

An Interesting Relic.

In 1851, a Frenchman, Mons. J. Worms, received an American patent for a very ingenious improvement in printing presses, by which both sides of the sheet were printed in succession before issuing from the machine. A folding apparatus and other useful devices were also attached. Recently, in the course of certain examinations at the Patent Office in Washington, we came across the original drawings of M. Worms, and found attached thereto a fine specimen of the printing done by his improvement. It was a small folio sheet, printed in English, but with the quaint-faced type common to France. The subject matter of the impression is a dedication of the improvement to the memory of the immortal Franklin; and to us it presents a peculiar interest, as being a tribute of France to the memory of a brother inventor in America. We subjoin a copy of the specimen:—

HOMAGE TO FRANKLIN.

The inventor of the rotary press and cylindrical stereotype from which this little sheet is printed, feels it his duty to dedicate the first labor of the model destined for the Patent Office of the United States to the memory of Franklin:

To the memory of the printer, who, by the exercise of industry, frugality, and virtue, raised himself to that eminent position at which his influence over others was only equaled by their respect and admiration for him; to the memory of the man who, having faith in the triumph of truth, sought always to enlighten his countrymen; to the memory of him who established the first paper-mill in that great country to which those who suffer in Europe now look with hope; of him who there—by the newspapers which he published, by the ten thousand copies of his almanac which he annually circulated, by the corps of excellent printers which he formed—aided so much to build up that public spirit which carried America happily through the struggles of war, and the greater difficulties of a firm republican organization.

When the news of his death arrived in France, the Constituent Assembly was in the midst of its arduous labors. On the 11th of June, 1790, Mirabeau, the great orator of the Assembly—and on this occasion the eloquent interpreter of its grief—took the floor, and spoke as follows:—

"Franklin is dead! The genius which enfranchised America, and shed upon Europe floods of light, has returned to the bosom of its Maker. The sage whom both hemispheres reclaim, the man whom both science and history stand forward to honor, held, it cannot be denied, one of the highest of earthly ranks.

Long enough have European cabinets notified to each other the death of princes, great only in their funeral eulogies; long enough has the etiquette of courts proclaimed hypocritical mourning. Nations should weep only the loss of their benefactors; the representatives of nations should recommend to their homage only the heroes of humanity.

Congress has ordered, in the fourteen States of the Confederation, a general mourning of two months for the death of Franklin; and America at this moment is acquitting her debt of veneration for one of the fathers of her Constitution. Would it not be to our honor, gentlemen, to unite in this religious act—to participate in this homage rendered in the face of the universe to the philosopher who, more than any other, has contributed to secure throughout the earth the peaceful triumph of the rights of humanity? Antiquity would have raised altars to this vast and powerful genius, who, for the benefit of mankind, grasping by his mighty intellect not the earth alone, wrenched from the lightning its mysterious perils, and from the tyrant's hand struck down his sceptre.

France owes, at least, her testimony of grief for the loss of one of the greatest of men who ever served the cause of Science and of

Liberty. I propose that the National Assembly go into mourning for the death of Benjamin Franklin."

This proposition, seconded by the Duke of La Rochefoucauld, and supported by Lafayette, was unanimously adopted.

May this press serve to spread more widely those principles, devotion to which has made the name of Franklin immortal! May this press aid in the diffusion of Virtue, Science, Liberty, Truth!

J. WORMS.

Paris, July, 1850.

Paris: printed by Firman Didot freres, Jacob street, 56, on the newly-invented rotary press.

Something Useful about Clay.

Of the various substance on the face of the earth few, if any, are so generally useful to man as clay. It is more than probable that the first substance which man began to fashion, to shape, or mold, was clay. The inspired writers repeatedly use the word clay in a figurative sense in reference to the shaping of the body. "Thou hast made me as the clay; your bodies are as the bodies of clay" (Job x, 9; xii, 12). Whether the clay was burned as bricks, or not, cannot be positively decided; but reference is directly made to "them that dwell in houses of clay" at that time. More than 1500 years B.C. "the potter's power over the clay" was perfectly familiar; so that by analogy we may fairly reason that the clay for houses may have been hardened by fire. As far as we can ascertain, pottery is one of the most ancient of arts. Man having obtained "power over the clay," he began to get power over the metals. This early adaptation of clay to domestic wants arose from the intrinsic merits of the clay itself. Its property to harden from mere exposure to the air and sun, was quite enough to render it serviceable; but when it was ascertained that fire turned it into a more durable material than stone, it gave of course great impetus to its workers. The potter's wheel or tool for fashioning clay is the same now that was used three thousand years ago. Clay is not only useful in pottery, but is applied in many of the arts, such as dyeing, where alum (a compound of clay) is extensively used for fixing colors, in preparing leather, and many other arts and manufactures. "But what is clay?" many will ask; and the laboratorian chemist replies "It is the rust of a beautiful metal! Not many years ago all the fashionable world of London flocked to Albermarle Street to see young Humphrey Davy produce metals from earth. Prior to this all earths, clays in particular, were considered primitive and unchangeable bodies; his genius, however, penetrated these mysteries, and the result was that we now know that all earthy bodies are but metallic rusts of one kind and another. Sir Humphrey Davy merely showed the world that the earthy bodies were of a metallic origin. M. Deville, of Paris, under the patronage of the present Emperor, has separated the metallic base of clay to such an extent that it is an article of commerce. Aluminium is now used for jewelry, especially bracelets, pins, and combs; in cabinet-making it is excellent for inlaid work; its lightness renders it extremely convenient for pencil-holders, thimbles, seals, small statues, medallions, vases and the like; for spectacles also, as it does not blacken the skin like silver. But one of its most useful applications consists in using it for reflectors of gas lamps, since it resists the effects of sulphurous emanations, which silver and brass do not. The chemical name of clay is alumina, and the metal obtained from it aluminium. Most metals are characteristic of being very heavy; but aluminium is remarkably light; and though it has a silvery white metallic lustre, yet such is its lightness, that one can scarcely believe it to be a metal; but it assuredly is so. Beautiful spoons and forks are made with it, and at no distant period it will become as common as zinc, though of more value. If chemistry deserves

well of us, it is in this case. It has now taught us that the very walls of our houses and the tiles of their roofs teem with a brilliant metal which we can turn to useful purposes. Some metals, such as iron, rust or become earthy very rapidly; but aluminium does not do so; yet it can be rusted, and the result is, that the earth *clay* is produced. All these facts prove that what was thought to testify figuratively the value of clay by the writers of the Scriptures is now known to be truth in its real and intrinsic sense. Thus every experiment in the laboratory tends to illustrate the sublime truth of every assertion in the Holy Volume. Within the outward earthy body of clay there is an effulgent metallic spirit.—*Septimus Piessé.*

Fuel for Locomotives.

The Philadelphia *Ledger* publishes some valuable statistics; now first made public by John C. Cresson, President of the Minehill and Skuylkill Haven Railroad, in regard to the use of anthracite coal on the locomotives of that road. Experiments have been made with this fuel on various classes of engines, and of 25 locomotives using it, two have run for ten years without a removal of their fire-boxes, and their boilers appear to be in good condition yet. In this time they have done an immense amount of duty. "The engines upon this road have nothing to distinguish them from wood-burners, except that the fire-box is larger in area and less in depth. The light trains vary from 100 to 140 cars, and the loaded trains from 100 to 250 cars. The ordinary work of a thirty-ton engine is a train of 140 cars taken from Skuylkill Haven to the summit of Broad Mountain, and returned loaded; the distance run in doing the work is about 65 miles, and the quantity of coal consumed is about four tons. The total rise in the road is over 900 feet. Mr. Cresson further states that these results have been obtained by a few slight changes of construction in the boiler furnace, and proper care in the management of the fire. A large area of grate, wide water space around the furnace of 3½ to 4 inches; a shallow fire-place and a large opening of exhaust nozzles so as to diminish the violence of the blast. To these have been added several auxiliary contrivances, one for varying the effect of the exhaust blast by having the smoke pipe to slide telescopically, under control of the fireman; another, for stirring the fire by a regular motion derived from the engine axle and thrown into action at will; a third to heat the feed-water and regulate its admission in such a way that it may be kept on at all times, in quantity adjustable to the wants of the engine."

Evaporation and Decomposition of Water.

Messrs. Editors—There was a lecturer on science at this place lately, who asserted that a large portion of the vapor arising from the ocean was decomposed into its elements (oxygen and hydrogen), and that these were caused to unite again by electrical discharges, and come down as rain in thunderstorms. This theory was new to me; and I should like to know if scientific men believe in it.

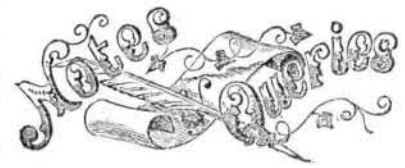
P. C.

East Randolph, Vt., Feb., 1859.

[No such theory is entertained by scientific men. Not a particle of evidence has ever been produced to prove that hydrogen exists in a free state in the atmosphere, which it must do to fulfil the conditions of the above theory.—*Eds.*

Sewing Machine Patent Cases.

On the 15th ult., Judge Ingersoll, in the United States Circuit Court, this city, granted preliminary injunctions against fifteen sewing machine companies, to restrain them from infringing the patents of A. B. Wilson on the feed-motion. The defendants, we understand, were not prepared to go into the trial at present; they can move to have the injunctions removed at any subsequent period, and bring the cases to a full consideration of the court.



* PERSONS who write to us, expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their communications.

We are unable to supply several numbers of this volume; therefore, when our subscribers order missing numbers and do not receive them promptly, they may reasonably conclude that we cannot supply them.

H. P. J., of Conn.—Wrought iron pipe of half an inch bore costs four times less than lead pipe of the same size; but it is not adapted for conveying water under-ground, as it soon rusts out.

P. W., of N. Y.—The prize essay upon canal navigation to which you refer is not to be found in this city, so far as we know.

R. S., of N. Y.—A paddle-wheel with self-regulating vertical buckets is not new, and therefore not patentable. Several wheels of this character have been patented.

J. J., of Maine.—The two models of your aquatic porcupine have arrived. They beat the whole tribe of stickle-backs, devil-fish, sea serpent, grampus and walrus "all hollow." Yoked to a pair of overgrown turtles, they would make a splendid submarine voyage to Biddeford in the course of a couple of centuries.

G. A. B., of Dacotah Ter.—The specimen you sent us is galena, or sulphide of lead; it is a very good specimen, and valuable.

W. J. McC., of Tenn.—If your mill-picks are made of bad steel, you cannot make them work well by any tempering process. If the steel is good, dip them into molten lead until they are heated equally throughout, then plunge them suddenly into cold water.

P. J. C., of S. C.—If a newspaper is sent to your address and you take it out of the Post-office, you are responsible for the subscription. There is no get-away from this. Furthermore, so long as you owe the publisher for back subscription, he can continue to send the paper to you, and you will be obliged by law to pay for it. Our practice is, not to send the paper unless the subscription is paid in advance, and to discontinue it whenever the term runs out. This proves the most satisfactory rule.

YULE LOG.—A correspondent says he has observed this curious title applied to a recent book for children, and would like to know what it signifies. Yule is a name given to Christmas by the ancients; and on the night before Christmas, our English ancestors were wont to light up candles of an uncommon size, called "Christmas candles," and lay a log of wood upon the fire, called a "Yule log," or "Christmas block," to illuminate the house, and, as it were, to turn night into day. This custom, in some measure, still kept up in England to this day, and awakens many a joyous and happy thought of other days.

D. E. R., of Mich.—American patents are not granted for the application of old devices to new purposes, except as new combinations. If an inventor secures a patent for a certain device, it covers its application to all purposes.

W. G., of Vt.—If you have any collected experiments regarding the quantity of water which flows over high and low falls, we should like to see them. In calculating the power of waterfalls, no more allowance is made for water passing over a high than a low fall; the top of the water sheet, in both cases, is held to be zero. You did not state the cause of the locomotive boiler forcing out a blast of air. Were the feed pumps worked as air pumps?

W. H. J., of Mass.—To blue steel, first polish it bright, then heat it in a clear fire until it assumes a blue color, when it must be taken out, and plunged into a bath of cold water containing a little oil floating on the surface. This color is easily rubbed off. You may cover steel with a lac varnish, colored blue with ultramarine; or you may coat it with a blue enamel, consisting of ground glass, ultramarine, and borax, reduced to a paste, then laid on the steel, and fused in a fire; this is very permanent.

M. B., of Ky.—The best cement which you can apply externally to stop the leak of water in your pine cistern, is a mixture of white lead and fine ground sand or ground glass. It will be very difficult to stop leaks from the outside without caulking the cistern. You should endeavor to apply the above cement to the inside, where it will certainly stop the leak, and last for a hundred years.

Dr. W., of Pa.—We are aware that many eminent physicians have doubted the action of sarsaparilla, but Dr. Bocker was the first to prove it satisfactorily by a series of experiments. We do not consider it of any value as a remedial agent.

J. G. G., of Ark.—The draft of a chimney is increased by its height, because the pressure at the top, when the air is once expelled, is much less than at the bottom. The number of square inches contained in a circle is found by multiplying half the circumference into half the diameter.

T. H., of N. Y.—A self-loading hay-wagon would be of great service to farmers; but unless it is made simple and moderately cheap, it never could come into general use. Farmers want tools capable of being repaired without the necessity of having a blacksmith attached to the farm.

W. M. B., of Pa.—A strong solution of pure isinglass is excellent for joining the ends of leather belts before they are riveted together. About 25 per cent of thick mastic varnish added increases its adhesiveness and ability to resist the action of moisture.

A. B., of Texas.—How a bird can sail in the quiet air without moving its wings has puzzled more persons than you, and we have often been struck with the fact our-

