

Foreign Editorial Correspondence.—No. 2.  
Paris Exhibition, &c.

PARIS, May 9, 1855.

I have made almost daily visits to the Palace of Industry, and have watched with much interest the rapid progress which is made by every day's labor of about 3,000 workmen. The spacious avenues and galleries of the buildings are crowded with boxes from every quarter of the civilized globe. The United States Department alone stands motionless and gloomy, like the deserted halls of an old castle. Very few articles from the Great Republic have as yet made their appearance, but as a relief to the monotony which hangs over our valuable space in the principal building, workmen are busily employed in preparing the throne of the Emperor of France—to stand upon Republican ground.

In the Machinery Arcade, mentioned in my last letter as containing about 40,000 square yards, the utmost activity is displayed. Every day witnesses great progress in its condition, and it is quite evident that the display of machinery will be enormous. There are already in the Arcade two powerful locomotives, oscillating marine side lever and horizontal engines, of many patterns, all kinds of cotton machinery, agricultural implements and products; in fact, to judge from appearances, I should think no branch of manufacture would pass unrepresented. I feel warranted in stating that the machinery to be exhibited in the French Exhibition will be four times greater than the amount displayed in the New York Crystal Palace.

Great Britain will take a bold position in the display of machinery, as well as in other objects of general manufacture. Some idea may be formed of its magnitude when I inform you that the number of British exhibitors is understood to exceed three thousand.

Over fifty large cases of machinery have been sent by one London firm; and in the management of this vast and complicated interest every detail is most carefully supervised by the English Commission. The British Department of the Exposition is under the charge of the London Board of Trade, and its members receive salaries, and all necessary expenses from their Government. In addition to this, a few of the British red coats are profitably employed in getting the articles ready for exhibition. They probably enjoy this much better than to be shot at in the Crimea.

I must say that in every respect the English Department is the best managed—no disorder, no confusion.

The English Commission has an office erected in the building, which is faithfully attended, and all accounts of the receipt of goods, all orders to subordinates, and all inquiries are made here, and speedily executed. Not a package of goods is missing, and there is not the slightest difficulty in finding what is sent to the building. Everything is done in order. As a strange contrast to this pleasant picture, I refer again to the United States Department.

There has been no concert of action between our government and contributors in getting the articles into the port of Havre, from which point the French Government transports them free to the Exhibition. The cases already arrived have come in much confusion; one piece of statuary has been completely destroyed, and there are now in the hands of Livingston, Wells & Co., agents at Havre, several boxes for the exhibition upon which the trans-atlantic freight has not been paid, and there are no marks upon the boxes which indicate the source from whence they originate. They cannot be brought to Paris until their disabilities are removed.

S. H. W.

#### An Egg within an Egg.

A M. Beale of Somerset, Iowa, writes us that three double eggs can be seen in that place. The outside one is large and contains a yolk, and encloses a smaller one—the size of a hen's egg—enclosed in a perfect shell.

Springs of pure mineral oil are found in the vicinity of Osawatomie, in Kansas territory, like the "petroleum" found in Western Pennsylvania.

#### Recent Foreign Inventions.

**PUDDLING IRON**—James Nasmyth (the inventor of the steam hammer,) patentee.—This improvement consists in the disengagement of the carbon from the molten metal in the puddling furnace, by subjecting it to the action of currents of steam, introduced as near as possible at the lowest portion of the molten metal, thence diffused upwards, so as not only to mechanically agitate the metal, and thereby keep exposing fresh surfaces of it to the action of the oxygen of the air passing through the furnace, but also to remove the sulphuric and other deleterious substances in the iron, by thus making the oxygen of the air, and also the hydrogen of the water, combine with them, and carry them off in the state of acid gas. It is stated that this process shortens the period of puddling, and greatly improves the character of the iron, rendering it tough and strong to a remarkable degree. The steam is introduced by a pipe under the molten metal, and the supply of it shut off, when in the judgment of the operative puddler, the metal has been sufficiently decarbonized. The patentee states that water may be forced under the surface of the metal to produce the same effects; but this would cause explosions; small quantities, however, he says, would be equivalent to steam. The steam is not used for above five minutes after the metal is melted. Care must be exercised not to use it too long, or the oxygen of the steam will unite with the iron, and form an oxyd.

This is a good improvement, but H. W. Woodruff, of Watertown, N. Y., is a little ahead of Mr. Nasmyth in its application.—He obtained a patent for the same object on the 9th Oct., 1853; his claims will be found on page 43, Vol. 9, SCIENTIFIC AMERICAN. He uses water in a sponge instead of steam in jets, but the result is the same.

**PREVENTING SMOKE IN FIRE PLACES AND FURNACES**—J. B. Jackson and Wm. Bowler, of Sheffield, patentees. This improvement consists in applying to furnaces and fireplaces a passage, or passages, along the bottom of the ash pit, opening to the main flue immediately behind the firespace, which passage is furnished with an automatic valve for regulating the supply of air.

**TRAP ROCK MANUFACTURES**—J. T. Chance, of Birmingham, England, has taken out a patent for fusing trap rock, and submitting it to severe pressure in that state by machinery, so as to make it into slabs, and various other articles.

**OBTAINING SULPHUR FROM PYRITES**—Peter Spence, of Pendleton, chemist, has obtained a patent for extracting sulphur from iron pyrites, by mixing pyrites, or other substances containing sulphur, with coke or charcoal in a furnace, and keeping them at a red heat until the separation of the sulphur is effected.

**ORNAMENTING WOOD**—Thos. Clayton, of Oldham, England, has obtained a patent for transferring the designs of graining on choice wood, such as mahogany, rosewood, yew, &c., from engraved metallic heated rollers, or flat surfaces, to surfaces of common woods, such as pine, whereby a close imitation of choice and expensive woods is produced.

This appears to be a method of ornamenting wood well worthy of attention from our cabinet makers.

**CARRIAGE SHAFTS**—H. A. Genetreau, of Paris, has obtained a patent in England for the application of whalebone, or of bamboo cane, to the construction of carriage shafts.

**MATCH CIGARS**—W. P. Surgey, of London, has taken out a patent for tipping cigars with an ignitable composition like a match, to be fired by friction. Not so good a plan for a smoker, we should think, as carrying a box of matches.—[Collated from Newton's Journal, London Mechanics Magazine, and Artizan.

#### Professor Agassiz.

Prof. Agassiz is now engaged upon a work to be entitled "Contributions to the Natural History of the United States." It is to be published in ten quarto volumes, and the first part is soon to appear.

(For the Scientific American.)

#### Coach Painting.

It is by no means as a bone of contention that prompts us to pen the present communication, to meet the almost countless number of eyes which weekly peruse the contents of your highly popular journal, but a desire to correct, with friendly feeling, a most novel error, found on page 250 SCIENTIFIC AMERICAN, of which A. W. H., of Platte City, Mo., is the author.

Every varnish manufacturer in the Union will agree with us in the assertion that copal and coach varnish are not the same thing, being, in part composed of entirely different materials. There is still another kind of varnish used in coach painting, called "body varnish," which also differs from the two former.

But what we wish to notice more particularly is the following direction for painting coach bodies, which we quote from the article above referred to:

"For filling or priming carriage or buggy bodies, grind yellow ocher with linseed oil quite stiff, add *drier* in proportion, about half a pint to a gallon of paint; thin with turpentine, or use oil well boiled with a quarter of a pound of litharge to the gallon, and use no other drier. Put on three coats of this paint, giving time to dry hard, and sand-paper well between coats. When thoroughly dry and hard, rub down with pulverized pumice stone and water; use a piece of wool hat or thick cloth for rubbing. Then put on three coats of copal (best coach) varnish, rubbing down between the coats with a coarse linen cloth," &c. &c.

As A. W. H. is desirous of having coach painters to comprehend the general principles of the art, we would most respectfully submit the following to his careful consideration:

**PAINT FILLING FOR CARRIAGE BODIES**—Take 1 lb. yellow ocha, 2 oz. white lead, 2-3 teacupfull of drier, half a teacupfull of copal varnish, 2 table-spoonfull of boiled linseed oil. Reduce with spirits of turpentine to the thickness of cream, when it is run through the mill, and is then ready for applying to the body. This paint in all cases is applied to the work in as thick and heavy a state as to make it work, never thinner than the thickness above mentioned; after the body has been puttied up, and received two coats of lead paint, mixed as follows: to 1 lb. white lead add half an oz. lampblack, two-thirds of a teacupfull of drier, half a teacupfull of boiled oil, and reduce with turpentine,—it is ready for the application of the paint filling.

However, it is considered proper by most painters to sand-paper each coat of lead paint when thoroughly dry. But in no case is the paint filling thus treated. In applying this latter paint, the body should stand at least 24 hours between coats; from two to five coats are required, according to the grain of the wood to which it is applied; when sufficiently hard, rub down with pumice stone and water. To accomplish this, take a small piece of pumice stone, with a flat surface ground upon it; this hold in the right hand, and in the left a sponge filled with water, the water being permitted to flow upon the parts you are rubbing with the stone. Thus a perfectly smooth and level surface is cut upon the body. This done, the work is cleaned off, and then dry a thin coat of lead paint is again applied, which latter being smoothly rubbed down with fine sand paper, the body is ready for the color. This applied, the next step in order is the application of the varnish, which is afterwards rubbed down with pulverized pumice stone and water; and if a polish is desired, this latter process is followed with rotten stone and water, cleaned off with a fine peace of buckskin, and finished by rubbing the surface well with a fine article of sweet oil.

We would here remark, that by attempting to rub down the paint filling with pulverized pumice stone and cloth, it would be found that the desired effect could not be attained, as it would simply smooth the surface, but not cut it down and make it level.

Pulverized pumice stone is never used by experienced painters for any other purpose

than for cutting down the varnish. Again, coach painters, never use a coarse linen cloth for rubbing off the varnish, as that will scratch the painting.

Persons should indeed (using the concluding expression of A. W. H.) "learn the qualities and nature of all the articles used in paints and varnishes, in order to do good work;" and we may add, that it is of equal importance that they perfectly understand the proper manner of applying the same.—

EDITOR COACHMAKER'S MAGAZINE.

#### Kentucky Mechanics Institute.

MESSRS. EDITORS—In your paper of Saturday May 19th, we were pleased to see a flattering notice of the "St. Louis" Mechanics Institute, as taken from the Louisville Courier. The "facts and figures" correspond so exactly with the report of our Institute, and we have so much confidence in the opinion of the SCIENTIFIC AMERICAN, that we cannot but envy the "St. Louis" fellows their compliment, and wish that our name instead of *theirs* had been inserted in that notice.—Now, we are willing to recognise all the merits they deserve, but as our Institute is flourishing and theirs has been defunct four or five years, you must excuse us for not wishing to loan them our laurels. We are willing to admit that St. Louis is quite a place for a country village, but *we* are the chaps that pocketed your last "Hundred Dollar Prize," and intend to do it again if you give us a chance.

M. M. G.

Louisville, Ky.

[We are indebted to M. M. G. for directing our attention to this; the Louisville Mechanics Institute, and no other, was present to our mind when we penned the notice. The Louisville mechanics have shown themselves to be the very "chaps" to conduct an Institute in a spirited manner, for it requires a zeal and taste for useful and sound information to make such an Institution prosper; this, to their credit, they have exhibited.]

#### Sailing Against the Wind.

MESSRS. EDITORS—In No. 37 of the SCIENTIFIC AMERICAN, I notice that the question of propelling a vessel against the power that drives it is again discussed.

Your correspondent, J. B. C., might have saved himself the trouble of entering into so nice a calculation and the use of so many figures if he is correct. He states, "if the sails move half as fast as the wind the back of the sails in returning below the top of the boat and striking against the dead air would cause an equilibrium." Now, if this was the case, the wheel would not stir, and of course the boat would drift backwards without the need of so many figures to prove it. But it so happens that this is not the case, as equilibrium is a balance of forces. If a current of air is impinging upon the upper surface of the wheel, it is evident that a like current must act upon the lower surface, to establish an equilibrium, nothing can be plainer than this. If the wind is blowing at the rate of 12 miles per hour it makes no difference whether the wheel moves half so fast or not, there can be no equilibrium established so long as the under surface is acting upon the still air.

In my first letter to you, I stated that, "notwithstanding action and re-action were equal, a body could be made to move directly against the power that propels it upon the well known principle of gaining power by sacrificing speed, and vice versa, and that a vessel could be constructed to go against the wind that propelled it." I am of the same opinion still, and when I can have leisure time sufficient, shall undertake to demonstrate the same to you by something better than mere theory or calculation—actual experiment.

I repeat again that I am no perpetual motionist. I have no idea of man's accomplishing perpetual motion until he can wheel himself off on a wheel-barrow by the handles, or overcome friction and the law of gravitation.

GEO. W. STEDMAN.

Vienna, N. J., May 27th, 1855.

We have received a copy of the Report of the Pottsville (Pa.) Scientific Association, to which we shall devote attention next week.