

confidently expected to run at least eighteen knots, that is more than 20 miles an hour. We know of small steamers used in smooth water and even the Irish channel, which sail as fast, but no man-of-war with guns, coal ammunition stores, and so forth, has even approached this amazing speed. Jonathan then has led the way on paper, but failed in execution, while John Bull, improving on the suggestion and avoiding his rival's errors, now possesses the finest and fleetest ship of war that the world has yet seen. We have used in speaking of these new vessels, the word ship, because in addition to their steam power they are fully rigged ships, in masts and yards, and thus prepared to cruise under canvas alone in any part of the world, and for any length of time—using their steam only in action.

"Of the exact weight of the gun carried the accounts before us do not speak. We know, however, that while they carry formidable guns the length of range is the point, next to the speed, aimed at. It will be obvious, even to those who know least of nautical matters, that the ship which, from her superior speed, can choose her position in attacking an enemy holds that enemy almost at her mercy, even if her range of gun should not be very superior, because, in every ship there are points, forward or aft, in the line of her keel, that is to say, from which she cannot fire without cutting down her own mast or standing rigging. We do not speak, of course of turret ships which, being little capable of going to sea, have no masts, and can fire over all. But such a ship as the *Shah*, carrying guns of great range, though of smaller calibre, can choose her own position, and choosing a position on which an iron clad could bring no gun to bear or to hit, of course the strength of her plating or power of her artillery would avail nothing in the long run, for she could be nothing more than a floating mass to be fired at till an unlucky shot reached her crew, her machinery, or her steering apparatus.

"Such, at least, appears to have been the idea of the American projector, and such, so far as can be seen, England has given practical effect to, and thus it would seem that the terrible armour clads, the *Retributions*, *Devastations*, and such like, with their enormous guns, are quite likely to be superseded by the stinging steel shot of such wooden ships as the *Inconstant* and the *Shah*—that is to say, that the whole question of attack and defence at sea is about to be re-argued and re-experimented on, at a cost of further millions of taxation to be levied from the already over-burdened taxpayers, not of England alone, but of the maritime world.

"It follows, as a matter of course, that the *Shah* will not be the last of her class built. America, from causes quite under control, has, it is true, failed in her first experiment, but she will renew the contest for superiority. France and all the other maritime powers must follow suit, and it certainly seems a strange thing that just as the armour plates had received their greatest development in the *Devastation*, a new ship heaves in sight which laughs at their unwieldy strength, refuses to come within range of their Woolwich Babies, and raking them from stem to stern, sends them helpless to their moorings or to the bottom. Strange it is indeed to think of the impending change! But England has nothing to fear; her sailors are as skillful and brave as they were in the days of Duncan and Nelson, and assuredly they will fight none the worse when they find themselves once more

on board of real crack ships—things of life and beauty, which may compare with the *Arethusas*, the *Piques*, and the *Druids* of their old songs.

"We are not indulging in speculations either on the fanciful or the remote. The iron clads are admittedly unwieldy and of questionable seaworthiness. The *Devastation*, for instance, the newest and the most formidable, goes to sea in good company to look for a gale of wind that she may be tested, and in case of accident, succoured. Such care proves grave fears for her safety, and already her crew have pronounced her more of a bathing machine than a ship. Such a ship as the *Shah* is described to be, finding her in heavy, or in any weather, would, we firmly believe, be more than a match. And were both ships waiting for a volunteer crew preparatory to an encounter, we are pretty sure that the *Shah* would be manned by fifties ere the monster could muster five blue jackets. No, we do not speak from mere imagination, we think we are perfectly warranted in saying, that the wooden walls of our country will once more take their old honored places in our country's defence. Armour must, as it has disappeared from the breasts of our warriors, fall from the sides of our ships. It cannot be otherwise. The gun powder, the bullets, the iron, still retain their old properties. No human frame could carry iron enough to resist the musket. No ship can float iron enough to resist the Palliser shot. Strong arms and stout hearts must fight and win in battle. The blacksmith and his anvil can furnish the tools for offence, but the eternal law of nature tells us that the Dead Sea itself could not float iron enough to resist the steel head of the Woolwich baby, or if need be, of a bigger brother."

It is evident then that the British Admiralty have shaken off the *Engineering* nightmare which has so long paralysed the energies of her naval constructors (in which latter class we do not reckon the builders of the iron-clads, as in no sense could they be called ships at all), and is about to start on a new course by which England will yet again have a fleet, and still be in a double sense mistress of the seas.

We are of opinion that both our contemporaries are under a great mistake in supposing that Mr. ESHERWOOD's abortions had anything to do with the design of the *Shah*; they were armoured vessels of the *Monitor* type, without masts or sails, and how they could ever furnish a hint towards the design carried out so successfully, is beyond our comprehension. The ridiculous claims put forth by the constructors of the *Wampassog* and her consorts, were also put forth in the case of the notorious *Dunderberg*, which spent a year and two months in making the voyage from New York to Cherbourg; while it evident the *Shah* has been constructed by a seaman as a sailor's ship, not as a landsman's ideal.

In another page will be found an account of the trials of the *Devastation*, and our readers will see no reason to doubt how thoroughly useless and unsafe she is.

The following description of the artillery equipment for the Ashantee war is taken from the *Engineer*, and shews how thorough

ly every possible contingency has been provided against. It is to be hoped that an Expedition provided with such ample means will be successful in putting an end to the power of a contemptible and savage foe, whose existence as a power has been a barrier against all civilising influences—alike injurious to European and native interests.

The *Engineer* says of the artillery equipments for the Ashantee war:—

"Almost every modern campaign introduces some new weapon or engine of war, nevertheless the preparations for Ashantee comprehend combinations unusually striking. Smooth-bore brass howitzers, drawn on miniature carriages by locomotive traction engines, or, as an alternative, carried on the heads of a number of women, constitute a form of artillery which, we will venture to say, has never been predicted by any one. A battery of 4½ in. howitzers, with 1800 rounds of ammunition, two Gatlings with their ammunition, exceeding the total number of rounds fired in the Russian war, are to be sent out. To begin with the howitzers. Sir G. Wolseley, it seems, specially wished for the 4.2-in. or bronze smooth-bore Cohorn howitzer, in preference to the 7-pounder muzzle loading rifle gun. The respective powers of the two guns are as follows:—The 4.2-in howitzer weighs 273lb it fires a spherical common shell weighing nearly 9lb. when filled with a bursting charge of 14oz. Its shrapnel contains 72 carbine balls, one pistol ball, and one buck shot. Its firing charge is 5oz., and it carries with tolerable accuracy up to 600 yards. The 7-pdr. weighs 200lb. It fires a common shell weighing 7lb. 5oz., including a bursting charge of 1lb. It fires a shrapnel containing 42 bullets, and is ranged with considerable accuracy up to 1800 yards. It has firing charges of 6oz. and 4oz., the latter for double shell at high angles. Thus, the 7-pounder is the lightest piece, and, if required, fires the more powerful projectile in its double shell; its shrapnel has fewer bullets, but its range and accuracy are superior beyond comparison. The preference for the smooth-bore is on the score of simplicity, because it may be in the hands of native troops. It became necessary to provide this gun with a special carriage, suited to the conditions under which it is to act. On the 21st of August last the question of the carriage was put to Colonel Field, and he undertook to design and turn out all carriages such as would meet the requirements of the case in a fortnight. In a week the pattern carriages stood approved, and in a fortnight the battery was ready for issue, as promised. The carriage consists of four pieces only, exclusive of wheels; it weighs 344lb. The wheels are 3ft. in diameter; the felloes and spokes are made of Santa Maria wood; the nave is gun-metal, being of the Madras pattern. The wheels have no "dish," and the axletree arm no "set" in it. The width of the track of the wheels is 2ft 4in., so that the carriage can move along a path 3ft. wide. The limber is made of Santa Maria, with two teak boxes, each containing ten rounds of ammunition—viz., five common shell, three shrapnel shell, and two case shot, together with cartridges, "common" and "diaphragm" fuses, tubes, and other stores. The small arm ammunition is very mixed. Besides the lead and powder sent out for obsolete arms, 3,000,000 Enfield muzzle-loading cartridges have been sent, and probably nearly 2,000,000 rounds of Boxer ammunition for Snider rifles. We now come to a very interesting feature in the preparations—the steam engine. We have twice had