averaged no more than twenty feet in altitude, and rarely exeeeded twenty-eight feet. The popular impression principally produced by marine painters that waves formed valleys thousands of yards across, down the sides of which ships slid as though they were about to be engulfed, seems to have been equally erroneous; as the maximum length of ocean waves, according to Dr. Scoresby, is six hundred feet, whilst in a moderate gale they are only three hundred, and in a fresh sea about a hundred and twenty feet in length.

A moment's consideration of these facts leads to the conclusion that long ships must have a great advantage over short ones with respect to the rapidity with which they make their journey, as it is quite evident that whilst the latter have to perform their voyages by making a series of short curves—much to the impediment of their progress and to the discomfort of their inmates—the former, by ruling the waves with their commanding proportions, make shorter and smoother passages.

As steamers grow larger and larger the curse of sea sickness must therefore gradually diminish.

The Great Eastern, from her length and the bearing which she will have upon the water, being a paddle as well as a screw ship, will, in all probability, neither pitch nor roll, and will therefore be most comfortable to the voyager. Her immense stride, if we may use the term, will enable her to take three of the three hundred feet waves of an Atlantic gale as easily as a racer would take a moderate sized brook.

She will still have to encounter the six hundred feet waves of storms, and there may be those mistrusting her length and the great weight she will carry amidships, in the shape of engines and coal, who may be inclined to repeat with respect to her the prophecy which was made with respect to the Great Western.

Mr. Brunel, by the method of launching which he intends to adopt, will, however, set these misgivings at rest before she even touches the water. Although the total weight of the ship, together with her engines, which will be erected in her whilst she is still on land, cannot be less than twelve thousand tons, she will rest entirely on two points as she enters the water broadside on. No statement could give a more powerful idea of the strength of her fabric.

The reasons which have induced Mr. Brunel to adopt this method of launching are given as follows in his report:—

'Launching is generally affected by building the ship on an inclined plane, which experience has determined should be an inclination of about 1 in 12 to 1 in 15, the keel of the ship being laid at that angle and the keel consequently raised above the stern say 4-15th of the whole length of the ship.

In the present case this would have involved raised the first part of the keel or the forefoot about forty feet in the air, and the forecastle would have been nearly 100 feet from the ground, the whole vessel would have been on an average twenty-two feet higher than if built on an even keel.

The inconvenience and cost of building at such a great height above ground may be easily imagined, but another difficulty presented itself which almost amounted to an impossibility, and which has been sensibly felt with the larger vessels hitherto launched, and will probably, ere long, prevent launching longitudinally vessels of great length.

The angle required for the inclined plane to ensure the vessel moving by gravity, being, say 1 in 14, or even, if diminished by improved construction in ways to 1 in 25, is such, that the end first immersed would become waterborne or would require a very great depth of water before the forepart of the ship would even reach the water's edge.

Vessels of 450 or 500 feet in length would be difficult to launch in the Thames, unless kept as light as possible, but our ship could not be so launched, the keel of the sternpost being required to be, as I before said, about forty feet below the level of the forefoot; some mitigation of the difficulty might be obtained by an improved construction of the ways; but the great length of ways to be carried out into the river would, under any circumstances, be a serious difficulty.

These considerations led me to examine into the practicability of launching or lowering the vessel sideways; and I found that such a mode would be attended with every advantage, and, so far as I can see, it involves countervailing disadvantages. This plan has been accordingly determined upon, and the vessel is building parallel to the river, and in such a position as to admit of the easy construction of an inclined plane at the proper angle down to low water mark.

In constructing the foundation of the floor on which the ship is being built, provision is made at two points to ensure sufficient strength to bear the whole weight of the ship when completed. At these two points, when the launching has to be effected, two cradles will be introduced, and the whole will probably be lowered down gradually to low water mark, whence, on the ensuing tide, the vessel will be floated off. The operation may thus be performed as slowly as may be found convenient; or if upon further consideration, more rapid launching should be thought preferable, it may be adopted.'

Astonishing as are all the proportions of this monster ship, of course it will not be supposed that mere size is claimed, either by the engineer or the compeny to which she begins, as any merit independently of the substantial benefits which accompany it.

Her length is not her only advantage. Indeed, length in a steamer is merely a comparative term, and applies entirely to the extent of the river or ocean path she has to traverse.

The Himalaya, for instance, would be an enormous vessel to run to Margate and back, but is only a full size one to cross the Atlantic or to navigate the Mediterranean. The Great Eastern, again, would be large for the passage to New York, but is only duly proportioned for a voyage round the world.

It is interesting to note the progressive advance of size in steam vessels that has taken place within the last thirty years, which the diagram, together with the following table, will render clear to the reader:—

Date.	Name and Description.	L'gth Feet.	Breadth Ft.	In.
1825	Enterprise, built expressly to go to India, coaling at intermediate stations,	122	27	0
1834	Tagus, for the Mediterranean,	182	28	0
1838	Great Western, first ship built expressly for Atlantic passage,	236	35	6
1844	Great Britain, first large screw ship, and the largest iron ship then projected,	322	51	0
1853	Himalaya, iron ship for the Mediterranean,	370	43	6
1856	Persia, iron ship,	390	45	0
——	Eastern steamship, iron,	680	83	0

Thus the ocean going steamer of 1856 is nearly six times the length of that of 1825, whilst the difference between their tonnage is still more in favor of the last built vessel.—The augmentation has gone on in an increasing ratio, and if it is still to continue, we wonder over what space of water our leviathan of 1870 will extend.

As our commercial steam marine is in the hands of shrewd men of business, it can well be imagined that the reasons for this progressive advance in size are sound. Steam shipbuilders are, in fact, only accommodating the tonnage of their vessels to the length of the voyages they have to perform, so that they may be enabled to carry their own coals over and above their due proportion of cargo. This the Geeat Western did, and succeeded; this the various screw steamers which have run the Australian voyage have not done, and consequently they have failed.

No one can fail to have observed that within these last two years, steam, in long voyages, has apparently suffered a defeat. Clippers of all kinds, Marco Polos, Red Jacket, and Morning Stars, seem to have recovered their own again, and in the race round the world, sails have distanced the paddle and the screw.

When the question comes to be examined, however, it is clear that it is the want of steam that has caused the failure. Vessels, in short, are little fitted to make a passage of thirteen thousand miles, as the Sirius, though by a lucky accident it managed to cross the Atlantic at the same time as the Great Western, was to go a continuous stage of three thousand miles. They have all the expense of the new motive power without its full advantages, and, in consequence of their having to go out of their direct course to coal, they lose from twelve to twenty days on the passage. The tortoise, in this instance, has not fairly beaten the hare, because the latter has willfully broken her leg.

Mr. Brunel, in constructing a ship of such large dimensions, is only doing for the long Eastern voyage what he did for the shorter Western one, namely, making her own coal bunkers the bank on which she can draw to any extent during her progress out and home, instead of employing from six to eight ships of 500 tons burthen each to carry fuel for her over half the globe, as the vessels at present running are obliged to do; a system which may be likened to the extravagance of a man who employs half-a-dozen porters to carry parcels, which, by proper management, he could manage to stow in his own knapsack.

The report of the directors for the year 1853 puts the calculation, with respect to her immense advantage, in carrying power so well, that we quote it entire:—

'In avoiding the delay of coaling on the voyage, your ships will also escape the great cost of taking coal at a foreign station. Coals obtained on the Indian and Australian route, cost on the average, including waste and deterioration, four or five times as much per tonage as in this country. But your ships will take their whole amount of coal for the voyage from near the pit's mouth, at a rate not exceeding for the best quality, 12s. to 14s. per ton.

On the voyage of existing steam vessels to Australia or India and home, the consumption amounts to from 4,000 to 6,000 tons; the cost of which would supply 15 to 20,000 tons if taken on board at some port in immediate communication with the coal field.

Each of the company's ships will carry, besides their own coal, upwards of 5,000 tons measurement of merchandise, and will have 800 cabins for passengers of the highest class, with ample space for troops and lower class passengers. These you will not only be able to carry at rates much smaller, than those by any existing steamships, but with an unprecedented amount of room, comfort and convenience.

In thus determining the size of the ships, your directors believe that they are also obtaining the elements of a speed heretofore unknown; and if hereafter coal applicable to the purposes of steam can be supplied from the mines of Australia, the carrying capacity both for cargo and passengers will be proportionably increased. The great length of these ships will undoubtedly, according to all present experience, enable them to pass through the water at a velocity of at least fifteen knots an hour, with a smaller power in proportion to their tonnage than ordinary vessels now require to make ten knots.

Speed is, in fact, another result of great size. It is belived that by this speed, combined with the absence of stoppages, the voyage between England and India, by the Cape, will be reduced to from thirty to thirty-three days, and between England and Australia to thirty-three or thirty-six days.

It may be objected that the route by way of Egypt, now that the railway is in progress and a canal is projected, will prove a too powerful competitor for the traffic round the Cape; but independently of the inconvenience and tediousness of embarking and then re-embarking, which will be fatal to vessels containing such bulky cargoes as cumber the Autralian steamers, it is asserted that the ocean path is the direct route to the focus of Australian connection with Europe. Thus the navigable distances from Land's End to Port Philip are as follows:—

	Miles.
Via the Cape of Good Hope -	11,819
Cape Horn - - - -	12,700
Gibraltar, Malta, Alexandria, Aden, Point de Galle, and Singapore, including transit through Egypt	12,034
Panama, including transit across the Isthmus - - - - - -	12,678

The general association for the Australian colonies have indeed recommended for the mail line the overland route as far as Aden, and from thence by way of Diego Garcia and King George's Sound to Melbourne, an estimated distance of 10,348 miles, which they fancy can be done in 44 days.

If the Eastern Steam Ship Company have not anticipated too great a speed for their vessel—and we scarcely think they have done so, considering that the Persia has made fourteen and a half knots with very far inferior powers of propulsion—this passage will be beaten by between eight and ten days without the expense and trouble of making a long land journey across the isthmus. Surely this, if it comes to pass, will go far to accomplish the Alnaschar dream of the Times, that the period will arrive when we shall be able to communicate with our friends at the antipodes in a month.

As far as the commercial part of the speculation goes, we are of course incapable of giving an opinion. The value of the exports to the young empire, which is springing up with such rapidity in Polynesia, is, however, so great—in 1853 the declared value being £14,506,532—that we cannot conceive there would be any lack of cargo even for our leviathan. That she will be par excellence the emigrant ship, who can doubt, when we find that, with all her splendid accommodation, she will be able to take passengers of the first class for £65, of the second class for £35, and of the third class for £25?

Her great proportions will indeed almost deceive her passengers into the idea that they are sojourning in some noble mansion. Let us imagine her saloons blazing at night with gas, which will be manufactured on board and supplied to every part of the ship; let us picture to ourselves her magnificent sweep of deck filled with gay promenaders, listening to the band as she sails over a summer's sea; annoyed by no smoke, for, in consequence of the use of anthracite coal, none will be emitted from her five funnels; and distressed by no motion, as in consequence of her length she will stride with ease over the waves of the Pacific.

We might also dwell for a moment upon the mighty larder of our leviathan prepared for her flight of five and thirty days, without a stoppage, across the ocean desert with a whole town on board; or we might draw a comparison between her and the Ark (which by-the-by had not half her capacity), as she receives on board her flocks and herds to furnish fresh meat for the passage.

But we believe we have said enough to enable those who have not visited the rising edifice to realise the vast extent of this latest experiment in ship building. And as a contrast to this fair side of the medal, let us fancy her rushing through the night in full career—an arrow 27,000 tons in weight, propelled by a bow of 3,000 horse power. Can we, without a shudder, contemplate the possibility of a collision with such a resistless force?—a line of battle ship with a thousand hands on board cleft in two as swiftly as the apple by the shaft of Tell.

Every precaution will indeed be taken to avert such a catastrophe. The electric light will be fixed at the mast-head, so that in dark nights the ship will carry a moonlight atmosphere wherever she goes. In case of any fatal injury to herself, which could not well happen, boats have been provided capable of taking off her passengers, even if counted by thousands. Thus she will have two screw steamers of 90 feet in length, a paddle box boat, and in addition to these she will carry a large number of the new collapsing, or bellows boats, as the sailors call them.

These curious structures, the invention of the Rev. E. L. Berthon, expand and shut like a Gibus hat or the hood of a carriage, occupying so little room that half a dozen of them of a large size can be stowed away in the same space as would be occupied by an ordinary jolly boat, and seem to be as easily opened as a parasol or umbrella.

If we mistake not, the success of the Great Eastern will constitute a new era in the art of aggressive war. We question whether Europe during the course of the present contest has not been more struck by our enormous power of moving suddenly large masses of men from one end of Europe to another, than by any other operation which we have performed.

The Himalaya, as she steamed up the Bosphorus, filled the lazy Turks with astonishment; and the cloud of steamers and sailing vessels which carried the allied army to the shores of the Crimea, has been dwelt upon as an exposition of maritime magnificence such as the world never witnessed before. What will the reader say when we tell him that five vessels such as the Great Eastern could bring home our 50,000 troops from the Crimea, with all their artillery and baggage, in the course of ten or twelve days?

Geography.—A class in geography was called. It consisted of seven boys and girls, whose names were, as we learned during the recitation, Thomas, Lucy, Huldah, Horatio, Sidney, Austin, and Amanda. They were reciting about Europe, and the questions and answers were as follows:—

'Thomas, what is said of Europe?'

'It-it-it-is——stammered the boy,

'the small——,' prompted the teacher,

'est division of the globe,' continued Thomas.

'Grand division, you mean, do you not?' said the teacher patronizingly.

'Yes, sir,' replied the boy confidently.

'That's right,' returned the master. 'Now, Lucy, for what is it noted?'

It's noted for-for-for——,' replied the girl,

'being the most'—the teacher went on with the sentence,

'civilized and-and-and'—evidently Lucy's memory was completely exhausted; so the teacher continued,

'the most popu——,'

'lous, in proportion to its extent, of any of the divisions of the globe,' said Lucy briskly, now helped completely beyond embarrassment.

'Right. 'Now Huldah, what is said of its climate?' said the schoolmaster, with some tenderness in this manner.

'It-it-it-is-is——' began the girl,

'The western part is milder——,' suggested the teacher.

'That answer is in fine print, and we were not to learn the fine print,' cried a half-dozen voices.

'Right; I forgot, said he. 'We'll try the map questions. What ocean on the north?'

'Northern!' said the scholar promptly.

'Arc——' the teacher said, shaking his head.

'Arctic!' shouted Huldah, in a hurry to correct herself.

'Horatio, what seas and mountains on the south?' was the next question.

Horatio began cautiously. 'Afric——,' but here he was arrested by a frown from the teacher.

Medit——,' was the kind teacher's aid.

'Mediterranean, Black, Az——,' said the boy, and a frown brings him up again.

'The mountains, now,' said the master.

'Cau——.'

'Caucasus!' said Horatio, catching the name.

'Right. What river, mountains, and sea on the east, Sidney?' was the next question.

'Volga,' said the pupil, when the frown again stopped him.

U-Ur —— drawled out the questioner and prompter.

'Ural Mountains, Ural River, and——,' said Sidney, hesitating again.

'Casp——' said the teacher.

'ian Sea!' shouted the boy.

'Good. What ocean on the west, Austin?'

'Atlantic,' was now the prompt reply.

'Amanda, where is the White Sea?' said he.

She replied, hesitating, 'In-the in-the in-the ——,'

'Nor——,' was the ready suggestion.

'North of Asia,' said Amanda, with confidence.

'Why, you are reciting about Europe,' said the man with vexation.

'North of Europe,' said the girl, correcting herself.

This was once round the class with a question apiece, and was an exact specimen of the manner in which the poor scholars were taught. The teacher asked the questions, having first designated who should answer, and then when there was the least hesitation he prompted them, giving them the half or the whole of the first word, and allowing them to commence exactly where he left off and finish the word or sentence, as the case might be. And the result was, as might have been expected, the scholars could no more go on with a recitation without this constant prompting than a cripple can walk without his accustomed crutches. —[Rhode Island Schoolmaster.

A Curious Error.—Professor French in his work on the English language, says the words 'strain at a gnat and swallow a camel,' contained in the 23rd chapter of Matthew, should be 'strain out a gnat, &c.' This, he says, is the correct version of the original, as appears in Tyndale's and Cranmer's translations, both of which have 'strain out.'

It was the custom of the stricter Jews to strain their wine, vinegar, &c., through linen or gauze, lest unawares they should drink down some little, unclean insect, as a gnat, and thus transgress the Levitical law.

The Belles of Japan.—The young women, says Spalding, in his work on Japan, with their elaborate arrangements of hair, though rather ungainly in gait, owing to the use of clogs, and wearing about the hips an awkward compressing scarf, are quite good looking, and with lighter complexions, have also much better eyes than the Chinese. On marrying, they shave off their eye-brows, and blacken their teeth with some iron rust and acid, as a badge of the marital state—from which they become most repulsive.

Unaccountable Result.—If you take a common tuning-fork, and hold it near the ear, in a line perpendicular to the horizon; and while it is made to vibrate turn it slowly on its axis, the following phenomenon will take place: the sound will decrease during the revolution, until, for an instant, there is perfect silence, and as the revolution proceeds, the sound will gradually increase, and be as full as at first.