POLYTECHNIC ASSOCIATION OF THE AMERICAN INSTITUTE.

The Association held its regular weekly meeting at its room at the Cooper Institute, on Thursday evening Jan. 12, 1865, the President, S. D. Tillman, Esq. in the chair.

THE METAL PALLADIUM.

Dr. Parmelee exhibited a coil of palladium wire weighing about four ounces, Troy, and valued at about $600. He states the sample was manufactured by Messieurs Desmoutes, Morin, & Chapuis, of Paris, and that the specimen is more interesting from the fact of its being chemically pure, while others are generally alloyed with from 40 to 60 per cent of silver. Its general characters are like those of platinum; but, while it is infusible in an ordinary wind furnace, it melts at a lower temperature than that metal. Its specific gravity is 11.5; atomic weight 53.24. It occurs chiefly in the ore of platinum, in the proportion of about one per cent; it is extracted by dissolving this ore in aqua regia, and precipitating the palladium from the solution by chloride of ammonium. After filtration the palladium is separated by cyanide of mercury, or cyanide of palladium. This is usually converted into a sulphide by heating it with sulphur; and afterward the sulphur is expelled by repeated washings. There are other processes of a more complicated character and probably less valuable. Palladium has been applied in a few cases to the construction of graduated scales of astronomical instruments. Porcelain manufacturers employ it in some instances to produce a fine silver gilt on ornamental wares. It is also used in bronzing brass for ornamental purposes. Photographers also employ the chloride to some extent for toning their pictures. The scarcity of the metal has limited the application of it to few uses. This wire is the $\frac{1}{38}$th of an inch in diameter, and is worth about $40 per foot.

Professor Seely remarked that a few years ago, at a meeting of the Photographical Society, Dr. Draper suggested that palladium might be used to advantage for toning photographs. When photographs are made the darks are silver, and the color of this metal is not pleasing to the eye; photographers therefore dip their pictures into a solution of gold, which gives them a beautiful purple color. Dr. Draper's suggestion attracted a good deal of attention, and palladium was probably inquired for at every place in the city where there was any reason for supposing that it might be found. There was none to be had, and the speaker applied to Dr. Draper, who said that a few years before there was plenty in the market at $10 per ounce. The supply had been exhausted by makers of gas fixtures and others, who used the metal for giving a beautiful bronze finish to their work.

Professor Everett stated that a few years since he obtained about four ounces of palladium from some platinum ore that he was analyzing, and he made it into a solution of chloride of palladium, to be used for bronzing. After selling three bottles it was discovered that the supply in the market was running short, and when we sold the first lot from the fourth bottle, my partner filled up the bottle with water. The solution seemed to work just as well till it became very weak, so that we got as much for the fourth bottle as we did for the other three.

Mr. Maddock stated that the bronzing of porcelain is now effected with a preparation of iron.

THREAD.

Dr. Rowell illustrated by a piece of tape that if a thread or other string is wound on a card with the right hand, holding the card in the left, a twist is put into the string at every revolution around the card; but if the card is shifted to the right hand and the winding continued with the left, the twists are taken out, or the thread is twisted in the opposite direction. The same action takes place in ordinary sewing by hand, a twist being either put into the thread or taken out at every stitch. It is for this reason that girls are taught to work button holes always in the same direction, going from left to right along the lower edge, and from right to left above when "twist" is used. The twisting is avoided in winding thread by adopting the method usually practiced by boys in winding their kite strings. To avoid kinking or spoiling the thread from the twisting in sewing, thread is cabled as it is called; that is, it is first spun into threads and then these are twisted together. In sewing on sewing machines, no twisting of the thread takes place, it is therefore not necessary to cable the cotton for this use.

SOME FACTS ABOUT PERU.

At the meeting of the Farmers' Club, on Tuesday afternoon, January 17, Mr. P. G. Squier gave an account of the ancient and modern agriculture of Peru. We select from his discourse a few of the most interesting items.

THE INCAS.

At the time of the discovery of America by Europeans, Peru was governed by the Incas, who were both priests and rulers, and they had established the most absolute despotism. The organization of society was a kind of socialism, without either poverty or wealth. On the birth of a male child a certain portion of land was assigned him, and this was increased when he reached the age of ten years, and still farther when he was married, amounting then, however, to little more than an acre. Only a small proportion of the country is arable land, and that can be cultivated only by means of artificial irrigation, as there is no rain. Under the Incas every foot of land susceptible of tillage was cultivated to the very highest degree. Canals were constructed two hundred miles in length, winding round mountain peaks to preserve the level, passing over aqueducts of masonry 60, 80 and 100 feet in hight, and finally distributing their waters into a number of valleys. These valleys were not only cultivated over their bottoms, but the mountain sides were terraced as high as the water could be led.

COTTON CULTURE IN PERU.

Within a few years the cotton culture in Peru has been greatly extended. It is carried on mostly by foreigners, generally English and Scotch, though there are a few Americans. The laborers are nearly all Chinese, who are imported by the planters. A bonus of some $400 is paid for them, and they are bound to work eight years at $8 per month. Owing to the absolute control over the moisture of the soil by the artificial system of irrigation, the cotton is of very superior quality; it is better than any raised in the United States except the Sea Island.

AGRICULTURAL IMPLEMENTS.

Among the planters, the English and Scotch who employ Chinese laborers use generally good implements, but among the natives the tools are very simple. On the coast the plow is employed to some extent, but it is a very rude implement. It is a stick of wood sharpened at the end, nothing more than a wooden wedge. It is drawn by a single ox, by means of traces attached to his horns, and he is guided by means of a cord which is passed through his nose. The plow is the same that is generally used in Europe. I have seen one just like it within ten miles of Paris. Even this plow is used in Peru only on the coast; the one implement with which the agriculture of Peru is almost wholly conducted is an iron adze, with a short handle, to be wielded with one hand.

CONDITION OF THE PEOPLE.

The mass of the people live in the most miserable and squalid condition. Their dwellings are made by piling up loosely a circle of stones some three or four feet high, and covering it with a roof of grass. Their cooking utensils consist generally of one earthen pot and three or four dried bones. Perhaps the whole furniture of the house might be worth three cents.

RIVERS LOST AND FOUND.

Some of the rivers that flow down from the mountains sink in the sand and utterly disappear. In some of the valleys the Incas had the sand excavated to the depth of several feet, so as to get within reach of the subterranean waters, and when ground was found sufficiently moist it was cultivated. The sand thrown out formed great ridges across the valley. The moist strips between these ridges are now the choice localities for the cultivation of the grape. Looking down the valley you see nothing but a succession of dry, barren ridges of sand, but if you climb to the top of one of these you look down upon a display of verdure unsurpassed on the face of the earth.

DRUNKENNESS.

The three principal crops of Peru are Indian corn, cotton and the sugar cane. The juice of the sugar cane in the United States and Cuba seldom yields more than six per cent of sugar, but in some of the valleys of Peru it yields more than fourteen per cent. A large portion of it is made into the intoxicating drink called *aguardiente*. This rum is drunk by all classes of the people, old and young, rich and poor, male and female, religious and irreligious, and at all times of the day and night. The general condition of the people of Peru may be said to be that of drunkenness.

DIFFICULTY OF COOKING.

Mr. Squier described a large lake in the mountains 12,500 feet above the level of the sea, the waters of which are some 20° warmer than the surrounding atmosphere. The warmth of the water so tempers the climate that Indian corn may be grown on the borders of the lake, but water boils at so low a temperature at this high altitude that it is difficult to cook any kind of food properly. It is customary, therefore, to soak corn several months before the attempt is made to cook it in the lukewarm boiling water of that altitude.

THE LAW OF SUCCESSIVE SPECIES.

Of the many thousand species of plants and animals that existed in the early geologic ages, not a single one remains. The patient study of that wonderful history, which has been engraven by the hand of the Creator in the everlasting rocks, revealed that one species of animals came forth, slowly developed to perfection, and then slowly decayed, to be followed by another, and another, and another, in long succession of generations of species.

It is curious to observe that the same great law which governed the creation of animal life through the immeasurable ages of the past, applies at the present day to the coming forth of those microscopic organisms, whose existence is so brief that the growth and decay of a whole species may be watched in the compass of a week.

Professor J. Nickles, writing from Nancy, France, to Silliman's Journal, gives this account of an experment recently made by Professor Montegazza at the University of Pavia.

Two female frogs were quickly killed, by the destruction of the spinal marrow, and placed in two glass vases each of which contained 115 cubic centigrams of well-water perfectly transparent and free from all foreign bodies. One of these vases was left in diffused light, the other was placed in a box which did not permit a single ray of light to reach it.

The experiment was continued seventeen months. It is necessary, before giving the results of this long trial, to state that every time that the two vases were compared, they remained exposed to the air for an hour or more, and that the air was renewed at each observation. Germs could, then, easily fall in; and yet the results were very different in the two cases.

The following are the observed results:

1. Two identical bodies exposed to free air may present very different phenomena of putrefaction, according as they are exposed to the influence of the light, or shut off from it.

2. The chemical and biological phenomena of the two forms of putrefaction are very different, that is, we have in each case some special chemical products, and some peculiar animal and vegetable productions.

3. In darkness, there was a marked tendency to the production of vegetable organisms and very simple infusoria; the frog that underwent putrefaction while shut off from the light produced only some Mucedines, Monads and Vibrios; while the other afforded a very complicated fauna—Bacteriums, Vibrois, Spirellas, Monads of different species, Amœbas, Kerones, Alysum, Enchelides, Trachelius—and, finally, Infusorians still undescribed, much resembling the Zoosperms of the Tritons.

4. The abundance and superior organization of the Infusoria depend much more upon the progress of the putrefaction than upon the amount of putrescible matter. The more simple species always appear first.

5. The production of species of Bacterium takes place many times during the course of a long putrefaction.

6, When the liquid presents a new fauna, the new species are from the outset represented by a number of individuals at once; from one day to the next, they are simultaneously produced.

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7. In the course of a long putrefaction, there are some generations which endure for some days; others exist for a much longer time.

8. Rapid changes in the chemical composition of a putrescible liquid are always, or nearly always, followed by new sets of animal and vegetable microscopic life.

9. When circumstances are little favorable to heterogeny in a very long putrefaction, there may be intervals of time of greater or less length, in which the liquid presents no organism. Whoever should content himself with observing at such a moment, might say that there had been no generation; while some days before, or some days after, there had been, or there would be, a very abundant production of vegetables, or of animals, or of both at once.

Erosion of Lead by Insects.

The *Chemical News* says:—A letter to the *Times*, signed "Y," states that the erosion of lead by certain species of insects is not generally known, and may be extremely mischievous. Not long ago it attracted the attention of the French Academy of Sciences, and several communications upon it have been published in their proceedings, the *Comptes Rendus*. In 1858 Marshal Vaillant exhibited to the Academy leaden bullets brought back from the Crimea, in some of which the larvæ of insects had excavated passages three or four millimeters in diameter; but nothing of the kind had been detected in the cartridges of the Russian army in the Crimea, and the insect which damaged the French cartridges appears to have been imported in the wood of the cases in which they were packed. The insects do not eat the lead, but simply bore it out. In 1833 Audouin exhibited to the Entomological Society of Paris sheet lead from the roof of a building, deeply grooved by insects. In 1844 Desmarest mentioned erosions of sheet lead by a species of Bostriche (*B. Capucina*), and illustrated the fact by cartridges from the arsenal at Turin. Mr. Westwood, the well-known British entomologist, has recorded observations on the perforation of lead by insects. M. Bouteille, curator of the Museum of Natural History at Grenoble, sent to the French Academy of Sciences from the collection under his charge specimens of cartridges gnawed by insects, which were found *in situ*, and the reports on the subject by Marshal Vaillant, de Quartrefages, and Milne Edwards, state the insect to be *Sirex gigas*, a large hymenopterous species, which, in the larva state, lives in the interior of old trees or pieces of wood, and which, after the completion of its metamorphosis, quits its retreat for the purpose of reproduction. Scheurer-Kestner, in 1861, communicated to the French Academy a notice of the erosion by an insect of the sheet lead of a new sulphuric acid chamber. The creature was caught in the act of escaping through the lead, having been imprisoned between it and a wooden support. But perhaps the most interesting and important case of insect erosion is that of stereotype metal, which was communicated in 1843 by M. du Boys to the Agricultural Society of Limoges.

Acclimation of Salmon in Australia.

Professor J. Nickles writes to *Silliman's Journal*:—Recent experiments carried forward by the Acclimation Society have shown that it is possible to transport to distant countries the eggs of fertile fishes. One of its members, Mr. Millet, having observed that melting ice diminished the pulsations of the young fish of the Salmonidæ and delayed the hatching of the eggs, took the idea that this method would serve for the transportation of eggs of the Salmonidæ to Australia and Tasmania. The plan has succeeded, in spite of damaged eggs; a very large number have arrived there in a healthy state, and have been deposited in the rivers. Starting from London on January 15th, 1864, the eggs arrived at Melbourne on April 5th, and at Hobart Town, (Tasmania,) on the 22d. Everything indicates success.

Similar attempts have been made in the French possessions in Algeria, the rivers of which are very barren of fish. Eggs of salmon and trout have been carried there from Huningue (Haut Rhin), where, as we have previously seen, are found the principal basins for pisciculture. In spite of the differences of climate, these eggs have arrived safely, and have hatched in the basins prepared for them; they already begin to people the rivers. It is a result of no moderate interest to see the salmon of the Rhine and the trout of the Vosges transported to Africa, Australia, and Tasmania, and living and becoming acclimated there.

How to Cook Snails.

Fried frogs are very nice eating. Snails are said to be fine also. We have no passion for snails, personally, but some investigators may have, and we therefore append a plan for cooking them:—

"The large brown snails gathered in gardens are very good eating, and by some persons are very much liked. A year or two ago the master of a French vessel obtained leave to gather them in the garden to take on board his vessel, and they were eaten by the whole ship's company; in return the master was good enough to gather, prepare, and serve the snails up for our family dinner party, which he joined, that he might be certain of the cooking being perfect. The instructions were to use only those snails whose shells were at the edges sufficiently hard to resist the nail without breaking; to be careful not to gather the snails from off either ivy, box, or other evergreen, as snails so feeding were deemed unwholesome; to put them in water with a handful of salt to spit, that is, to cause them to clean themselves; and to boil them gently, when they come out of their shells with ease. We were then to prepare the frying pan with a little lard and parsley, and to fry the snails delicately; they thus form a dish a poor man might feast on and a rich man enjoy. Bread crumbs might be added if liked, and the snails might be stewed, but the mode of cooking just given pleased our family best, and formed a dish we have often tried since we received the instructions from the master of the French merchant trader. Kept for a week or so and fed on oat meal, then fried in oil with vinegar, salt, and pepper, they are considered *bien delicats.—A. C., in Gardener's Chronicle.*

Correction from a Noon Mark.

MESSRS. EDITORS:—Persons who use a noon mark or transit instrument to obtain the time by the sun, are in need of a better table for correction than is found in most of our almanacs. I would call the attention of watchmakers, railroad men and others to the Methodist Almanac, published in your city, as containing the correcttion calculaed in solar time, and given in minutes and seconds for every day in the year. I hope that some of our other almanac publishers will make one step forward in this age of fast traveling, and in their future editions follow the example aforementioned.

The writer for several years made use of a sundial, by which the image of the sun, inverted, was thrown upon a wall fourteen feet distant. The edge of the image produced was so clear and distinct that I was enabled to read the time of the transit of the sun to within two seconds. With the aid of the Methodist Almanac I could regulate my clocks and watches to a greater nicety than they could who depended upon the "town clock." J. A. S., Watch Maker.

516 Callowhill, Philadelphia.

Waste of Ammunition.

How much ammunition is wasted in battle, and how many muskets in the hands of incompetent or cowardly men are actually useless, the following official report of the small arms picked up on the field of Gettysburg strikingly illustrates. The statement has been published before, but we give it again as one of the strongest arguments in favor of a change to breech-loading guns. With breech-loaders it would be impossible to get more than one charge at a time, and a man could tell at a glance whether his piece was discharged or not: Of the whole number received (twenty-seven thousand five hundred and and seventy-four) we found at least twenty-four thousand of these loaded; about one-half of these contained two loads each; one-fourth from three to ten loads each, and the balance one load each. In many of these guns from two to six balls have been found, with only one charge of powder. In some the balls have been found at the bottom of the bore, with the charge of powder on top of the ball. In some as many as six paper regulation caliber fifty-eight cartridges have been found, the cartridges having been put in the guns without being torn or broken. Twenty-three loads were found in one Springfield rifle-musket, each load in regular order. Twenty-two balls and sixty-two buckshot, with a corresponding quantity of powder, all mixed up together, were found in one percussion smooth-bore musket. In many of the smooth-bore guns, model 1842, of Rebel make, we have found a wad of loose paper between the powder and ball, and another wad of the same kind on the ball, the ball having been put into the gun naked. About six thousand of the arms were found loaded with Johnston & Dow's cartridges; many of these cartridges were about half way down in the barrels of the guns, and in many cases the ball end of the cartridges had been put into the gun first. These cartridges were found mostly in the Enfield rifle-musket.

The Preparation of Matches Free from Phosphorus.

Hierpe has published the following receipts for a composition for the heads of matches, and for an igniting surface. That of the matches is as under:

Chloride of potash	4 to 6 parts.
Bichromate of potash	2 parts.
Ferric oxide	2 parts.
Strong glue	3 parts.

The *Polytech. Centralblatt* gives these directions for making two new kinds of matches.

Oxide of iron may be replaced by oxide of lead or of manganese. The above preparation will not ignite on sandpaper, but requires a surface specially prepared for it, and the author employs the following on the boxes:—

Sulphide of antimony	20 parts.
Bichromate of potash	2 to 4 parts.
Oxide of iron, lead, or manganese	4 to 6 parts.
Glass powder	2 parts.
Strong glue or gum	2 to 3 parts.

Another composition is described by Dr. H. Poltzer. A solution of sulphate of copper is divided into two equal parts—one is supersaturated with ammonia, the other with hyposulphite of soda. The two solutions are now mixed, and the mixture is briskly stirred. A violet-colored powder now deposits, which is a compound, says the author, of hyposulphurous acid with oxide and suboxide of copper, soda, and ammonia. A mixture of this salt with chlorate of potash detonates when struck with a hammer, and when rubbed in a mortar ignites and burns like gunpowder, leaving a black residue.

The above salt the author proposes to use for matches. It is not soluble in water, and the mixture with chlorate of potash is not hygroscopic. The mixture may be made with moist chlorate and the gum solution, and can be safely dried at 50° C. or higher. It inflames when rubbed on a rough surface, and the temperature developed is sufficiently high to ignite sulphur on the stick.

The only difficulty the author finds is in making the mass coherent: when dried on the stick he found that it would crack and drop off when rubbed. A manufacturer will probably soon overcome this difficulty.

The proportions made use of were one part of the copper salt, and two parts of chlorate mixed in a sieve, and then made into a mass with solution of gum, together with a little glass powder. This mixture was applied to matches dipped in sulphur as usual.

Pomade Divine.

Take of beef marrow 3 lbs., put it into an earthen vessel and cover it with cold water; change the water daily for a few days, using rose-water the last day. Pour off and press out the water; add to the marrow four ounces of Styrax, Benzoin, and Ohio Turpentine, one ounce of Orris powder, half an ounce each of powdered cinnamon, cloves, and nutmeg. Set the vessel in hot water, and keep the water boiling for three hours; then strain.

TO CURE A "FELON."—As soon as the part begins to swell, get the tincture of lobelia, and wrap the part affected with cloth, saturate it thoroughly with the tincture, and the felon will soon "die"—poisoned instead of hung, as all *felons* ought to be. An old physician informs us that he has known this to cure in scores of cases, and it never fails if applied in season.

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Improved Flax Dresser.

This machine is intended to clean and dress tangled flax and render it free from the shoove or wooden coating in which it is cased, so as to fit it for working. Fig. 1 represents an end view of the machine and fig. 2 a side view. In the first figure a five armed apparatus, A, is shown attached to a disk, B. These arms have scutching blades, C, bolted on them in such a way that they can be adjusted at will to work close to, or farther from, the dressing board, D. This detail is shown in fig. 2, at E. The flax is laid on a trough, F, and fed to the scutching knives by the roller, G. This roller is set in a bell crank, H, which connects by means of a link, I, with the crank, J, below; a counterbalance on the shaft of this crank serves to regulate the pressure on the flax to be dressed, so that it is held firmly and yet fed regularly by the rollers until the scutching knives have removed the shoove. These knives work close to the dressing board, D, and are made self-adjusting by the springs at their backs so that no matter whether the mass to be dressed is thick or thin the office is properly performed. The disk, B, carrying the arms the scutching blades are on can also be set to dress a given amount of fiber. This is done by means of set screws and collars on the shaft the disk is secured to. There is also a screw stop at, *a*, which regulates the descent of the feed roller and prevents it from coming in contact with the dressing board. The woody portions driven off by the scutching blades fall through at the riddle, K, or sieve portion of the casing in which the arms revolve.

The combination of these several parts, it is asserted, produces an efficient and economical machine for the purpose. It was patented through the Scientific American Patent Office on Nov. 29, 1864. For further information address the patentee, William C. McBride, at Raritan, N. J.

Fig. 1

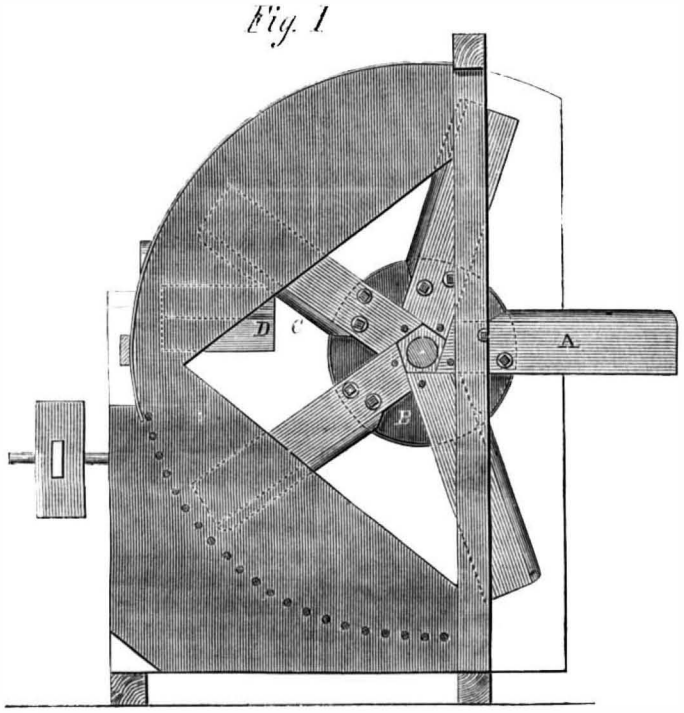
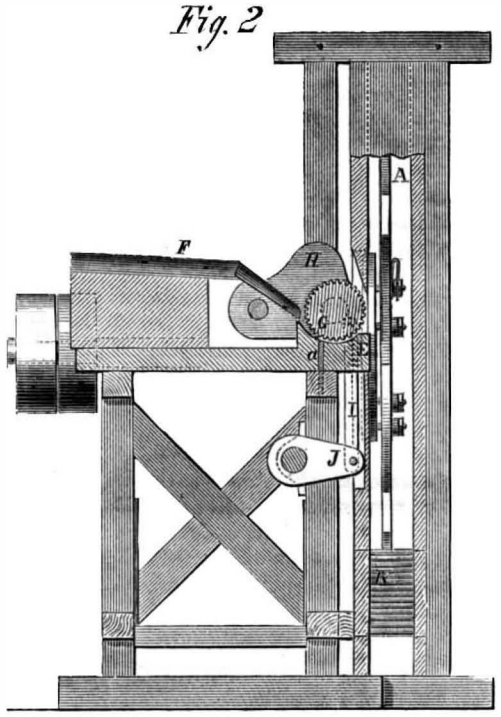


Fig. 2



M'BRIDE'S FLAX DRESSER.

THE METRIC SYSTEM.

When we commenced advocating the adoption of the French system of weights and measures, we were not aware that several co-laborers were zealously engaged in the same work. We have just received from H. E. Johnson, Esq., of Baltimore, Md., a circular published at the joint expense of himself and B. S. Dexter, of Tioga County, N. Y., urging upon Congress the legalization of the metric system.

From this circular we make the following extracts:—"The metric system is used not only in France and her colonies, but several other European nations have adopted it. It is legally established throughout Italy, with the exception of Rome and Venice. Two errors have been committed in Europe, which it is hoped will be rectified and never repeated. In one instance a decimal system has been adopted, founded on a metric system, but not identical with it, and in some instances the names have been, and perhaps still are, entirely unlike the French names. It can not be too firmly impressed upon the public mind that, in order to reap the full benefit of a universal decimal system, there should be, in effect, but one measure of length, one of area, one of capacity, and but one weight, and that the corresponding names in all languages should be nearly alike.

"How can this system be made universal? Every nation should make it the Government standard. The *gram* should be the postal weight throughout the world. Other nations and states should follow the example of Connecticut, and introduce the system into their schools. Let the steps taken be energetic and efficient, for while men buy and sell by different systems inconvenience will be experienced, but when the old system is abolished the inconvenience will cease.

"The long names of the French system constitute an objection which can be easily avoided. They can be abbreviated so that the units will be of one syllable, and the derivatives of two, and yet bearing sufficient resemblance to the French terms to be easily identified. *Metre*, *litre* and *are* should be *met*, *lit*, and *ar*. *Deka*, *hekto*, and *kilo*, should be *Dek*, *hek*, and *kil*. *Deci*, *centi*, and *milli*, should be *des*, *cen*, and *mil*. Then *hektometre* (100 meters), would be *hekmet*, *centimetre*, (1-100 meter), would be *cenmet*. *Hektolitre*, (100 liters), would be *heklit*, and *decilitre* (1-10 of a liter) would be *deslit*.

"As the metric system is entirely decimal no reduction is required, and there is substantially but one measure of length, the *met*, one of the area, the *ar*, one of capacity or cubic measure, the *lit*, and one weight, the *gram*. It is not necessary to point out the irregularities and inconveniences of our present system. How many of the readers of this article can recite our tables of weights and measures without making several mistakes? How many can tell, without calculating, how many feet are in a mile, or how many cubic inches in a gallon?

"It requires but little study to understand the meaning of the terms, *met*, *ar*, *lit* and *gram* and but little mental exertion to remember that *dek*, *hek*, *kil*, indicate respectively 10, 100, 1,000, and *des*, *cen*, and *mil*, 1-10, 1-100, and 1-1000. When these simple facts are learned the metric system is, for all practical purposes, mastered."

If there is any one in this city who takes sufficient interest in the reform to circulate petitions to Congress, Mr. Johnson would like to hear from him.

REAL AND IDEAL—Is the title of a volume of poems dedicated to Prof. Longfellow, by John W. Montclair. There are several meritorious translations from Heine and other German poets; also some excellent original productions by the author. The book is published by Frederick Leypoldt, of Philadelphia, and is sold by Hurd & Houghton, of New York city.

Tar Making in New Hampshire.

From Effingham, along the northeastern shore of Ossipee Lake (or the Great Pond, as it is locally called), and stretching away toward Conway, there are thousands of acres of pine plains, the timber on some portions having been cut. It is from the roots or stumps that the tar is extracted by a company locally organized for the purpose. The largest timber of these "cut downs" has been cut long enough to have all the sap-wood rotted away, leaving nothing but the clear wood. The Rochester *Courier* says, speaking of a spot near the village of Freedom:

"Here they set their stump-pullers at work, pulling from fifty to one hundred stumps each, daily, according to the difficulties encountered. These stumps are hauled to Freedom village, where they are cut and split into pieces about the size of very fine stove wood, and placed in what is called a basket. The basket is a wrought iron cylinder, punched full of holes of about three-fourths of an inch in diameter, and holding half a cord. This basket is taken by a crane and placed in a retort made to receive it. A round top cast-iron cover is then fitted on tight, with a pipe from the center, which connects with a coil of pipe in a condenser.

"The gas and steam passing off from the top of the retort, and through the condenser, comes forth from a barrel in the shape of an acid (which is worth ten cents a gallon among the calico printers, but is here thrown away,) and a red oil. The red oil is then passed through a still, and gives about half its bulk in spirits of turpentine. The other half is thin tar, which is mixed with that which comes from the retort. From the bottom of the retort the pitch which is 'tried out,' of the pitch wood by the heat applied to it, comes forth in the shape of thick tar. There are eight or ten retorts, which bring forth forty barrels of tar a week, and seven or eight barrels of spirits of turpentine.

"A cord of pitch wood gives about three barrels of tar and eighteen gallons of spirits, besides twice that amount of acid. The company have stumps enough dug to keep the factory running until until they can dig again in the spring; and it is said that there are stumps enough left on the plains to last the company for three or four years. The tar is worth about $14 per barrel and the turpentine about $250. Who but Yankees would have brought down the price of tar and turpentine by digging pitch wood stumps for its manufacture?"

TO PETRIFY WOODEN OBJECTS.—Take equal quantities of gem-salt, rock-alum, white vinegar, chalk, and pebbles powdered. Mix all these ingredients; there will happen an ebullition. If, after it has ceased, you throw some wooden objects into this liquid, and leave them soaking for four or five days, they will be transformed into petrifactions.

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