

Report of Admiral D. D. Porter.

(Continued from page 100.)

WASHINGTON, D. C., Nov. 6, 1874.

GUNS.

We have three classes of guns in our Navy which had no superiors of their kind in any country, viz., the fifteen inch, the eleven inch, and the nine inch.

These are, in fact, peculiar to the United States Navy, and at the commencement of our civil war they were the best guns afloat. Since that time, owing to the immense improvements in plating ironclads, it has been found necessary to construct heavy rifled ordnance for the purpose of perforating the iron.

Against wooden ships our cast iron guns are sufficiently effective at the ordinary ranges where a ship can be struck at sea; but there should be a proportion in ships' batteries of heavy rifled cannon, which we have not on hand, and of which at present there seems no likelihood of our obtaining a supply.

Many attempts have been made to convert our cast iron guns into rifles, and the Parrot rifled gun cast during the late war was expected to accomplish great results.

The Parrot gun, however, proved a failure, and on several occasions caused more destruction, by bursting, to the crews of our own vessels than they did to the enemy.

Late experiments with the fifteen inch gun prove that it will not stand the test of rifling. Whatever may be the cause of this failure, or whatever the prospect of remedying the evil, confidence in rifled cast iron guns has been destroyed, and it would not do to introduce them into the Navy until more satisfactory results are obtained.

It is my present opinion that cast iron guns are not fit for rifling, and that all cast iron rifled guns are liable to burst at the fiftieth fire.

We have trifled for years over an important matter that might have been decided in a few months, and all that is now left us to do is to work, and either procure from abroad the requisite number of large rifled guns, or else establish a Government foundry where we can construct them to our own satisfaction.

By reason of this proposed change in our ships' batteries, it is not desired to dispense with fifteen, eleven, and nine inch smooth bores, but to have a proportion of rifled guns of heavy calibre mixed with them, so that our vessels will not be forced to go into action with only smooth bores against long range guns which the former cannot reach. To establish our own foundry would require a considerable outlay, but there is no other way of producing heavy rifled guns in the United States; for private individuals would not undertake to build guns for the Government, unless they were paid for the plant as well as the guns, and it is altogether likely that we should have better ordnance built by Government than by contract.

What we require for immediate service is a selected class of steel breech loading guns superior to the seven hundred pound thirty five ton rifled gun. These are, next to the monitors, which should each have a gun of this calibre and one of the four hundred pound eighteen ton gun, for our sea going ironclads, the pivot guns in our wooden vessels, the twelve hundred and fifty pound

twelve ton guns for our smaller vessels, as pivot guns, which would be equivalent to nine, ten, and twelve inch rifles.

"Taking the penetrating powers of the shot from these guns, on leaving the muzzle, into consideration, I find that the twenty five ton gun is about three and a half, the eighteen ton gun more than three, the nine ton gun nearly twice, and the six and a half ton gun one and a half times as powerful as our heaviest sixty eight pounder, while at long ranges, say one thousand yards, it is greater still."

The twenty five ton gun rises to more than seven and a half times, the eighteen ton gun to seven times, etc.

This comparison is made merely to give a general idea of the advantage rifled guns will possess in any future contest at sea.

Similar comparisons hold good with regard to other rifled guns. The total energy of the heaviest rifled cannon increases even more rapidly than the penetrating power per inch of circumference.

This maintenance at long ranges of the penetrating power of rifled projectiles is well understood and appreciated by every nation except ourselves; but if we combine the system of guns in use abroad with our own smooth bore cannon, we shall have batteries on board our ships with which no fault could be found.

In reading over some reports of experiments "on the penetration of armor plates by steel shot," I find it asserted that the American fifteen inch gun, charged with fifty pounds of powder and throwing a spherical steel shot of four hundred and eighty four pounds, would fail to penetrate the Lord Warden's side (7½ inches iron and 30 inches teak) at any range, while the nine inch twelve ton gun, with a forty three pound charge, would send its two hundred and fifty pound shot through her at a range of one thousand yards. It is also stated that the fifteen inch gun would not penetrate the Warrior (4½ inches iron and 18 inches teak backing) beyond a distance of five hundred yards, while the English seven inch six and a half ton gun, weighing about one third as much as the fifteen inch gun, would do the same with a charge of twenty two pounds of powder and one hundred and fifteen pound shot, and the twelve ton gun would penetrate up to two thousand yards.

These facts are well understood by naval officers.

It was previous to the year 1869 that the Lord Warden and the Warrior were cited as above by way of comparison; but since that time great advances have been made in guns and armor, and in Captain Simpson's late report we find a thirty five ton twelve inch wrought iron muzzle loading rifle gun firing a shot of seven hundred pounds, with one hundred and ten pounds powder, perforating a fourteen inch plate backed by eighteen inches of timber and one and a quarter inches iron skin, at five hundred yards; passing through twelve inches of solid iron, eighteen inches backing, and one and one half inches iron skin up to seventeen hundred yards; up to two thousand yards, passing through eleven inches of iron, twelve of wood, one and a quarter inches iron skin, etc.; at thirty one hundred yards, passing through ten inches iron, eighteen inches backing, and one and a quarter inches iron skin.

The twenty five ton eleven inch muzzle loading wrought iron gun with a smooth bore of four hundred and thirty pound and eighty five pounds of powder perforates fourteen inches iron, eighteen inches backing, one and one quarter inches iron skin up to five hundred

yards; goes through twelve inches iron, eighteen inches backing, and one and a half inches iron skin, at six hundred yards; goes through eleven inches iron twelve inches backing, and one and a quarter inches iron skin, at thirteen hundred yards; and through ten inches iron, eighteen inches backing, and one and quarter inches iron skin, at nineteen hundred yards.

The ten inch wrought iron muzzle loading gun of eighteen tons, with four hundred pound shot and seventy pounds powder, perforates within a fraction of fourteen inches iron, backed by eighteen inches teak and one and a quarter inches iron skin at five hundred yards; goes through twelve inches iron, eighteen inches backing and one and one half inches iron skin at the same distance; perforates eleven inches iron, twelve inches teak, and one and a quarter inches iron skin, at six hundred yards.

The nine inch wrought iron muzzle loading gun of twelve tons, with fifty pounds powder and two hundred and fifty pound shot, perforates eleven inches iron, twelve inches wood backing, and one and a quarter inches iron skin, at six hundred yards, with seventy pounds powder and four hundred pound shot; goes through ten inches iron, eighteen inches backing, and one and a quarter inches iron skin, at one thousand yards.

The eight inch wrought iron muzzle loading gun of nine tons, with thirty five pounds powder and one hundred and eighty pound shot, goes through seven inches iron, twelve inches backing, and one and a half inches iron skin, at four hundred yards.

Thus it appears that any of the above guns, with the exception of the last mentioned, could destroy one of our eleven inch turrets outside of nine hundred yards.

There are three guns now proposed to be constructed by Mr. Krupp, one of fourteen inches diameter of bore and fifty seven and a half tons weight, one of fifteen and seven tenths inches diameter of bore and eighty two tons weight, and one of eighteen inches diameter and one hundred and twenty four tons weight. What such guns will do against iron turrets, as at present constructed, it is easy to foresee.

So rapid is the march of improvement in ordnance, that every year finds us more helpless, and under the circumstances it would be as unjust to expect our Navy to succeed against such odds as it would be to count on victory for our Army provided with smooth bore artillery and old fashioned muskets, against rifled field pieces and Remington breech loaders.

The American people are very exacting, and apt to show a good deal of feeling against those who sustain defeat, as I frequently noticed during the late civil war, without fully informing themselves of the disadvantages under which their combatants were labouring. The popular chagrin would be great, indeed, if we had our ships driven from the ocean in a war, and our ports hermetically sealed by a blockading force.

Under such circumstances our Navy would have great cause of complaint at being lent on a forlorn hope with guns and vessels built in or before 1860, to compete with guns and vessels built since 1870.

The Navy would not be to blame in such a case if it met with defeat, but it could very properly complain of not being supplied with means to gain victories and protect our coast and harbors.

To show the importance foreign powers attach to rifled cannon, I annex a list of guns now on hand in the British navy alone. I select those we belonging to the most pro-