles. Revolvers, chiefly after Colt’s principle, are exhibited in great number. The Russian Government exhibits in the southern covered court yard the transformed Krnka musket, now in use in the army; and arms of smaller calibre, with the Berdan lock No. 11., which are now manufactured on a grand scale in the Imperial gun manufactories in Tula. The Dreyse needle gun, which in late years has become so celebrated, has undergone many improvements, and forms one of the most remarkable objects in the rotunda. The lock is an improved needle mechanism, simplicity and solidity are united with a quick and convenient manipulation, and it is equal to the best systems now in existence. The whole mechanism consists only of six

parts, and that the loading and firing does not require more than three seconds. The deficiencies of the old needle gun are now done a way with by the adoption of a calibre of eleven millimetres and the metal cartridge with a heavy charge. Of quite a peculiar construction in the much talked of shell rifle, the use of which was forbidden by the Petersburg Convention of 1869, excluding the use of shell under the weight of 400 grammes. The rifle has a calibre of twenty three millimetres; at the lower end of the barrel is the lock (verschluss); it is provided with screws and a catch, by which it may be turned to the right. The lock contains the needle mechanism. The but end of the gun is represented by an iron bolstered bow, which greatly helps the man in taking aim. The shot contains an exploding charge; at the lower end of the shot a small pipe of copper is screwed in, which contains the percussion apparatus; a small hammer striking on a cap explodes the charge, and this bursts the shell into six or eight pieces. The result is said to be satisfactory at a distance of 1,800 paces. The celebrated gun manufactory of Liege is not represented in the Exhibition by its own productions, but merely by a collection of rifles which have been tried and used. It would have been desirable if in the rotunda a more systematic grouping of the firearms of different models had been arranged. The hardness of phosphor-bronze, which weighs from thirty to thirty five kilogrammes per square millimetre, has, together with the low price, led to the idea of fabricating parts of the lock and even barrels, of guns of this kind of metal, but the trials have not proved its value. In the covered courtyards of the Swiss exhibition we find the Amsler musket, now in use with a valve-lock; the new Vetterli repeater in different models, as muskets, rifles carbines, and small guns for cadets; finally, Martini breech loaders for military and sporting purposes, with locks of an improved Peabody mechanism. Franco has exhibited nothing of importance in firearms but a very all instructive collection of nearly the metal cartridges now in use in nearly all European armies. England has not sent much worthy of notice. Of the arms exhibited we may only mention the Henry Martini musket and the system Soper. The Northern States exhibit, in the Swedish pavilion the adopted Remington gun, which has also been tried in Austria. We find this musket in the United States of North America, and the systems of Peabody, Colt and Berdan; Springfield rifles with a sort of Wanzl lock and rifles of Ward, Burton, Schrape, and a modification of the Remington system.

A special convention has just been concluded between Austria and Bavaria, permitting the officers and soldiers of the army of the former to pass over the railroads of the latter on the same terms as those of the Bavarian Army. For access to her Tyrolce possessions this is a great convenience to the Austrian Empire, and its conclusion without any interference from the German Chancellor is regarded at Vienna as a palpable proof of the cordiality existing between the Court there and that of Berlin.

The Prussian troops destined to remain in French territory till the war debt is quite paid are part of the 11th Regiment of Uhlans, the 4th Brigade of Infantry, two heavy batteries and three companies of Artillery, a company of Engineers, and some Prussian columns.