MISCELLANEOUS.

Manufacture of Steel in India.

The Hebrew name of steel, "paldah," is evidently the same word as the Arabic "foulad," which is also in use in Persia, where Indian steel is known by the name of "foulad-i hind." Even now the best Persian swords are made with steel imported from India, and Mr. Wilkinson has ascribed the markings of the famed Damascus blades to their having been made with Indian steel, which has long formed an article of trade from Bombay to the Persian Gulf.

Mr. Heath, at one time the managingdirector of the India Iron and Steel Company, and whose steel obtained a prize at the exhibition, even says, "We can hardly doubt, that the tools with which the Egyptians covered their obelisks and temples of porphyry and syenite with hieroglyphics, were made of Indian steel." There is no doubt that the ancient Indian temples and fortresses were carved with steel instruments, as they are at the present day. That they made steel which was highly valued in the time of Alexander the Great, is evident from Porus making him a present of about thirty pounds of steel; and still earlier, in the Rig Veda, we read of chariots armed with iron weapons, of coats-of-mail, arms and tools of different kinds, and of bright-edged hatchets.

Mr. Heath describes the ore used as the magnetic oxyde of iron, consisting of seventy-two per cent of iron with twenty-eight of oxygen, combined with quartz in the proportion of fifty-two of oxyde to forty-eight of quartz. It is prepared by stamping, and then separating the quartz by washing or winnowing. The furnace is built of clay alone, from 3 to 5 feet high, and pear shaped; the bellows is formed of two goat skins, with a bamboo nozzle, ending in a clay pipe. The fuel is charcoal, upon which the ore is laid, without flux; the bellows are applied for four hours, when the ore will be found reduced; it is taken out, and while yet red hot, it is cut through with a hatchet, and sold to the blacksmiths who forge it into bars and convert it into steel.

Mr. Heath says that the iron is forged by rehammering, until it forms an apparently unpromising bar of iron, from which an English manufacturer of steel would turn with contempt, but which the Hindoo converts into cast-steel of the very best quality. To effect this he cuts it into small pieces, of which he puts a pound more or less, into a crucible, with dried wood of the Cassia auriculata, and a few green leaves of Asclepias gigantea; or, where that is not to be had, of Convolvulous laurifolia. The object of this is to furnish carbon to the iron.

As soon as the clay used to stop the mouths of the crucibles is dry, they are built up in the form of an arch in a small furnace, charcoal is heaped over them, and the blast kept without intermission for about two hours and a half, when it is stopped, and the process considered complete. The furnace contains from twenty to twenty-four crucibles. The crucibles are next removed from the furnace and allowed to cool; they are then broken and the steel taken out. The crucibles are formed of a red loam, which is very refractory, mixed with a large portion of the charred husk of rice.

Premiums for Agricultural Societies.

The Greene Co., Agricultural Society, Ohio, will hold its Annual Fair in Xenia on the days of the 13th, 14th, and 15th of next month (October.) Among the prizes offered by the respectable gentlemen composing the several committees, there are no less than 30 separate volumes of the Scientific American. A list of those prizes, and what for, have been published, and we have no doubt but those who receive them will be highly pleased. Many of our agricultural societies, especially the spirited ones of Ohio, have been accustomed to award such prizes, and we have had the personal testimony of recipients, in regard to the pleasure and profit they have experienced from such awards. Every volume of the Scientific American is complete in itself; it is a yearly record of American invention and discovery, and no farmer, we are sure, can fail to find something of great importance to him, in almost every number. A book like the Scientific American is of far more value than a medal or diploma. It is true the medal glitters more gaudily, and the diploma hangs more showy upon the wall, but still, for real solid benefit, and as a prize mark for having produced something superior, a volume like the Scientific American, or another instructive book, does more good, and the honor, we think, is equally as great. All Mechanics Institutes in our land would confer greater benefits upon community if they, as a general thing, adopted the laudable example of the Greene County Agricultural Society, of Ohio.

The Flying Ship.

Mr. Rufus Porter issues the following manifesto to the holders of shares in his Flying Ship. We give him the benefit of our circulation gratuitously:—

Report of Progress in the Business of Constructing the Æroport, or Flying Ship, by Rufus Porter.

To the Shareholders:—Since the date of my last report we have had rain every day, which has greatly retarded our progress—the work being of a nature to require dry weather. Nevertheless, I have the satisfaction to announce that the float (the most essential part of the apparatus) is ready for inflation with air, preparatory to the adjustment of the longitudinal rods, rudder, pulleys, replenishing pipes, and saloon wires. Some parts of the work prepared have been admired and complimented by the few who have seen them. The engines are superior both in construction and style. The floor of the saloon is twenty feet in length by six in breadth, and consists of a combination of upwards of one hundred and forty pieces of spruce timber, and strong enough to sustain forty persons; yet its entire weight is only twenty-five pounds. The floor of the engine room is arranged to be independent of the main floor; and the engine and boiler are so arranged as to be at any time instantly disconnected from the wheels, and detached from the saloon, should occasion so require, for the purpose of repair or otherwise.

I have heretofore, and until recently expected to find a cheaper mode of producing hydrogen gas for inflation than the common chemical process, and especially as a gentleman had offered to furnish the gas for less than fifty dollars. But he, for reasons known to himself, having recently declined to fulfil his engagement, I have decided to inflate by the old process, only employing zinc instead of iron, and also employing cubical trunks for generators, instead of barrels or casks.

I have already ordered the materials for inflating, the cost of which will exceed $600. The anticipation of disappointment with regard to the economical mode of inflation induced me to sell more shares than was at first intended. But it is gratifying to consider that none of the shareholders will suffer the least disadvantage by the excess of expense in the construction of this first æroport. That our patience has been tried by a succession of untoward circumstances, I need not hesitate to admit; but still the prospect is bright as ever; the shares are in demand; and two weeks of fair weather will enable me to report progress in a manner more interesting to parties concerned. RUFUS PORTER.

[This is the most momentous project that has ever dawned upon the world since the building of Noah's Ark. We cannot exactly tell how long *it* was in preparing—some say a hundred and twenty years; we know, however, that "Rome was not built in a day," but what is the use of comparing the building of Rome, or even the walls of Troy, to that of Mr. Porter's Flying Ship. It is now exactly seven years since this Flying Ship was illustrated and described in the Scientific American, and at that time it was represented to be a perfectly "fixed fact." We do not know whether or not any shares were sold in the scheme, in 1845, but we know that a scheme was established in 1849, to carry passengers to California by the Flying Ship, and some shares were taken up. Some of those shareholders may have lost patience; we exhort them to exercise that virtue more and more, let them remember the greatness of the project and keep cool: let them remember that it has rained every day since the last Report, and that the projector has been disappointed in not getting his gas for $50, but all these difficulties are about being overcome: a few sun-shiny days will do the job for the "float," and the substitution of cubical trunks for generators, in place of barrels, will do the job for raising the gas. By-the-bye, the discovery of using boxes for barrels, to generate hydrogen gas, is one of the most extraordinary that has ever been made since Dr. Black laid the foundation of modern chemistry. We hope this article will arrest the attention of our Scientific Societies, who are in the habit of awarding medals for great discoveries: the discoverer should be honored as his discovery merits.

The projector is great upon *spruce rods*—140 of them, weighing only 25 lbs., have been so combined as to be able to sustain no less than forty persons. This, we believe, exceeds any of the feats of Queen Mab, and we hope soon to see that most beautiful prediction fulfilled, which was made by the same gentleman in 1849, about skimming along in his balloon, by the skirts of the Rocky Mountains, and landing his passengers among the nuggets of gold in California, in the short space of three days from the time they left New York. It has been said an invention is useful according to its availability; viewed in this light, the Flying Ship is a most useful one, for it has been used to gull the people in our country in various places and at various times, for the past seven years.

Lemon Juice for Acute Rheumatism.

The treatment of acute rheumatism with lemon juice, as noticed in the Scientific American more than a year ago, having been successfully practiced in Europe, has been tried here, and found to be a very effectual remedy. Dr. T. D. Lee, of this city, has communicated his experience with it to the New York Journal of Medicine. He cites two cases, one a male and the other a female who had been subject to severe rheumatism for a number of years, and who were often troubled with acute pains, severe swellings, and could find no effectual remedy. He gave them lemon juice from fresh lemons, in quantities of a tablespoonful in twice the quantity of cold water, with a little sugar, every hour. The effect of the lemon juice was almost instantaneous; in ten days the worst case was cured, and in seven the other was able to go out, and there was a flexibility of the joints after the cure, quite unusual in recovery after other modes of treatment. The "London Medical Times" directed attention to this remedy for rheumatism in 1850, and we would state, that it may answer for one person and not for another. There are two cases recorded in Braithwait's Retrospect, Part 22, 1851, pages 37 and 38, where one patient was effectually cured with lemon juice, after calcium, calomel, and opium had been tried in vain, and the other where lemon juice failed, and the patient was cured with opium and calomel pills, taken along with draughts of the acetate of potash and nitre in a camphor mixture.

Great Artificial Harbor.

The British government are constructing at Dover an artificial harbor for the safety of shipping. It is to consist of a space of seven hundred acres, is to be enclosed by a wall more than two miles in length; more than half of which space will secure a depth of water from 30 to 42 feet at the lowest tide. The wall will be 95 feet wide at the bottom, and 50 at top; the sides will be 18 feet thick, and consist of immense blocks of solid stone, the middle is filled in with artificial stone or concrete. The foundation of this stupendous work is now laying by companies of men who remain several hours, with diving bells, under water. This gigantic display of human power and skill will, when fully completed, cost more than two millions sterling.

The Steamboat Inspectors.

The Republic publishes the following list of appointments of Supervising Inspectors of Steamboats, under the new Steamboat Act:—Robert L. Stevens, of New York; Hiram Barton, of Buffalo, N. Y.; Davis Embree, of St. Louis, Mo.; Benjamin Crawford, of Pittsburg, Penn.; John Shallcross, of Louisville, Ky.; Peyton H. Skipwith, of New Orleans, La.; John Murray, of Baltimore, Maryland; George W. Dole, of Chicago, Ill.

Mr. Stevens is one of the most competent persons for this situation to be found in the United States. If the other gentlemen named are of the same character, the public may expect the most beneficial results from the operation of the new law, if the inspectors do their duty.

Ventilation of Railroad Cars.

The New Haven Courier gives an account of another method of ventilation for railroad cars by a Mr. Waterbury. "It consists," says that paper, "in a connection formed between all the cars by enclosing the platforms, so that the external air with the dust, smoke, and cinders, are entirely excluded from the usual ways of ingress The front of the baggage car is open, but protected from the smoke of the locomotive by a screen; the air rushes in through the front of the car, and circulates freely through the whole length of the train."

We cannot conceive how the screen is able to keep out the smoke and dust, it cannot do it. A correspondent of the "New York Daily Times" claims what is known by the name of Paine's Ventilator, as the invention of Nelson Goodyear, recently deceased—the principle of the invention—not the specific mode is claimed, and it is asserted that all modes of ventilation, embracing that principle, is an infringement of Goodyear's patent.

J. B. J. Hadaway, of East Weymouth Mass., proposes a plan for removing the smoke nuisance of cars, which appears to be new and more plausible than others. He conducts the smoke and exhaust steam through two pipes—one on each side—from the boiler and engine through the water tank of the tender, and through side tubes to the back end of the train. The water in the tank is thus heated, and the smoke carried past each ear.

Perpetual Motion Again.

It is said that Mr. J. Dickens, of Pendleton Co., Ky., after some three years' study, has discovered the principle of perpetual motion. Mr. D. has written to Congress, and steps will soon be taken to apply it to machinery. He has offered as high as five hundred thousand dollars for his discovery, but will not sell.—Ex.

[He would have sold had he got the offer. Perpetual motion is a hallucination with some men; no man of science would trouble his head with it.

Hot and Cool.

A correspondent of the Liverpool Albion says that some years ago there was a Jerusalemite individual in Paris, who, in the presence of Dr. Robertson and all the chemical savans of the day, got into an oven and sang a song while a goose was being cooked.—When he went into the oven the pulse was 72, and rose to 130. At the second experiment it rose to 176, the thermometer indicating 100 of Reamur. At the third experiment he was stretched on a plank, surrounded by lighted candles, and then put into the oven, the mouth of which was this time closed. He was there five minutes, when the spectators cried "Enough!" Accordingly the door was opened; out he came of the fiery gulf, and, with his pulse at 200, jumped into a cold bath, and became as cool as a cucumber immediately after.

Weevil in Wheat.

A correspondent directs our attention to an insect which is now destroying the wheat in some of the grist mills in Pennsylvania, and wishes for information to remedy the evil.

A patent was taken out, about two years ago, for destroying insects in wheat, by moistening the wheat with a solution of 1 part by weight of sulphuric acid to 100 of water. It is said that this will not injure the wheat, but that it will be fit for grinding in a few hours afterwards, as a considerable heat is generated by the action.

Another plan, and one which we think would effect the object completely, would be to drive a current of hot air through the wheat. The hot air should be heated as high as 250° Fah. The air could be drawn through tubes placed in a furnace, and forced into the room where the wheat is placed.