

bell for the orderly; who calls a midshipman of the watch; who trots off to the officer of the deck, with Captain Copperswab's compliments, to know what boat has come alongside, at such an unusual hour, and the cause of that noise?" &c.

Bunting, by this time, had a lantern at the gangway, and we passed over pretty well—considering circumstances. "I say, Bill," says one beauty to another—as they came up the main-hatch, from their hammocks, minus every thing but their shirts, to take a cooling promenade on the forecastle—"what a list a-port, Mr. Clewline has, eh! Bad stowage that. I tell you what—they two officers has more grog under their jackets, than you and I got a dozen apiece for yesterday!"

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#### ON STEAMERS OF WAR.

By a Member of the United States Naval Lyceum.

WHEN the application of steam to propelling vessels was first successfully made in this country, it was at once seen that the invention was destined to produce an important effect on naval war. We happened then to be engaged in our conflict with England. Our coasts were blockaded to the total interruption of trade, and the annoyance of the inhabitants of our whole maritime frontier. Being unable to cope with the forces sent against us for the want of a navy, our ingenuity was sharpened to overcome the disparity between the power of the enemy and our own weakness, by the introduction of a new arm. This led to the first application of the newly discovered agent to warlike purposes, by the construction of the steam frigate *Fulton*. This first attempt was naturally enough a very rude one. The vessel was clumsy, cumbersome, and very slow in her movements. Still, having the power to move at the rate of five miles the hour, she would have been able to take advantage



of calms to destroy such of the enemy's vessels, as lay near the harbor of New-York, and compel the blockading fleet to remove to a more respectful distance. The formidable character of this vessel was, however, never tested. Peace was made before she was quite prepared to seek out the enemy, and the improvements, which would have been rapidly introduced in succeeding constructions, were prematurely arrested.

Since then nothing further has been done, among us, towards the construction of steamers of war, until within the last year; although they might have been made eminently useful, in the suppression of piracy in the West India seas. One vessel was, indeed, employed there during a short interval, rendering essential service, which could never have been rendered by a sailing vessel, in breaking up a nest of pirates; notwithstanding her defective adaptation for the sea, which she was never intended to navigate. While steam vessels can move with celerity among the keys that abound along the coast of Cuba, and, in defiance of the trade winds, traverse great distances and appear suddenly where least expected, they are, from the wholesome agency of their furnaces in purifying the air, guarantied a complete exemption from the desolating fevers that decimate our crews in those seas, and all the minor consequences of tropical malaria. It is therefore very extraordinary, that, in a country where steamboats have not only been invented, but received every improvement that has brought them to their present perfect condition, no use should have been made of this valuable agent where its advantages might have been inappreciable.

If, however, the construction of steamers of war has been neglected among us, other naval powers have been more alive to their importance. England and France have, at this moment, quite formidable lists of this class of vessels. England has twenty-one and France twenty-three steamers in commission. France, looking to the possibility of revolutionizing naval war by the introduction of a new agent, and breaking down, in some measure, the disparity between herself and England, by rendering the fleets of the latter, to a certain



extent useless, has rather taken the lead in developing the capacities of this new arm. England has reluctantly assented to the change, and is now endeavoring still to maintain her relative superiority in this arm also. We have, quite recently, seen accounts of the fate of an action, between the British Legion and the besieging Carlists before St. Sebastian, having been decided by the opportune arrival of a reinforcement in the *Phoenix*, *Salamander*, and *Comet* steamers, and by their own efficient co-operation by means of shells, and hollow shot from their sixty-four pounders, in opening a practicable breach through the batteries of the besiegers.

If the co-operation of steamers of war with armies on a coast may be useful, and if they may render it absolutely impossible for a power, however strong on the ocean, to blockade an inferior power provided with this active and always available agent of annoyance and defence, their co-operation with fleets of sailing vessels, in great engagements on the high seas, will not be less advantageous. To test the question of their utility, suppose a fleet of twenty sail of the line, attended by several steamers, encountering, in calm or nearly calm weather, an enemy's fleet of thirty sail without those auxiliaries. The inferior fleet might, then by the aid of its steamers, place itself at a sufficient distance from the enemy, to be beyond the reach of its guns, and in a favorable condition to escape, on the springing up of a breeze; or, adopting the nobler alternative of combat, the inferior might, by the aid of its steamers, choose its position, and assailing the superior fleet in detail, thus render it inferior and actually overcome it, by being stronger on every given point of contact. The steamers might not only be employed in towing the ships into action, or removing disabled ones and prizes to a position of safety to refit; but, in the intervals, use their formidable guns from raking positions with destructive effect. Hence it appears, that it might be not only possible, but easy, under given circumstances of very possible occurrence, for an inferior fleet by the aid of steamers to overcome a superior one.

It follows that steamers must, henceforth, take a prominent part in every future naval war; and that they may be



equally useful in protecting a coast from blockade, and in co-operating actively with fleets upon the ocean. The question next occurs, whether different forms of vessels will be required for these different services. We think not. Steamers for the defence of a coast should have a light draft of water, so as to keep inside of a blockading fleet, and go, if necessary, where they could not be followed; for the sea, they must, from their very nature, be of the same relative construction. They must not be deep and sharp like other vessels, with their body almost entirely immersed, and rising and falling with every sea; but they must be comparatively flat, floating on the surface of the waves, as nearly as possible, on an even keel, and with their paddle-wheels uniformly immersed, instead of being plunged deeply beneath the water and then withdrawn entirely, as the wheels would be if attached to a sailing ship. While there would be no possible reason for any distinction of model between steamers intended for the defence of the coast and those intended to perform sea voyages and co-operate with fleets, there is every reason why they should combine an adaptation for both purposes. Even to act with efficiency on the coast requires a capacity to brave the perils of the sea in passing from point to point.

We have, at length, recognized the necessity of preparing for the change in naval war which has resulted from the inventions of our countrymen, by commencing the construction of a steamer at the Brooklyn navy yard. The question occurs, whether in the form of this vessel attention has been paid to this double adaptation, which we have assumed to be essential. We fear that it may not prove so; her model does not appear suitable for a sea-going vessel, and her having two bows, with a rudder at either extremity, will probably prove very inconvenient. The only advantage derivable from this arrangement would consist in its enabling her to escape from an enemy, which she had been assailing, without turning so as to expose her broadside. This advantage is a very speculative one; for, with a single rudder, she might back sufficiently far astern to be but little exposed in turning. The disadvantages attending this



arrangement are more real and obvious. In the first place, since the bow and stern of a vessel should, according to the rules of naval architecture, be of different form, in order to give the greatest velocity, there is necessarily some loss of this vitally important quality in making them similar. In the next place, supposing the vessel to be otherwise adapted for going to sea, it would be impossible to secure the foremost rudder so as to resist the shock of the waves when in rapid motion. To avoid this insuperable difficulty it is contemplated to unship the foremost rudder and take it on board, where it will be much in the way. Besides, this rudder cannot be unshipped without a cumbersome apparatus; and this apparatus must be placed in the extremity, precisely in the way of the heavy bow gun, which is to be the great offensive agent of the vessel, and which, according to an established axiom of naval discipline, should be at all times clear and unincumbered.

If, then, this vessel should be found defective, the question will occur, what ought to be the form of a steamer of war intended to serve the double purposes, of defending the coast, and co-operating on the offensive, with fleets? Perhaps the surest mode of obtaining a model for steamers of war, which might serve for all future constructions, would be to call in the assistance of an American citizen, who has invented almost every improvement in the steamboats of our country, from the first efforts of Fulton, down to our own times; and who, besides, has directed the energies of his extraordinary mind to this very subject of steamers of war, having, during our late difficulties with France, not only prepared plans for the construction of a formidable steamer of war, but even conceived, and avowed, the patriotic and chivalrous intention of embarking, both person and fortune in the deadly struggle, to which his inventions would have given a new and terrible character of destructiveness. This individual is Robert L. Stevens, Esq., and we do not believe that his services would be withheld, if properly sought, and left free from that dictation, and supervision of plans, to which genius, unless trammelled by poverty, is unwilling to submit. In addition to this gentleman's superior



knowledge of the construction of steam vessels, and the arrangement of their machinery, he has employed himself during years in perfecting the hollow shot which he himself first invented, and in a long series of practical trials in which their destructive qualities were sufficiently tested. The same individual possesses, therefore, better than any other, the knowledge and practical experience necessary to build equip, and arm this peculiar class of vessels, which are destined to become such important agents in naval war.

If possessing within our country the profoundest and most sagacious genius for inventions of this nature, tried during the last twenty years in a series of improvements in steamers, which have all been productive of the most splendid results, we may not have the benefit of it in establishing the future model for our steamers of war, it will be better, instead of starting with an entire novelty, to make use of the experience of other naval powers, which have been constructing steamers of war during the last ten years; and improve upon their plans, through the aid of our own superior skill, in the application of steam to navigation.

The French steamers of war have chiefly been used in the Mediterranean, and been constructed for the purpose of navigating that circumscribed and comparatively sheltered sea. Besides, France has invented nothing in this respect, and derived all her ideas, with, indeed, the greater part of her machinery ready constructed, from England. The English steamers therefore are best worthy of attention. On their own coast they have to encounter habitually the most tempestuous gales, and they have besides made voyages in safety to most of the remote seas frequented by the fleets of England. The English government steamers are of two classes; one class being of a size varying from one to three hundred tons, employed as mail packets between Dover and Calais, Dublin and Holyhead, and Falmouth and the Mediterranean, and also as tenders to fleets; the other, of a more formidable kind, varying from six to nine hundred tons, peculiarly armed, and calculated for offensive warfare. Two or three of the smaller class might be advantageously employed by us on the coasts of Cuba and St. Domingo, and



in the Gulf of Mexico, because, at the same expense, the armed presence of our flag might be more multiplied for the purposes of protection than by a smaller number of vessels of superior force. Facts concerning the form and equipment of the larger class of vessels, may, however, be the more interesting, especially as they are of more recent construction.

The following are the dimensions of a British steamer of war visited by the writer at Woolwich. She was of 800 tons burthen; 174 feet long on the upper deck; 153 feet keel; her moulded beam was 31 feet; depth in the engine-room 17 feet. Her draft when launched was 8 feet 4 inches forward, and 8 feet 2 inches aft, with a displacement of 530 tons; when ready for sea her draft was 13 feet forward and 14 aft. She had two engines of 110 horse power each; with a diameter to the cylinders of 55 inches, and a length of stroke of 5 feet. The height of her shaft above the water-line was 5 feet. Her consumption of coal was 23 bushels the hour at full power. She stowed 260 tons of coal, 35 tons of water, and 4 months provisions for 100 men. She was said to be full amidships, with a flat floor, the bow being sharp to the water-line, and run clear; the stem raked, but the stern was nearly upright and round. None of the machinery except the chimney and water-wheels was in sight, the cylinders lying horizontally below deck. The engine and boilers occupied the whole body of the vessel amidships; before and abaft them were between-decks for the accommodation of the crew and officers. This vessel was brig-rigged, with very taunt lower masts, having a great space between them. She had a square foresail, but no square mainsail on account of the chimney, light topsails, and topgallant-sails, and head sails, like a schooner. She carried no long-boat amidships which were grated over the engines, and only stern and quarter boats. Her armament consisted of a pivot 32 pounder on the forecastle, ranging on both bows, and considerably abaft the beam; abaft the wheel-houses were two 32 pound carronades, and on the quarter-deck a medium gun, weighing 84 cwt., and bored to receive a ten inch ball or hollow Paixhan's shot, mounted on a pivot, so as to



range over the taffrail, and forward of the beam, on both sides. The greatest speed of this vessel, on trial, was 10 knots, or geographical miles, the hour; and even the midshipmen, in extolling her good qualities, did not venture to boast of more than 11 or 12 knots, which are, of course, subject to the customary reduction. This vessel, and others of her class, perform well at sea, and have encountered the severest gales without being disabled.

In giving the foregoing facts with reference to an English steamer of the most approved construction, we would not venture to suggest that we should imitate it in the construction of ours. But in the absence of the enlightened ingenuity and experience of the distinguished engineer to whom we have alluded, if the country is not to have the benefit of his talents, these data might form a basis for a model, which it would be safer to trust to, than any crude novelties, unsanctioned by the name of some distinguished and practised engineer. Perhaps the Charleston packets might furnish useful hints in contriving a proper model. They are much faster than the largest British steamers, and have triumphed repeatedly over the most violent gales. Their voyages are, however, all short; and they depend entirely on steam, having only a single sail to use in case of disorder to their machinery. A steamer of war, on the contrary, must be fitted to cross the ocean, and make long voyages. She should be rigged like the English one just cited; so that, by sails alone, she would be able to make a fair passage, reserving her steam for emergencies, and for the peculiar service on which she may be sent. When co-operating with fleets she might receive supplies of fuel from them, and be towed, under ordinary circumstances, when making a passage, by the fastest ship.

We have assumed, then, that our steam-batteries, as it pleases Congress, in its acts providing for their construction, to call them, should have an equal adaptation to act efficiently on the ocean and on our coasts. It would be very easy to show how usefully they might be occupied at the present moment. Not only might they be most advantageously employed in the protection of our revenue, for which



service we should have but one and the same navy that we have for all purposes of protection ; but, in connection with our naval stations, they would be perpetually useful in towing our public vessels in and out of port ; in the transportation of public stores, and the rapid transfer of seamen from station to station ; relieved from the present exposure and delay, and the injurious relaxation of discipline, consequent upon throwing a great number of seamen, with a single officer, on board a private vessel. Several fatal accidents, attended with much loss of life, have been occasioned, in times past, by the existing system. And we are, while writing, called on to deplore the consequences of the terrible accident, on the Boston and Providence rail-road, to a draft of seamen destined for the sloop Boston, and the loss which the service has sustained, by the injury of the active officer in charge of them.

But there are yet other and more important services that could be rendered by this class of vessels, better than by any other. We should, at this very moment, have several steamers of war moving along the the coasts of Texas and Mexico, to protect our extended commerce from the depredations of the belligerents, and from the piracies which will inevitably grow out of the civil war now raging there. Whatever may be the result of the contest, it will leave in the minds of the Mexicans a rankling ill-will ; which, if it do not produce open war, will, at any rate, break forth in piracies upon our unarmed merchantmen, attended by sanguinary atrocities towards their crews, suited to the vindictive character of that people. In addition to the necessity of a fleet of steamers on the Mexican coast, two or three should be kept perpetually circumnavigating the West India islands, visiting every key and inlet, and removing from the piratically disposed every hope of impunity. We hope that it will not be long ere we shall be in condition to afford to our commerce in that region, so rich, fertile, and productive, yet so ill-governed, and distracted ; so blessed by nature, and so cursed by man—that protection, which can only be effectually rendered by a fleet of well-constructed, well-appointed, and formidable steamers.