THE ATTACK AND DEFENCE OF FLEETS.

(From the London Army and Navy Gazette.)

There was a larger gathering than usual on Monday, at the Royal United Service Institution, to hear Captain Colomb's second paper on the "Attack and Defence of fleets." This lecturer, after briefly summarizing the bases of naval tactics, as drawn out in detail in his former paper, proceeded to show that all nations has assumed the "end on" position as that in which ships composing fleets must, in future, maintain towards their enemies. That fact, a speed of ten knots, a turning power of some two minutes through eight points of the compass on an arc whose radius was two and a half times the length of the ships, were the limiting conditions of formation and movement of a modern fleet. There were then the three weapons—gun, ram, and torpedo—by which fleets may be attacked and defended and amongst which the choice lay. Speaking of the gun, it was held that, at 1,000 yards, only about one per cent, of shot fired at sea would strike a ship permanently at that distance and broadside on. It was shown that when two fleets were approaching each other end on at ten knots, the range was altering at the rate of 11 yards in ten seconds. "Under such circumstances observed the lecturer, "to fire was to waste powder. Hence he did not think that bow fire—now so much sought after—was useful, except in chase of a retiring foe. Coming to the ram, he considered that while it was the chief weapon of the attack upon a single ship, the end-on position of the ships in a fleet formation was a complete defence against it, and pushed it back in a fleet action to a subordinate office. Of the Harvey torpedo Captain Colomb qualified a more favorable opinion he had formerly expressed. He did not think it an effective fleet weapon at the present moment, and appeared disinclined to speculate on its future, for which, by the way, he was severely handled by Commander Pusey.

In the absence of faith in the ram or torpedo as the chief weapon for a fleet to use, Captain Colomb fell back upon the gun, and held that the main object of fleet strategy was still, as of yore, to bring the fire of your whole fleet on a part of your enemy's. Dividing the possible formations in which fleets might fight into four classes—namely, the extended front and small depth; the narrow front and great depth; equality of front and depth; and the system of isolated attacks by groups or pelotons; he went on to say that, practically, the two first classes included the two last, and then endeavored to show that in his opinion a battle between two formations in extended front would give no decided advantage to either side. The two fleets would pass through each other discharging a point-blank broadside fire at the moment of passing, and re forming at the distance of about a mile for another inter-passage of the same kind. He drew particular attention to his view that no effective ramming could take place in such a battle, and that as only three minutes would elapse between the two fleets getting into range and their shock, there was no time either for manœuvring or for effective bow fire.

On these grounds the lecturer held it false strategy to meet an extended front in the same formations; and, showing the nature of an attack by a narrow front and great depth on an extended front, held that the former was the proper formation to assume. It could advance within 2 000 or 3.000 yards, or within three or four minutes of time upon the extended front without disclosing the nature of the attack. It might then cut through the centre of the enemy's line, or pass close by either flank by a very slight movement to right or left and without any signal. The result would be to bring the whole fleet, ship after ship, fresh, clear of smoke, at intervals of a few seconds, upon one or two of the enemy's, who would be continually involved in smoke, and unable to see how the attack was progressing. Their ships would receive the successive broadsides of the whole attacking force without being able to return more than one or at the most two rounds. Captain Colomb was strongly condemnatory of compromises in formation, such as the equal front and depth, and held that an audacious determination to "win all or lose all" was the best policy. He also condemned the isolated attacks of pelotons, and thought that if a peloton was met by an equal number of ships in line ahead employing the attack described, it would suffer defeat.

In the discussion which followed, Admiral Sir G. Sartorius, spoke on the ram question not so much denying the lecturer's positions as maintaining that the conditions of naval war were even more changed than he admitted. Commander E. Dawson defended the peloton by asserting that its formation would not be maintained in practice, and held that there would be no such clear passage through each other by two fleets as was imagined.

THE ARMAMENT OF OUR FORTS.

In reviewing Owen's modern artillery in our last number we submitted some reflections upon the necessity for a more thorough and systematic course of artillery instruction, and particularly for the immediate preparation of suitable books of reference. That there will be but little hesitation in bringing about a reform in these respects cannot be doubted. A question of vastly greater importance, however, and one not so easily and timely solved, is that of the armament of our forts. Have we any guns on land or sea that can compete with those which would be brought against us in case of war with a foreign power? The Chief of Ordnance in his last reports cites, as he has done in previous years, the report of the mixed board of 1867, stating that 805 smooth-bore guns (20 inch, 15-inch, and 13 inch), 810 rifle guns (10-inch and 12-inch), and 300 mortars (15-inch and 13-inch), would be required in addition to the guns on hand. The Chief of Ordnance does not intend to convey the impression that the particular guns mentioned were recommended by the board after any adequate investigations into the general question of the armament of our works, for the resolution subsequently adopted by the board, and printed with its proceedings, shows that the action of the board had no such scope.

Of the guns recommended there are on hand two 20-inch (one not mounted) and 320 15-inch guns, but not a single rifled gun. It appears, therefore, that we could have to depend entirely upon the 15-inch guns in case of war. In the face of the results at Fort Fisher with the Parrott guns it is not likely that the Ordnance Department would like to adopt them, but would there be any alternative in case of war? It is instructive to review the question of rifle guns in our seacoast service, but we can touch upon some salient points only. The Ordnance Department has made the 15 inch gun its main reliance, regarding the question of rifled guns as of secondary importance. In the next place it has been a cardinal theory of the Ordnance Department that what rifled guns might be required should be made of cast iron. These points are illustrated by the record, to which we shall refer another week.

Admitting that the 15-inch gun is an admirable gun for special uses, as we have already abundantly argued that it is, and that within its own range it can cope with the heaviest rifle guns sheltered by the most approved modern armor, there remains the fact that vessels of war armed with rifles can knock our forts down about our ears in spite of the 15 inch, by taking up position beyond its effective range. The advice to hold our fire until the vessels get within range, as given by certain Ordnance officers in the *Journal* and elsewhere is very wise; but suppose the vessels are not so obliging? It is trivial to enter into an argument to show what disadvantages the artillerists will be under who are forced to meet with 15-inch guns only a hostile fleet armed with heavy rifles. So far from the truth is it that our main reliance should be upon smooth bores, that by far the largest proportion of guns should be rifles. We do not set our opinion against that of so distinguished an officer as the late General Rodman. We quote the opinion of the great engineer Todleben or rather the committee of which he was the head, appointed by the Emperor of Russia in 1865 to investigate the subject of "The Manufacture of Navy Guns for Fleets and Fortresses."

At the present state of the question in reference to the coast defences against the attack of an iron-clad fleet, it was considered a necessity to arm the coast batteries with guns which will be able to injure or destroy an iron clad fleet, even at a long distance.

To obtain this mark the ordnance must possess two qualities in the very highest degree:

First, to produce the most destructive effect on the plates hit by the shot.

Second, to hit the mark with the greatest accuracy.

These two conditions can only be fulfilled by employing rifled guns of large bore, made of the most suitable metal, viz, cast steel.

Although spherical shot thrown from smooth-bore guns in some cases may act successfully, this effect can only be obtained at small distances. . . . . Even if the distance is not great, smooth-bore guns cannot be compared with rifle guns, unless a much heavier shot is employed, which of course is a great inconvenience for handling the gun, while also a less number of rounds can be fired.

For this reason every fortress exposed to the attack of an iron-clad fleet should be armed with rifle guns of large bore, and coast defences departing from this principle lose the best means of their defence and put themselves wilfully in a critical condition.

We find the quotation in the report of the Engineer board, of which Major-General Barnard was the head, on "Fabrication of Iron for Defensive Purposes." The report is one of great value to the engineer and artillerist, and is pregnant with matter bearing on the subject of which we are treating. In summing up the chapter on artillery it is stated that the smooth-bore gun is almost unknown to the armaments of Europe. Speaking of our 15-inch gun, the Board says "it is quite safe to say that it is a less effective gun for the most essential purposes of a great gun, viz., for inflicting injury upon the most powerful class of iron-clads than the Krupp 11-inch, or the English 12-inch, or even 10-inch gun. In a foot note it is added that "it is maintained in Europe that even 9-inch