

the pursuit of the enemy's cruisers; consequently, their qualities should be suited to the former object. The cost of a ship rises very rapidly with the increase of fighting powers, especially if she be required to possess good seagoing qualities as well. The damage to the enemy's commerce will depend less on the fighting powers of their cruisers than upon their size and number.

For this reason they should possess the highest possible speed; they should carry powerful engines; and as it is an object to have as many as possible at a given outlay, their dimensions should be restricted as far as compatible with the retention of these seagoing qualities, and the stowage of adequate quantities of fuel and provisions. Their fighting power need only be enough to render impracticable all attempts at resistance on the part of a hastily armed merchant vessel. As to the risk of the enemy's cruisers, powerful engines will give more security than heavy guns or armor. Ships destitute of speed are almost useless as cruisers, how great soever may be their fighting powers.

We now come to the other question needing consideration, in the case of a fleet of a second rate power, coast defences and the prevention of blockades.

The type of vessels employed for purposes of coast defence must be governed by the character of the coast. The more open the latter the better seagoers should the vessels be. Moreover, in every case, their draught of water must be such that all channels and anchorages are accessible to them. These considerations indicate vessels of a small size as the best in the majority of cases. To accomplish the end in view, we must restrict ourselves to the requirement of such seagoing qualities only as are absolutely indispensable in the particular locality in question; in sheltered seas and among islands, a very inferior measure of these qualities will suffice. On the other hand, as the role of these vessels is fighting exclusively, every care should be taken to render them as powerful as possible in the latter respects. They should possess high speed and facility of turning; they should carry guns of the largest calibre; they should be armoured; and should be capable of acting as rams and torpedo vessels when required. Now, it would obviously be an impossibility to combine all these qualities in any single vessel, and that vessel of small dimensions. We must content ourselves by giving a few to each vessel and secure the maximum of result by sacrificing all others. Here, then, is a case where the principle of the division of labour may admit of some useful application.

What a single ship, costing four or five million francs, may not be able to accomplish, may often be done by two or three smaller vessels, costing no more altogether than the large one. In this case we must not only give certain special qualities to each vessel, but we must see that these qualities are proper to supplement each other.

Thus, that a vessel may be used effectively as a ram, she must possess high speed and ease in turning. Again, as rams are more efficacious at night, vessels designed for the purpose should be as low above the water as possible. Vessels not possessed of these qualities would probably be of very little real use as rams. To be effective as a ram, a vessel should be built expressly for the purpose; her spur should be her only weapon; guns would merely increase her draught of water, and so diminish her speed and handiness, and consequently the effi-

ciency of her weapon. In a ship carrying guns, a certain height above the water is also required, which is opposed to another of the above mentioned conditions. To give a steam ram all the qualities requisite for the effectual employment of its weapon, it should be built for ramming, and for ramming alone, and not carry guns of any description. Torpedo vessels should satisfy similar conditions, but their dimensions should be, if possible, far more restricted.

The construction of vessels of the two foregoing types—rams and torpedo vessels—appears to be indispensable. With a sufficient number of these vessels the blockade of our coasts might safely be pronounced to be impracticable. No fleet in the world could withstand these incessant night attacks—it must withdraw or see its vessels, one after another, disabled or destroyed without any chance of defending themselves.

By a similar process of reasoning, we may determine the particular types of ships best adapted for any other purpose.

All constructions not adapted for special object will be found useless in time of need. Each ship should be designed in accordance with some clearly defined object; but as the circumstances under the fleets of second rate Powers will be called upon to act will vary in almost every case, so the types of construction must vary too.

The more ample the naval resources of a second rate power, the wider and more numerous will be the problems to be solved; but, in every case, these problems must be considered beforehand, and the constitution of the fleet subordinated thereto.

We may, therefore come to the following conclusions, viz:—The amount of the naval estimates will determine the composition of the fleet; and this in its turn, will set limit to the services the latter can be called upon to perform; the types of the vessel employed must be determined by the disposition of the fleet, and by the character of the coast. All that has just been said respecting a fleet applies with equal force to a squadron equipped for any special purpose or purposes.

#### THE AMERICAN WIMBLED IN.

The directors of the National Rifle Association met yesterday at No. 194 Broadway. Major, Smith Captain Wingate, Mr. Yudd, Mr. Peck, General Stgel, General Johnson, General Shaler, Colonel Cullen, and Mr. Church were present. The engineer reported that the grounds at Creedmore were almost ready for occupancy, the targets having been set and the embankments prepared. Upon reviewing the report of the committee on the range, the directors decided to build a suitable structure upon it for the reception and safe keeping of various articles. Very soon a large building suitable for the headquarters of the association, will also be erected. The report of the Finance Committee showed a balance of \$1,000 on hand. The report of the opening Committee was read and adopted. As is the case in Canada and England, most of the prize will be money. The grand opening meeting will take place about the middle of June, according to the convenience of Governor Dix; who will be master of ceremonies on the occasion. A committee will notify members upon what day it is to occur. Invitations are to be issued to commissioned officers of the National Guards of New York, New Jersey, Connecticut, to members of the Legis-

lature, to the Mayers and Supervisors of New York and Brooklyn, requesting the military guests to appear in full uniform. The exercises of the day will be as follows: At ten o'clock a. m., two shooting matches open to all members, who must shoot a distance of 200 yards with any military rifle. Entrance fee \$1. Prizes—first, \$20; second \$15; third, \$10; fourth \$5. In addition, the gold badge will be presented to the best marksman. This match will be concluded by twelve o'clock. By this time all will be present, and the grounds are to be formally opened by a National Grand match, to begin at 12.50 p. m. and consisting of delegations of twelve men from each regiment, or one from each company of the National Guards. Commanding officers of the regiments will award the prizes. No entrance fee to be charged; but each squad must furnish its own score keeper. If possible, a company of general officers will participate. General Rathbone and General Dix being both good marksmen, may possibly enter the lists. Each competitor shoots five shots at 200 yards. All those making over eight points will then shoot a similar number of shots in any position at 500 yards, each man to use the rifle used by his command. The following prizes will be given: First, for the best score, a gold badge and \$50; second, a gold mounted Winchester rifle, worth \$100, third \$23; fourth \$20; fifth \$15; sixth \$10; with six additional prizes of \$5 each; also to the best squad, a prize of \$5. At four o'clock p. m. the formal presentation of the prizes by the Governor will take place. Between half past two and four o'clock p. m. there will be a match open to all comers, to be shot with the military breech-loading rifle, the prizes being awarded for rapidity of fire and accuracy of aim. Three badges have been ordered as prizes for the contestants in this match. Competitors are allowed to practice on the range every Wednesday and Saturday until the opening day. Some of General Hancock's regulars will act as scorers and markers.

Captain Thomas and General Winchester were elected life members of the Association and Mr. A. V. Canfield, Joseph Halland, and W. K. Hearn, were also admitted to membership.—*New York World*, 18th May, 1873.

The *Invalides*, of Russia, in a very able review of the condition of military affairs in Russia in 1872, in speaking of artillery, says: "The latest reorganizations require an extraordinary increase in the artillery and arsenals. In 1870 we had only three batteries per division; now already four batteries are formed in all brigades and a late only from his Majesty calls for the early formation of five and six batteries. One can form an idea what our arsenals can perform, from the fact that in the coming year they are to furnish 500 pieces of ordnance (24 and 9-pounders), 43 mortars, 300 gun-carriages, 600 carriages, and 1,100 munition wagons

The French *gardes forestiers* are being furnished with Remington breech loaders. This organization was formed in 1870, and took part in the defence of Metz, Strasburg, Paris, etc. They will hereafter form a part of the *armee territoriale*.