The Home of Taste.

You seek the home of taste, and find
The proud mechanic there,
Rich as a king, and less a slave,
Throned in his elbow-chair!
Or on his sofa reading Locke,
Beside his open door!
Why start!—why envy worth like his
The carpet on his floor?

You seek the home of sluttery—
"Is John at home?" you say.
"No, sir; he's at the 'Sportsman's Arms;'
The dog-fight's o'er the way."
Oh, lift the workman's heart and mind
Above low sensual sin!
Give him a home! the home of taste!
Outbid the house of gin!

Oh, give him taste! it is the link
Which binds us to the skies—
A bridge of rainbows thrown across
The gulf of tears and sighs!
Or like a widower's little one—
An angel in a child—
That leads him to her mother's chair,
And shows him how she smiled.

ELLIOT.

[From the London Quarterly Review, March, 1856.]

THE MONSTER STEAMSHIP.

The voyager up and down the Thames has noticed with astonishment, during the last eighteen months, the slow growth of a huge structure on the southern extremity of the Isle of Dogs. At first a few enormous poles alone cut the skyline, and arrested his attention; then vast plates of iron, that seemed big enough to form shields for the gods, reared themselves edgeways, at great distances apart; and as months elapsed, a wall of metal slowly arose between him and the horizon.

The sooty engineer, as he leans over the bulwark of Bridegroom No. 2, when questioned respecting it, tells you it is 'the big ship'—he knows no more.

If, moved by curiosity, the voyager hails a boat and rows ashore, the sturdy oarsman can only tell you it is 'the big ship.' If you question Jack, whom you see coming along the road laden with a green parrot and a bundle of yams, as to what they are doing here, he will eye the huge mass for a moment and reply with a vacant negative. Even those who are informed of its purpose doubt and argue respecting it. 'Look'ee here,' said an old salt to us pointing with his pipe to the stem and the stern of the ship, which lie parallel with the river, 'here's her starn, and here's her stem, and here's the water; and how they are going to launch her I can't figure noways.'

The great ship, or Great Eastern, as she is sometimes called, projected by the eminent engineer Mr. Brunnel, the father of transatlantic steam navigation, although building in the midst of the largest collection of seafaring people in the world, stands a wonder and a puzzle to them all. And, indeed, the moment you are inside the works of Scott, Russel & Co., at Millwall, you feel the reason of the strange eye with which the maritime population view the monster which is slowly growing up and overshadowing not only the ship yard itself, but the portion of the new town immediately in its neighborhood. Where are the merry ship carpenters, caulking away with monotonous, dead sounding blow? Where are the artizans chipping with their adzes, rearing up one after another huge ribs, and laying the massive keel? Where are the bright augurs gleaming in the sun, as sturdy arms work out the bolt holes?

None of these old accustomed sights and sounds of ship building are to be found; but in their place we see the arm of steam, mightier than that of Thor, wielding some iron shaft big as 'the mast of some huge admiral,' or punching inch plates of iron as quickly and as noiselessly as a lady punches card board for a fancy fair ornament.

Steel, urged by the same potent master, is seen showing its mastery over iron as the huge lathes revolve, or the planing machine pursues steadily its resistless course, whilst, in place of the shavings of the carpenter, long ringlets of dull grey metal cumber the ground. The ship carpenter is transmuted into a brawny smith, and the civil engineer takes the place of the marine architect.

A closer inspection of this Leviathan vessel shows us how completely the employment of a new material has necessitated new ideas with respect to construction. She runs along, or rather will—for she is not yet quite up in frame—some seven hundred feet; those portions of her yet unfinished at stem and stern show her partitions or bulkheads running nearly sixty feet in height, and standing just sixty feet apart. If we examine the outer walls of these huge partitions, we see at once that the ship has no ribs springing from a keel or back bone—none of the ordinary framework by which her bulging sides are maintained in their places, but, on closer inspection, it is found that she has a system of ribs or webs, longitudinal instead of transverse, running from stem to stern of the ship, up to eight feet above her deep water line; and riveted on each side of these thirty-two webs or ribs, which are again subdivided at convenient lengths, are plates of iron three quarters of an inch in thickness, forming a double skin to the ship, or a dermis and epidermis. Thus her framework forms a system of cells, which, like the Manai tube, combines the minimum of weight with the maximum of strength. A glance at the tranverse midship section will show at once this portion of her structure.

Hitherto it has been the practice to build iron ships in exactly the same manner as regards framework as wooden ones; that is, the strength of the sides has been made gradually to lighten towards the deck, which being of wood, can offer but slight resisting power. Thus iron ships of the old method of construction are peculiarly liable to break their backs upon the application of force, either to their two ends or to the center of their keels, just, in short, as a tube would be easily broken, one side of which was made much stronger than the other.

The Birkenhead iron troop-ship was a melancholy instance of this unscientific method of construction; for it will be remembered that immediately she struck, her wooden deck doubled up and snapped in two, as a stick would snap across the knee, while stem and stern reared for a moment high in the air, and then went down like stones into the deep.

As you stand watching the process of building up this double skin, or framework of the ship, the question immediately strikes the mind, how are these unyielding plates of inch iron made to accommodate themselves to her lines, which are seen to run as finely fore and aft as those of a Thames wager boat? How are the innumerable curves which die away into each other to be produced by any aggregation of rectilinear pieces of flat boiler plate? In ordinary wooden ships, the planking, by its elasticity, allows itself to be modelled to the ribs; but here there are no ribs, in the true sense of the word, and the form of the vessel must depend upon the inclination given to each separate piece of iron before the fastening process is commenced. And such, in fact, is the case. Every individual plate, before being fixed in its proper position, was the subject of a separate study to the engineer.

Of the ten thousand, or thereabout, that compose the framework of the ship, only a few situated in the midship section are alike either in size or in curve. For each a model in wood, or 'template,' as it is technically called, had originally to be made, and by these patterns the plates were cut into their required shapes by the huge steam shears, in exactly the same manner as the tailor cuts out the various portions of a garment. The 'list,' or inclination to be given to each plate, is the next process to be gone through; and this is produced by passing it through a system of rollers, which can be so reserved in their action, and so adjusted, as to give it any required curve. The 'template,' studded with holes around its margin, is then fitted to it, and a boy with a stick dipped in white lead marks through them the places upon the iron where the rivet holes are to be punched; when this last process is completed, the plate is lettered with two or three separate letters, indicating the precise place it has to take in the ship.

Thus the hull is first carefully thought out in detail, and is then regularly and mechanically put together, in much the same way as a tesselated pavement.

The process of fastening the plates affords another curious contrast to the old method of bolting employed by the ship carpenters. The holes in the places to be held together being brought in exact apposition, bolts at a white heat are one by one introduced, and firmly riveted whilst in that condition by a group of three men, one the upholder who holds the bolt in its position by placing a hammer against its head on the inside of the ship, whilst two sturdy Vulcans, with alternate blows, produce the rivet head on the other. The bolts contract in cooling, and draw the plates together with the force of a vice, and hold them so forever afterwards. The rapidity with which this process is performed strikes the spectator with astonishment. A set of three men, and a boy to shovel the hot bolts out of the furnace, will in the course of a day close up four hundred rivets; and speed in the process is requisite, when we remember that before the ship can swim three million of them must be made secure.

If we clamber up the ladders which lead to her deck, some 60 feet above the ground, we perceive that her interior presents fully as strange a contrast to other vessels as the construction of her hull does.

Ten perfectly water tight bulkheads, placed 60 feet apart, having no openings whatever lower than the second deck, divide the ship transversely; whilst two longitudinal walls of iron, 36 feet apart, traverse 350 feet of the length of the ship. Thus the interior is divided, like the sides, into a system of cells or boxes. Besides these main divisions, there are a great number of sub-compartments beneath the lowest deck, devoted to the boiler rooms, engine rooms, coal and cargo, &c.; whilst some 40 or 50 feet of her stem and stern are rendered almost as rigid as so much solid iron by being divided by iron decks from bulwark to keel. Her upper deck is double, and is also composed of a system of cells formed by plates and angle irons. By this multiplication of rectilinear compartments, the ship is made almost as strong as if she were of solid iron, whilst, by the same system of construction, she is rendered as light and as indestructible, comparatively speaking, as a piece of bamboo.

There is a separate principle of life in every distinct portion, and she could not well be destroyed even if broken into two or three pieces, since the fragments, like those of a divided worm, would be able to sustain an independent existence.

A better idea perhaps of the interior of the ship can be gained at the present moment than when she has progressed farther towards completion. As you traverse her mighty deck, flush from stem to stern, the great compartments made by the traverse and longitudinal bulkheads, or parti-walls of iron, appear in the shape of a series of parallelograms, sixty feet in length by thirty-six in width; numerous doors in the walls of these yawning openings at once reveal that it is here that the hotels of the steamship will be located.

If we were to take the row of houses belonging to Mr. Mivart and drop them down one gulf, take 'Farrance's' and drop it down the second, take Morley's at Charring Cross and fit it into a third, and adjust the Great Western Hotel at Paddington and the Great Northern at King's Cross into apertures four and five, we should get some faint idea of the nature of the accomodation 'The Great Eastern' will afford. We speak of dropping hotels down these holes, because the separate compartments will be as distinct from each other as so many different houses; each will have its splendid saloons, upper and lower, of 60 feet in length; its bedrooms or cabins, its kitchen and its bar; and the passengers will no more be able to walk from the one to the other than the inhabitants of one house in Westbourne terrace could communicate through the parti-walls with their next door neighbors.

The only process by which visiting can be carried on will be by means of the upper deck or main thoroughfare of the ship. Nor are we using figures of speech when we compare the space which is contained in the new ship to the united accommodation afforded by several of the largest hotels in London. She is destined to carry 800 first class, 2,000 second class, and 1,200 third class passengers, independently of the ship's complement, making a total of 4,000 guests.

A reference to the longitudinal and transverse sections will explain her internal economy more readily than words. The series of saloons, together with the sleeping apartments, extending over 350 feet, are located in the middle instead of aft, according to the usual arrangement. The advantage of this disposition of the hotel department must be evident to all those who have been to sea and know the advantage of a snug berth as near as possible to the center of the ship, where its transverse and longitudinal axes meet, and where of course there is no motion at all.

It will be observed that the passengers are placed immediately above the boilers and engines: but the latter are completely shut off from the living freight by a strongly arched roof of iron, above which, and below the lowest iron deck, the coal will be stowed, and will prevent all sound and vibration from penetrating to the inhabitants in the upper stories. As the engine and boiler rooms are separated from each other by bulkheads, in exactly the same manner as the saloons, a peculiar arrangement has been made to connect their machinery without interfering with their water-tight character. Two tunnels, of a sufficient size to give free passage to the engineers, are constructed fore and aft in the center of the coal bunkers, through all the great iron parti-walls. By this arrangement the steam and water pipes which give life and motion to the ship will be enabled to traverse her great divisions, just as the aortu traverses in its sheath the human diaphragm.

Let us return, however, for a few moments to the deck, in order to give the reader a clear idea of the magnitude of the structure under our feet. The exact dimensions over all are 692 feet. There are few persons who will thoroughly comprehend the capacity of these figures. Neither Grosvenor nor Belgrave Square could take the Great Eastern in; Berkley Square would barely admit her in its long dimension, and when rigged, not at all, for her mizen-boom would project some little way up Davies street, whilst her bowsprit, if she had one, would hang a long way over the Marquis of Lansdowne's garden. In short, she is the eighth of a mile in length, and her passengers will never be able to complain of being 'cooped up,' as four turns up and down her deck will afford them a mile's walk.

Her width is equally astonishing. From side to side of her hull she measures 83 feet, the width of Pall Mall; but across the paddle boxes her breadth is 114 feet—that is, she could just steam up Portland place scraping with her paddles the houses on either side. With the exception of the sky-lights and openings for ventilating the lower saloons, her deck is flush fore and aft.

However splendid this promenade might appear with respect to those of other ships, we question if it is at all too large for the moving town to whose use it is dedicated. Room must be found for the holiday strolling of between three and four thousand persons, whilst she is careering through the heated atmosphere of the trophics, and not merely for a few score blue nosed gentlemen, such as use the deck of the trans-Atlantic steamers for a severe exercising ground.

The manner in which this moving city, rather than ship, will be propelled with the speed of a locomotive through the ocean, is not the least noticeable of the arrangements connected with her. Mr. Brunnel has, we think wisely, decided not to trust so precious a human freight and so vast an amount of valuable cargo to any single propelling power, but has supplied her with three —the screw, the paddle and the sail.

Her paddle wheels, 56 feet in diameter, or considerably larger than the circus at Astley's will be propelled by four engines, the cylinders of which are 6 feet 2 inches in diameter, and the stroke 14 feet. The motive power of these will be generated by four boilers. Enormous as are these engines, having a nominal power of 1,000 horses, and standing nearly 50 feet high, they will be far inferior to those devoted to the screw. These the largest ever constructed for marine purposes, will be supplied with steam by six boilers, working to a force of 1,600 horses—the real strength of the combined engines being equal to 3,000 horses.

When the spectator looks upon the ponderous shaft of metal, 160 feet in length and 60 tons in weight, destined to move the screw, and the screw itself of 24 feet in diameter, the four fans of which, as they lie on the ground, remind him of the bladebones of some huge animal of the pre-Adamite world, he better comprehends the gigantic nature of the labor to be done, and the ample means taken to perform it. As the screw and the paddles will both be working at the same time, the ship will be pulled and pushed in its course like an invalid in a Bath chair, and each power will be called upon to do its best.

The calculated speed of the ship under steam is expected to average from fifteen to sixteen knots, or nearly twenty miles an hour. We all know, even on a calm day, what a wind meets the face looking out of a railway train going at that pace, and consequently it can be understood that sails, except on extraordinary occasions, would act rather as an impediment than as an assistance to the ship's progress. It is not probable, therefore, that they will not be much resorted to, except for the purpose of steadying or of helping to steer her. In case however, of a strong wind arising, going more than twenty-five miles an hour in the direction of her course, she is provided wih seven masts, two of which are square-rigged, and the whole spreading 6,500 square yards of canvas.

It will be observed by the diagram that she carries no bowsprit, and has no sprit sail. We do not know the reason of this departure from the ordinary rig, unless it be to avoid her ploughing too deeply in the sea. Her bow is also without a figurehead; and this peculiarity, together with her simple rig, gives her the appearance of a child's toy boat. If beauty is nothing more than fitness, this form of bow is undoubtedly the most beautiful, and the Americans, who have long adopted it in their trans-Atlantic steamers, are right; but to ordinary eyes it looks sadly inferior to the old figurehead projecting out before the ship, as if eager to lead her onward over the wave.

Fewer hands will be required to navigate the Great Western than her size would seem to demand. Her whole crew will not exceed 400 men —a third of the number composing the crew of a three-decker. The difference is made up by what we may term steam sailors. There will be four auxiliary engines appointed to do the heavy work of the ship, such as heaving the anchors, pumping, and hoisting the sails, for the gigantic arm of steam will be imperatively called for to deal with the vast masses of iron and canvas required to move and hold the ship. These engines will in all probability, communicate their power to a shaft running through an aperture in the upper iron deck, by which arrangement motive power in any required quantity will be laid on from stem to stern of the ship.

It is obvious that some special means must be adopted to direct this vast mass of moving iron as she flies on her course, threatening by her speed destruction to herself and whatever may cross her path in the great highway of nations. The usual contrivance will not apply. No speaking trumpets, for instance, could make the captain on the bridge heard either by the helmsman, or the lookout at the bow, more than three hundred feet away. Even the engineer, sixty feet beneath him, would be beyond the reach of his voice. As in the railway, we have to deal with distances which necessitate the use of a telegraph, and the Great Western, in this respect, will be treated just like a railway.

On ordinary occasions a semaphore will, in the daytime, give the word to the helmsman, whilst at night, and in foggy weather, he will be signalized how to steer by a system of colored lights. The electric telegraph will also be employed to communicate the captain's orders to him and to the engineer below.

Thus the nervous system, if we may so term it, of the vessel will be provided for. Starting from the bridge, or post of the commander, which leads directly from his apartments, located between the paddle boxes, as shown by the square space figured within the circle in the diagram, the fine filaments will be extended to the helmsman at the stern and to the look-out at the bow, whilst a third thread will communicate with the engineer. By this means the captain, or brain of the ship, will be able in a moment to put in motion, to drive at full speed, to reverse the action, or to stop the iron limbs which toil day and night far out of sight in the deep hold, or as instantly to direct the helm so as to alter the vessel's course.

In most iron vessels great precautions are taken to avoid the incorrectness to which the needle placed on deck is liable on account of the proximity of attractive masses of metal. The commonest expedient is to have placed high up in the mizzenmast, beyond the influence of the iron sides of the ship, what is called a standard compass, and which may be said to realize Dibdin's 'Sweet little cherub who sits up aloft, and takes care of the life of poor Jack.' In the Great Eastern, a special stage or framework will be erected for this dainty Ariel, at least forty feet in height, and the helmsman will probably either read off the points from above as they appear through a transparent card illuminated like a clock front, or the shadow of the trembling needle will be projected down a long pipe upon a card below, so as to avoid the necessity of the helmsman looking up, and so obviate the difficulty which would occur in foggy weather.

The experiments with respect to this important adjunct to the ship are not yet concluded, however, and we must be considered to speak speculatively as to the plan which is likely to be adopted.

The anchors of this mighty steamer would, with their accessories, alone form the cargo of a good-sized ship. The ten anchors with which she will be fitted, together with their stocks, will weigh fifty-five tons. If we add to this ninety-eight tons for her eight hundred fathoms of chain-cable, and one hundred tons for her capstans and warps, we shall have a total weight of two hundred and fifty-three tons of material dedicated to the sole purpose of making fast the ship.

It was prophesied that Mr. Brunel's first ship, the Great Western, would be doubled up as she rested upon the cresses of the Atlantic waves, and we all know how the prophecy was fulfilled.

When it was made, indeed, we were very much in the dark as to the size of ocean waves, and it was not until the introduction of long steamers, that they could be measured with any accuracy.

Dr. Scoresby, whilst crossing the Atlantic in one of the Cunard boats, some years since, closely observed the waves, and by means of the known length of the ship, was enabled to form a pretty accurate idea of their dimensions.

The old vague account of their being 'mountains high' was well known before that time to be an exaggeration; but we do not think even philosophers were prepared for the statement made by this observer at a meeting, some years since, of the British Association, that they