MISCELLANEOUS.

Foreign Correspondence of the Scientific American.

The "Arabia," and Cunard Steamships.

LIVERPOOL, FEB. 8th, 1853.

MR. EDITOR—Having just made the voyage from New York to Liverpool in the bran-new steamship "Arabia," lately built by the Cunard Company for the express purpose of beating all creation—Brother Jonathan in particular—perhaps some of your readers will be interested in a few particulars relative to the vessel, her performances &c.

The Arabia's speed, on her trial trip, was reported to have been very great, which gave rise to a general belief that she would prove herself the fastest steamer afloat. She left Liverpool, on her first voyage to New York, Jan. 1st; encountering strong head winds for several successive days, her fuel gave out, and she was obliged to put into Halifax for a new supply. Stopping there for 19 hours she sailed again for New York, where she arrived Jan 16th, after a voyage of about 15 days, including the detention. The Collins' steamer Baltic, which sailed from Liverpool three days before the Arabia, occupied 13 days on the same voyage—without stopping at Halifax for coal.

On her late return voyage, the Arabia sailed from New York, Jan. 27th, and arrived here on the 6th, passage 10 days 3½ hours: the weather was of the most favorable description,—with a fair wind and smooth sea for nearly the whole distance, she had every opportunity of showing her powers of speed, and the result of the voyage undoubtedly exhibits it. It is not probable she will ever make a much quicker voyage. As a superior to the Collins' boats she is a dead failure, but as a specimen of naval and mechanical architecture she is unsurpassed by any vessel in commission. Her cost, £130,000 sterling ($650,000), shows that money was not wanting to make her perfect.

The Arabia is a vessel of 2500 tons burthen, with machinery of 1000 horse-power. Her engines were constructed by that great mechanician, Robert Napier, of Glasgow: they are side levers, and cost $370,000. The appearance of the engines, while in operation at sea, and the coaling at the furnaces below, possessed, for me, peculiar interest. Leaving the deck, and descending into the engine room, one seems to enter a new kingdom,—to have suddenly disembarked from the tossing ship. You enter a large apartment, about 40 feet long by 25 feet high, filled with machinery of ponderous proportions, all alive with motion, yet working with the utmost regularity. Descending to another landing you reach the central portions of the machinery, where, protected by a railing, you may pass around the room and leisurely survey the various parts of the mechanical giants as they labor before you. Further down you come to the furnace floor, and passing between the massive side levers, enter what at first sight seems to be a large ore-smelting establishment. Here are twenty-four great roaring furnaces, whose voracious mouths are constantly being stuffed with coal, and yet are never surfeited. Near the furnaces you pass through an iron door, into what appears to be a coal mine, excavated beneath the ground. All idea that you are still on board a ship, plowing through the waves, has utterly vanished. You are in a large and gloomy cavern where coal is mined. Flickering lights hung around in different parts reveal the miners, delving at their work,—some are digging, others carrying the coal away to the furnaces.

The immense pecuniary cost of running such a boat as the Arabia may be judged of, from the amount required for the supply of this one item—coal: she burns ninety tons per day, and carries thirteen hundred tons for a voyage.

The running expenses of each boat is not all that the Cunard Company is subject to in transporting their passengers: besides their docks and buildings at Jersey city, opposite New York, they have a much larger establishment at Liverpool, consisting of a foundry, wharves, and other works, employing altogether about one thousand men, and one or two river steamboats.

The rapidity with which one of these ocean steamers can be prepared for sea is remarkable. On arriving, the vessel is immediately boarded by a few of the small river boats, bringing coal, water, provisions, clean linen, &c. Nearly all the movable furniture of the Cunard steamers is duplicated, so that all the bedding, carpetting, &c., used on a voyage, is removed for renovation, and replaced by a fresh assortment. Within 36 hours after arriving, one of these ships could be cleared from top to bottom, supplied, and made ready for a new voyage.

The "Persia," another large Cunard steamer, to run to New York, is now building: she is to be constructed of iron, and to have a length of 350 feet. This is nearly 50 feet more than the length of any of the Collins' steamers; indeed, there is no steamer in the world of such dimensions, and if the Persia does not outstrip all rivals, it will be because John Bull is too dull or too old to learn.

A. B.

For the Scientific American

Flying.

This subject is one of great importance—an easy and safe mode for man to go through the air would be productive of immense changes in human society; and who can doubt that those changes would be beneficial.—Among them would probably come free trade, cheapness of food and clothing, extended geographical information, increased intercourse and dissemination of knowledge, amelioration of all despotic influences,—a contraction, as it were, of the whole earth,—bring all men more fully into communion with each other, and thereby promoting the arts and sciences, and the cause of freedom, with peace and good will among mankind. It may be that God has intended that man should never fly. Of this, however, we are very far from being sure: one thing is certain, which is, he never will fly unless he tries. Ten or a hundred unsuccessful attempts are insufficient to prove his inability so long as there is any reasonable ground on which to build a hope. As yet but little if any systematic or concerted effort has been made; now and then an individual, with small means perhaps, makes an experiment, but is soon discouraged. It may be he finds himself "on the wrong track," and gets nothing but sneers and laughter for his pains. Much the largest portion of men deem it folly to give the subject any serious thought; but the present age has shown "impossibilities" to be both possible and practicable. Why may not our ideas change in regard to flying? Let all men who think that they have one or more good thoughts relating to it publish the same; and if concerted measures, by means of associate bodies or otherwise, are applied in good earnest, success is pretty sure to follow. Why may it not be accomplished in the present age? To make a beginning, the writer of this article will cheerfully submit a proposition of his own. For many years he has believed that balloons must be in part, if not altogether, dispensed with: their great bulk will always make them the sport of the winds. Of dangerous and expensive materials, a bullet or a spark may easily destroy them, and the difficulty of alighting from them is very great.

As something which may answer the purpose, an arrangement as follows is proposed:

A Parachute of light and strong materials, made somewhat in the form of an open umbrella. The shaft which supports it to be firmly attached to the car or boat below; but in such a manner as to allow it to turn round easily without turning the boat. The machinery in the boat or car to give a rapid motion to the shaft, which, as it turns round, carries the Parachute around with it. Outside of the Parachute wings are to be firmly and immovably fixed, and braced in such a manner as to cause it—the Parachute and all connected with it—to rise in the air whenever it is turned in the proper direction, with sufficient rapidity.

The objects of the wings on the Parachute is merely to raise the apparatus and keep it suspended in the air. A few feet above the heads of the passengers, on each side of the car, are the propelling wings, fashioned, and somewhat like a single turn of a screw (many turns are worse than useless). By these propellers, which are supported from the car, and do not revolve around the shaft, the whole is made to go forward or backwards. In the engraving they are partly hid by the Parachute. The place for passengers may be a light car, or, as in the engraving, a boat. In mild weather the boat may alight and sail along upon the water, from which there would probably be but little difficulty in rising at pleasure. It may be advisable to place an oval screen or cover just above the passenger's heads, and even to enclose them entirely or in part, to shield them from winds and the sight of whirling motions. If left open on the sides such cover would also assist the Parachute in descending. The shaft should be a stout hollow tube, having a strong rope running through it, inside, from top to bottom, tense, and well fastened to it at each end, so that if the shaft at any time should break, the rope will still hold the Parachute and car together. The Parachute will let the car gently down to the earth if the machinery should stop, or the wings break. A hoop attached to it, inside, of some little weight, will stiffen it, and also answer the purpose of a fly-wheel. It may be braced, inside, somewhat like an umbrella, by supports so formed as to cut the air, and united firmly to the shaft at a point some distance down it, and just below that point a stout ring (in which the shaft must revolve, and which ring should bear upon an enlarged portion of the shaft), must be placed, from which ring stout rods should extend down to the sides of the boat or car. The boat being much the heaviest part of the apparatus, and firmly fixed below the centre, and parallel with the under part of the Parachute, it cannot upset while in the air. A slow revolution of the Parachute would let the car gently down. Some kinds of springs, if desirable, may be fitted to the bottom of the car or boat, so as to ease the jar of alighting. All once fairly up in the air, the Parachute would not require a continuance of very rapid motion, because the propelling wings, by their horizontal action, would help to sustain it, particularly when the rudder or tail caused the stern of the boat to be slightly lower than the forward part. Experience must show the proportionate sizes of the different parts, and also the best form, number, and position of the wings. The wings must force the air against the surrounding air, and not against any part of the apparatus, as that would injure the desired effect; and, where many are used, do not let all play in the same circle. The larger the circle or sweep of the wings, the less rapidity of the shaft is required. If on trial the car is found inclined to a revolving motion a long tail or rudder will probably prevent it. If not, many Parachutes, with their wings, may be placed along the car all worked by the same machinery. This will no doubt prevent such revolving motion, if any; but such arrangement for a perfectly safe balancing of the car is not so good as when but a single Parachute is used. Now the question is, what power shall be applied? Is there any motive power having in itself sufficient force and durability and yet not requiring too heavy materials to give it life and application? Experiment must decide this. If no such power is known who will find one? Possibly a crank, with proper gearing, in the hands of a man of good muscular strength, may be sufficient to enable one person thus to fly for a short distance. Use cog-wheels for the main shaft, bands and pulleys for the side propellers.

The writer has strong belief in the feasibility of this proposition, and would, with pleasure prosecute the subject further if it were not rather inconsistent with his other duties. He has only considered it as a leisure-hour amusement, hoping for useful results; and, being unwilling to cover the invention with letters Patent, though it is original with himself he opens it to others, and all men are freely at liberty to make and use it if they please. May we not reasonably expect to be able to say shortly and with truth:—

See the gay cars in safety fly
Majestically through the sky,
Now near the earth, now high in air,
Birdlike they're coursing everywhere.

New York. W. D. G.

[It is perfectly impossible for any man to move himself in the air by any known mechanical means, without being buoyed up by a gas much lighter than the atmosphere. One cubic foot of hydrogen, the lightest of all gases, will not buoy up an ounce weight. The atmosphere is composed of oxygen by weight 23; nitrogen, 77; their atomic weight, as related to hydrogen, are $(23\times8)+(77\times14)\div100=12\ 62$. There is also some carbonic acid gas in the atmosphere, but we may set it down at about 13 times lighter than hydrogen gas If one cubic foot of hydrogen cannot buoy up a one ounce weight, no man can force himself into the air by any machine, for if he could he would be able to jump over a mountain. Some new power must be discovered before we can fly—such a discovery may be near at hand; we would rejoice to behold it.

Miscellaneous News of the Week.

A lecture on Axial Forces was lately given at Sandusky, Ohio, by Dr. Bronson. The lecture was intended to popularize the modern atomic theory of matter, and account for all the phenomena of the material universe by changes in the polarity of the particles, and their consequent position relative to each other.

The "Manchester (England) Examiner" mentions having seen a specimen of cotton grown in Trinidad, by a planter who emigrated from the United States.

A joint stock company is advertised in London under the name of "The American and British Timber and Cotton Land Company," with a quarter of a million sterling, to trade on a tract of land situated near Darien, Geo., Shares a hundred dollars.

The City of Dublin Steam Packet Company have notified to Mr. Foy, United States Consul, that they will forward, free of charge, from Dublin to Liverpool, all goods and packages from Dublin and the surrounding district, for the New York Exhibition.

At Calcutta three thousand chests of indigo had been sold from 44 to 55 rupees higher than last year.

"A ten hour movement" for a limitation of factory labor to ten hours daily, is progressing in the manufacturing districts of England.

An effort is about to be made to create a continental depot of cotton irrespectively of Liverpool.

Vast beds of lead ore have been discovered in Sinking Valley, Blair Co., Pa.

There have been thirteen wrecks upon the reefs in the vicinity of Key West since the 1st of January.

The cost of putting the Michigan canal in order for 1853 is estimated at $6 500.

The Land Department has paid into the State Treasury, during the past year, $78,554.

A mint is to be established in Australia.

A workman was scalded to death by melted metal spilling over him, last week, at Mr. Rider's foundry, in this city.

Bills to amend the charter of the World's Fair Association, and to form a police force for the Building have been passed by the N. Y. Senate.

The varnishers and polishers of New York have had a mass meeting preparatory to a demand for an increase of wages.

An extension of Goodyear's india rubber patent has been refused by the Commissioner at Washington.

The air line railroad bill has been defeated in the N. J. Legislature.

The first exhibition of the Metropolitan Mechanics' Institute at Washington was opened on the 24th inst.

It has been decided at Baltimore that railroad companies are not liable for personal injuries where the same occur to passengers while standing on the platform of the cars, against the warnings of the conductor.