

## Scientific Museum.

### Late Eruption of Mount Vesuvius.

On the 6th day of last February, (1850) old Vesuvius, after many internal mutterings, which lasted about two weeks, began to send up sheets of lurid flame, and on the 7th the lava made its appearance, running down the mountains on the side of Torre Annunziata. The lava at a white heat bent its way in the direction of Pompeii, and during the night the scene was grand and terrible. On the nights of the 8th and 9th, the roaring and bellowing of the crater was appalling to the citizens of Naples. On the night of the 9th, about four hundred of the natives and foreigners (Americans, English, &c.) left in a special train for the place mentioned above, and then with guides to Bosco Reale to view the advancing lava. The government had previously sent forward strong bodies of troops, to preserve order and protect property. The sight that met the eye at that place was sublime. The lava presented a front of a mile and a half, and kept advancing slowly, devouring every thing in its way. From the villages and cottages the peasantry were flying from the devouring element, and the women and children rent the air with shrieks to San Gennaro, their patron saint. It was in vain—the lava drove them from their homes penniless. Above Bosco Reale, the lava (about 9 o'clock P. M.) took complete possession of a wood; and the trees fell in columns like the ranks of soldiers before a withering artillery. Some large trees offered their ponderous trunks to breast the hissing stream, but the resistance was but momentary, for the fiery fluid first consumed the lower parts, then they would explode and leap into the air, to be consumed to ashes on their descent. The large trees gave out hundreds of jets of steam from different places and those trees, which contained a great quantity of sap, were those which generally exploded, while those which were dry at their trunks, soon consumed there, then they bowed their heads and lay down in dignity on their fiery beds. At about 3 o'clock on the morning of the tenth, the eruption was at its height. The sky was clear, cold and starry, affording a contrast to the red rolling mountain. The rearings of the mountain were like the broad-sides of a three-decker, and the ground beneath the feet of visitors trembled and groaned in awful convulsions. There was a strong stone farm house situated a short distance from the village; when the lava came to it a stout resistance was offered, and it commenced to rise like water in the lock of a canal, pouring in through the windows and destroying it in a short time. The proprietor of it, together with his servants, instead of laboring to save as many of their effects as possible, yelled and tore their hair, preferring to howl to San Gennaro.

The lava next attacked a small church of Franciscan friars, embosomed in the wood. The edifice was solid, and seemed to breast bravely the stream, but as conscious of its irresistible power, the lava dashed to the attack, despite the chants of the friars and their heartfelt sorrow. The friars and parishioners were filled with grief to see the sacrilegious lava insinuate itself into the crypt and undermining its base; when it soon tottered and fell into the burning sea, the bells shrieking a doleful dirge as the belfry toppled into the sulphurous surges. Sometimes green flames would shoot athwart the advancing stream, then they would become deep blue, playing fearfully and grand, as the lurid sea of "Dante's Inferno." The crater threw up some huge and hissing rocks, one of which, several tons in weight, struck a brave but rash Polish officer, fracturing his thigh, and he being at a distance from any other person, bled to death. One of the most afflicting accidents was the death of Charles Carrol Bayard, U. S. Navy, and belonging to the squadron at Naples. With that daring peculiar to young Americans, he approached too near the crater, and received a mass of calcareous matter on the shoulder, which stripped the flesh to the bone down to the elbow. There was no fracture, but so long

a time elapsed before he received proper medical treatment, that all the skill exerted to save his life afterwards proved unavailing. He was only twenty-two years of age, amiable, handsome, and a general favorite. He held the position of the Commodore's naval aid-de-camp, and only a few nights before he was at a ball the gayest of the gay, his fine manly form making him "the observed of all observers." Many accidents occurred, but the two mentioned created the greatest sensation, and it will be long before the terrible events of this eruption are forgotten.

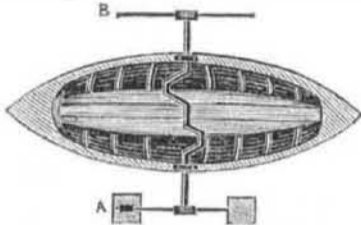
### History of Propellers and Steam Navigation.

(Continued from page 256.)

MR. EWBANK'S (COMMISSIONER OF PATENTS)

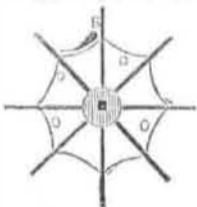
EXPERIMENTS.

FIG. 38.



Since part of the Report of the Commissioner of Patents was published, that part of it which relates to the "propulsion of steamers" has been visited by the most scourging criticism of "heroes great and heroes small." It is a dangerous thing for some to get elevated in this world, for there are a great many people who have a strong penchant of bringing themselves into notice by attacking those who are somewhat conspicuous. That this is true of the Report, spoken of, no one can doubt, for the same matter has been in print for a twelvemonth in the Franklin Journal, and not one has lifted up his voice and barked at it, until now. Owing to so much being said about this part of the Report, we hereby commence to publish the main features of it, a little out of our regular course, but is necessary at this time, and we shall reserve our

FIG. 39.



personal remarks respecting the merits of the ideas suggested in it for another and terminating article on the subject. The experiments referred to, were conducted on Harlem River, New York, in 1845 and 1848.

For this purpose, the boat, fig. 38, was employed. It was 12½ feet long, and 3½ feet across the middle. A wrought iron shaft, 1 inch square, with a crank, extended across the gunwales, and turned in bearings bolted to them. Each end of the shaft stretched 14 inches over the side of the boat, which prevented the wheels, that were secured on each extremity, from throwing as much water into the vessel as if they had been nearer; and afforded a better opportunity of observing the action of the blades. A person seated at one end of boat, readily turned the wheels in either direction, by alternately pushing from and pulling towards him, two upright rods, which moved in joints at the bottom of the boat, and were connected to the cranks by horizontal rods or pitmen.

FIG. 40.

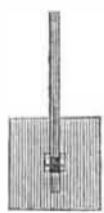
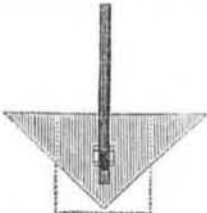


FIG. 41.



The wheels were very light, and of the simplest construction. One is figured at B. Eight slender arms, of 5-16 square iron, with their inner ends cast in the central piece, extended 20 inches from the centre, and thus made a 40-inch wheel. To stiffen them, and transmit any strain upon one to the whole, they were

braced tightly together by the wire, O O O, fig. 39, which was wound round each arm, and retained by slight notches at the corners. The various blades or paddles were cut out of stout sheet iron. Square sockets, to slide over the arms, were rivetted to the paddles, by which means they were readily adjusted and secured at uniform distance from the axes. All were of the same area—49 inches.

To test the qualities of the boat, and get her into working trim, blades, 7 inches square, fig. 4, were fixed on the arms of both wheels, and several excursions up and down the river, made with them. Their dip was 7 inches, or rather more, for their upper edges were half an inch below the surface. They were next removed from one wheel, and left on the other, as the standard by which to compare the effects of different shaped ones. They were distinguished as No. 1. Nearly all the rest were formed from them: i. e. by removing portions from one part, and adding them to others, as will be seen in the following diagrams. In this way there was no danger of making, through mistake, one set of blades, of larger, or of less, superficial surface, than others—since no calculation of their areas was required.

In all the figures, the paddles are supposed to sweep through the water in the position as represented, the lowest sides being those which descend lowest in the fluid.

Fig. 41 is formed by cutting off the lower angles of fig. 40, and transferring the pieces to the upper ones, making a right-angled triangle, with sides 10 inches, and hypotenuse 14. (By mistake the upper corners were cut away, so as to leave the area of these blades 48 square inches, instead of 49.) Eight of these were fixed on the wheel, (see B, fig. 31,) to compete with the same number of fig. 40, on A, both having 7½ inches dip.

It will be obvious that, as both sets were attached to the same shaft, if one proved more efficient than the other, the boat would be turned from a straight course, and be inclined, more or less abruptly, to the weaker, or less efficient set. The result was, that those marked fig. 40 overcame fig. 41, and though only in a small degree, yet quite sufficient to establish their superior effect on the vessel's progress.—As we were not always out of the influence of tides and slight breezes, each experiment embraced excursions in various directions on the river. Once or twice the boat went straight as an arrow, but eventually, the square paddles got the better of the triangular ones. These dipped into the water with little noise, and threw it off behind from their points.

Most of the experiments were made in smooth water, and, except slight currents—aqueous and aerial—under the most favorable circumstances. Two persons occupied the boat, and the greatest care was exercised in preserving the shaft in a horizontal position. When results were doubtful, the experiments were repeated, and, generally, several times.

### Antique Gold Mask.

At a late meeting of the Asiatic Society, London, the Director exhibited a golden mask which has been entrusted to him by the Court of Directors of the East India Company. The mask was found in an ancient coffin on the banks of the Euphrates, by Captain Lynch, one of the officers engaged in the Expedition which surveyed that river some years ago. It is formed of a thin sheet of pure gold, is of little size, and was apparently moulded from the face of the deceased occupant of the coffin in which it was found. The grave appeared to have been rifled at some former period; but the fear of pollution, and perhaps a superstitious respect for the dead body, had prevented the discovery of this curious relic; which was in close contact with it. The character of the face bears a considerable resemblance to that of the Assyrian portraits which are sculptured on the Ninevite monuments recently discovered; and the very few details we could gather respecting the accompaniments of the coffin, would seem to favor the belief that the mask is really the portrait of an illustrious Assyrian, buried more than twenty-six centuries ago.

### Strange Event.

A short time ago while the British brig Al-

cyone, from Glasgow, was off Cape Cod, while the men were aloft reefing the foretopsail, in the middle of a snow storm, a ball of fire larger than an 18 pound shot, struck the mainmast, and without any unusual noise, such as an explosion, the mast was split in four pieces and went overboard with all the yards and rigging attached. The Alcyone had previously lost her mizzen.

### LITERARY NOTICES.

SPECIMENS OF THE STONE, IRON, AND TIMBER BRIDGES &c., &c. OF THE U. S. RAILROADS. By GEORGE DUGGAN, Architect, and C. E.—Part IV. of this excellent work is now ready and for sale. It contains four drawings of the details of timber and iron work of the Staracca Viaduct, on the New York and Erie Railroad; also drawings of the details of timber and iron work in the Cascade Bridge, on the same road, near Lanesboro. A full specification in good letter press, accompanies the drawings. It should receive a wide-spread circulation.

The American Railway Guide and Pocket Companion for the United States, containing correct tables for time of starting from all stations, distances, fares, etc., on all the Railway lines in the United States, together with a complete railway map; also the principal steamboat and stage lines running in connection with the roads. Published monthly by C. Dinsmore, 123 Fulton st., Pathfinder Office. We have taken pains to examine this work faithfully, and we can vouch for its accuracy. No person who travels should be without it, as it is certainly one of the most convenient and useful publications extant.

"The Gardener and Complete Florist." Dewitt & Davenport, publishers.—This book is sold for the small sum of 25 cents, bound, and contains an account of every vegetable production cultivated for the table, with directions for planting and raising flowers. It is worth to every young lady a cart load of novels, and should be studied in place of fictitious works. We do not imagine, however, that this short paragraph will take the novel writer's occupation from him.

No. 14 of Messrs. Phillips, Sampson & Co.'s splendid edition of Shakspeare's Dramatic Works have been issued. It comprises the Comedy of "Winter's Tale," with a beautiful picture of Perdita. Dewitt & Davenport, Tribune Buildings, have all the numbers for sale at 25 cents each.

"Moneypenny, or the Heart of the World." A Romance of the present day, by Cornelius Mathews. Dewitt & Davenport, publishers; price 50 cents.—This is spoken of as being a highly interesting novel. We shall not read it, however, to form an opinion, thinking that we can better employ our time.

The North Western Journal of Education and Science, is a neat monthly magazine published at Madison, Wis., by O. M. Conover, Ed.

The Western Journal, published at St. Louis, by Turner & Risk, is a most excellent monthly periodical, conducted with spirit and ably edited.



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