Classical vs. Scientific Education.

Among the gentlemen summoned before the Parliamentary commission for investigating the condition, etc., of certain schools and colleges in England, was Mr. Farraday, who, on the question as to the comparative value of the classical and scientific sys tems of education, said:—

"Up to this very day there come to me persons of good education, men and women quite fit for all that you can expect from education; they come to me and they talk to me about things that belong to natural science; about mesmerism, table-turning, flying through the air, about the laws of gravity; they come to me to ask questions, and they insist against me, who think I know a little of these laws, that I am wrong and they are right, in a manner which shows how little the ordinary course of education has taught such minds. Let them study natural things, and they will get an idea very different from that which they have obtained by such education. I do not wonder at those who have not been educated at all, but such as I refer to say to me, 'I have felt it and done it and seen it, and though I have not flown through the air, I believe it.' Persons who have been fully educated according to the present system, come with the same propositions as the untaught, and stronger ones, because they have a stronger conviction that they are right. They are ignorant of their ignorance at the end of all that education. It happens even with men who are excellent mathematicians. . . . Who are the men whose powers are really developed? Who are they who have made the electric telegraph, the steam engine and the railroad? Are they the men who have been taught Latin and Greek? Were the Stephenses such? These men possessed that knowledge which habitually had been neglected and pushed down below. It has only been those who, having a special inclination for this kind of knowledge, have forced themselves out of that ignorance by an education, and into a life of their own."

Sorghum for Dyeing.

The Sorgho *Journal* recently contained an interesting communication from Prof. Erni, chemist of that department of agriculture, concerning experiments in coloring with sorghum cane, that have been conducted under his supervision. His attention had been called to the subject by reading some acconnts of experiments in this direction. He says the simplest solvent is alcohol, but that is now too expensive, and attention was turned to other materials, thus far with entire success, and at a trouble and expense hardly worth mentioning. All the colors and shades mentioned (crimson, purple and brown), were produced from the same bath, the cloth being afterward drawn through solutions of chloride of tin, bichromate of potassa, sulphate of copper, etc. The Professor continues:—

"Having found upon an upper shelf in the laboratory some canes of last year's growth, sent here for the purpose of analysis, and which had become almost entirely destroyed by insects, I selected a few stalks—the outside of which were more particularly exposed to the atmospheric air, and had become deeply red. With two ounces of the cut cane a great number of samples of cloth were colored, a portion of which are those accompanying this report. The same coloring material found in the stalk is evidently contained in the seed.

"It may be proper for me to add, that it is not important that the canes should be fully matured.

"As far as tested, I find the colors to resist the action of sunlight and water in a most satisfactory manner."

A Photographic Baby.

The following appears in the *British Journal of Photography* of Oct. 28:—"Some time since my wife was engaged preparing albumen paper in the silver-bath, and in a moment of abstraction pressed two of her fingers on her forehead, being at the time about to add another 'olive branch' to the family. Soon after the birth of the baby we were surprised and annoyed at noticing that the child, when in a strong light, exhibited two distinct impressions similar to silver stains before fixing; and the strangest part of the matter is that these disappear as night comes on and reappear as daylight arrives. I have not yet attempted to 'tone and fix' these said stains; and, although at present serving as a sort of actinometer to me, will prove a sad disfigurement to my daughter's appearance in daylight, and we much regret they were not impressed in some less conspicuous place. I am, etc., the father of the Photographic Baby."

The editor adds:—"Were the writer of the foregoing not known to us we should have thrown aside his letter as an impudent hoax; but as we know him well as an excellent photographer, a good citizen, and as being little addicted to joking, we give his communication a place in our journal and leave those more competent than ourselves to explain the strange phenomenon, which we believe to be faithfully recorded by our correspondent."

A Great Engineering Feat.

In Brazil, M. Brinless, assisted by English capitalists, has been engaged in "lifting" a railroad—the San Paulo—over the great Sierra de Mar, a mountainous elevation two thousand feet high. The entire ascent is divided into four "lifts," or inclines of a mile and a quarter each, running at a gradient of one in ten. A level platform or "bank-head" marks the summit of each incline, and at the upper end of the platform is a stationary engine. This engine has double cylinders of twenty-six inches diameter, with a five-foot stroke, and has been calculated to haul up fifty tuns at the rate of ten miles per hour. Five boilers of the Cornish description are placed with each engine. On the upper half of each incline there is a double line of rails, with arrangements for passing places in the middle of each of these "lifts." A single line of rails then runs on from the center to the foot of each of the four divisions into which the ascent is divided. A steel wire rope, one and a half inches in diameter, is made for pulling up the ascending trains. This rope, tested by a weight far exceeding the requirements that will be made upon it, passes over friction wheels, and is attached to the fly shaft. The inclines are therefore partially self-acting, at the same time passing one train down to the foot of the Sierra, and drawing up another to the high levels on its way out to the province beyond. This feat is pronounced a bold and impracticable one, but with science and skill scarcely any physical obstruction can stand permanently in the way of human wants or necessities.

One ravine crossed is 900 feet in span on the level of the railway, and is crossed by a viaduct resting on clusters of iron columns, which spring up from enormous stone piers 200 feet below the center of the line which passes over them. The work is nearly completed, and will then open a way for travel and traffic between the seaboard and the interior. The Emperor of Brazil is making all kinds of useful improvements in his territory, and thereby assisting its industrial and commercial development.

Nashua Iron Works.

The Nashua Iron Company are very busy working up ten tuns of iron daily, to the monthly value of $70,000. Among the specimens of work just receiving the finishing touch are a ponderous crankshaft, weighing seven tuns, for the steam-sloop *Pensacola*, and another shaft for the frigate *Franklin*, at Portsmouth, weighing eleven tuns. These are grand pieces of workmanship. Besides having a great amount of other work in process of manufacture, the company is turning out a large numberof locomotive tires and cranks, axles and shafting for the machine shops at Lowell, Manchester and elsewhere. The number of hands employed in the works is about two hundred, and the monthly pay-roll amounts to $8,000. The workmen are paid all the way from eight shillings to eight dollars per day. About twenty-five tuns of coal are consumed each day. The capital of the company is $125,000.

Lea's Cleaning Solution.

The photographic fraternity is under great obligations to Mr. Carey Lea, of Philadelphia, for the knowledge of the following glass-cleaning preparation:—Water, 1 pint; sulphuric acid, ½ ounce; bi-chromate potash, ½ ounce. The glass plates, varnished or otherwise, are left, say 10 or 12 hours, or as much longer as desired, in this solution, and then rinsed in clean water, and wiped or rubbed dry with soft white paper. We have used the solution in our laboratory long enough to be satisfied of its superior excellence for the purpose specified. It quickly removes silver stains from the skin without any of the attendant dangers of the cyanide of potassium. We think that photographers who once give Mr. Lea's preparation a trial will be glad to discard all others.

MISCELLANEOUS SUMMARY.

A Preparation for Preserving Leather.—We translate from the *Gerber Courier* a receipt for a preparation which is said to insure great durability to leather and to make it very pliable and soft. It consists of four articles, tallow, soap, rosin and water. These ingredients are prepared as follows:—Twenty-one parts of tallow are melted in a vessel, three parts of rosin added, and the two when melted mixed well together. In another vessel seven parts of good washing soap are dissolved in seventy parts of pure rain water. After it is dissolved and the mass heated to the boiling point, we add the part prepared before, let it boil once more gently, and the preparation is ready for use. It is especially adapted to boots, harness leather and belting.—*Shoe and Leather Reporter.*

Sheep Skins for Mats.—Steep the skins in water, and wash them well till they are soft and clean; they are then scraped and thinned on the flesh side with the fleshing knife, and laid in fermented bran for a few days, after which they are taken out and washed; a solution of salt and alum is then made, and the flesh side repeatedly and well rubbed with it, until it appears well bleached; after which make a paste to the consistency of honey, of the alum and salt solution, by adding wheaten flour and the yolks of eggs, and spread this paste on the flesh side; after this they are stretched and dried, and when dry, rubbed with pummice stone.

A Miner on a Strike Starved to Death.—The Birmingham correspondent of the London *Engineer* says:—"An inquest was held last week on the body of a miner who had been on a strike, and who had for some time preceding his death been on a short supply of food, and had to sleep in the open air for eight consecutive nights. A verdict of 'died from cold, exposure, and want of sufficient sustenance,' was returned."

Gas Leaks.—Much gas and labor that are now wasted, might be saved, and the price of it possibly cheapened to the consumer, were there some satisfactory means of finding the precise locality of a leak in the pipes when it occurs outside of a building, and underground. The person who shall invent an efficient gas-leak-detector, will make a fortune and benefit the public.

While filling the reservoir of the Charlestown, Mass., water works, a few days since, the pumps would not operate, and an examination proved that the pipe was completely filled with eels. The next day the trouble occurred again, and on the two occasions over 2,500 pounds of eels were removed.

[Turbine wheels in some of our large cotton factories have been stopped from this cause.—Eds.

To Keep Eggs.—Last August, we placed a thick layer of salt on the bottom of a large sap-bucket; oiled the eggs with fried meat fat, and placed them in the salt in such a way as to prevent touching each other, little end down; then a layer of salt, then eggs, till the bucket was full. Set in the cellar. Used the last in May, and found them as fresh as need be—not a bad one among them.—*Ohio Farmer.*

The number of persons or firms engaged in the manufacture or sale of books in the United States is now about 4,000, of whom about four-fifths are in the Northern or loyal States. Of these 2,000 are booksellers exclusively, and about 200 are publishers of books.

Over seven thousand acres of land have been leased in Perry county, Ind., by a wealthy Louisville company for the purpose of operating in the oil business.

Cotton Thread.—In our article upon the manufacture of cotton thread in this country, published on page 345 of our current volume, we stated that the price of Coats's English thread, so well known here, "speedily ran up to four times its old rates in consequence of the high price of foreign exchange." The Coats cable thread, of a beautiful quality, is now manufactured from long staple Egyptian cotton, a fine sample of which is now before us. The quotation price is given at $1·50 per dozen—which is not much higher than the best American qualities. This subject is one of general interest to our people, and we may hereafter refer to it.

California Wine Culture.—The vintage of California is estimated this year at over six millions of gallons—so much for the present. The crop of wine per acre is from 650 to 1,000 gallons—according to quality and growth. The number of acres fitted for the growth of wine was estimated by Hon. Wilson Flint, President of the California Wine Growers' Association, and stated to the Commissioner of Internal Revenue, to be twenty millions of acres. Others there have named five millions. Taking the least estimate and the minimum yield, we have the capacity of the possible future yearly wine crop of California at 3,250,000,000 gallons.

New Mechanical Action of Steam.—An English inventor says:—"It is claimed that the expansive force of the steam acts equally on the two pistons, and forces them apart with the power due to the area of the pistons and the pressure of the steam, and that the force thus exerted on both the pistons is united and conveyed to the crank shaft; whereas, in steam engines of the usual construction, with a piston working in a cylinder, *half the force exerted is always acting on one of the ends of the cylinder.*"

Dublin International Exhibition of Arts and Manufactures, 1865.—We have received from Mr. P. L. Simmonds, a notice of this exhibition. It will be opened in May, 1865, and will remain open till the end of October. Exhibitors may obtain full information by addressing Mr. P. L. Simmonds, House of the Society of Arts, John street, Adelphi, W. C., London, England.

The American Academy of Arts and Sciences has recently elected the following foreign honorary members:—M. Charles, the mathematician, of Paris, in place of the late Baron Plana; Prof. Bunsen, of Heidelberg, in place of the late Heinrich Rose; and Otto Strure, of the Imperial Observatory, at Pulkora, in place of the late M. Ostrogradsky.

The Detroit (Mich.) *Advertiser* says the low stage of water in the Western lakes is something remarkable. A fall of about two feet has recently taken place, and the water is now four feet lower than in 1861. At some of the ports on Lake Huron it is now difficult to make landings where formerly there was water to spare.

Exhibition of Industry at Stettin.—We have received from Charles J. Sundell, Esq., U. S. Consul at Stettin, Prussia, a notice of an industrial exhibition free to all nations, which is to be held at that place next spring. Articles will be received during the month of April; they will be duty free, but a small charge will be made for the space which they occupy in the building.

East Saginaw, Mich., contains 45 steam sawmills and 47 salt works, with 20 smaller sawmills on the tributaries of the Saginaw. These forty-five mills have fourteen gangs and fifty-two mulay saws, and cut during the year 1864 about 125,000,000 feet of lumber.

Iron ore has been found at Cape Race, Newfonndland, and large quantities are said to be situated along the coast. This will of course account for the remarkable variations which occur in the compass off the coast.

Mr. Hammond, of South Carolina, is dead. He it was who first applied the term "mudsill" to stigmatize Northern mechanics.

Many of our business firms are now using the postal money order as a medium for paying bills in different parts of the city.

M. Du Chaille, of gorilla notoriety, is continuing his explorations in Africa, and has shipped a living specimen of those animals to England.

Coal Dust.—There is a company organized in this city to manufacture fuel out of the dust of coal. They have discovered a process by which the dust is formed and kept in a solid compact mass, and their experiments prove it to be a very valuable fuel. It burns freely and thoroughly, and gives out as much heat as solid anthracite. The coal dust, we understand, can be purchased at the mines, where there are immense quantities of it hitherto unused, for the small price of forty cents per tun, or one dollar per tun if sifted, and it is estimated by the very intelligent persons engaged in the enterprise, that a tun of solidified coal dust can be sold at from four to five dollars a tun.—*Philadelphia Bulletin.*

The ladies of Paris, not content with dyeing their hair red, now dye their lapdogs to match the color of their dresses. Green dogs, yellow dogs and sky-blue pugs are all the rage. Wealthy parties have sets of lapdogs of all colors A purple lapdog would be an addition to a fine landscape!

A confectioner in this city got up a Thanksgiving cake for the Ladies' Home Mission, which was ten feet long, 22 inches wide and 16 inches thick. To make it, it took 1,000 eggs, 175 lbs. of flour, 125 lbs. of sugar and 80 lbs. of butter.

Desultory Reading.

The author of "Waverley" remarks somewhere in that work, that a feeble and indecisive habit of mind is produced by desultory and omnivorous reading. An English critic denies this, and insists that the author himself a direct contradiction to his own assertion. The writer also refers to Pliny, who, according to his nephew, made a sensible observation on reading—that there is no book so bad or so foolish as not to supply something worth recollecting. But then how few books were within the reach of Pliny, the uncle! Pope read everything, and so did Warburton, from the fathers of the church to the last pamphlet by old Dennis. Milton, we are told, spent his youth in poring over romances, and his poetry, remote as his subjects are from those which fill the pages of such compositions, is thoroughly instinct with their spirit; even in hell an astute critic remarks, he finds a corner to bring in Charlemagne and all his peerage fighting in Fontarabia, against the forces sent from Biserta upon Afric's shore. In the temptation of our Saviour we are presented with Agrican and Gallephrone, and Angelica the fair. Nay, when disclaiming the themes of his early favorites as frivolous, he does it in their own language, and tells of impresses quaint, bases and trappings, gorgeous knights at tilt and tournament, etc. Hobbes used to say that he never read books "lest they should make me as foolish as those who do;" and yet the man who translated Thucydides in youth, and Homer after he was eighty, the sturdy champion in a thousand controversies, must have been a most various reader.

After all, as a witty writer has well remarked, little people like to lurk behind great names—to defend their own propensities, by proving them in some degree analogous to the powerful minds of the world. Whatever may have been the habits of some great men, the remark in "Waverley" is founded in good sense. The idea is finely illustrated by the late Prof. Bush, in an early oration, wherein he enforces with great clearness and ability the evils of an unsettled mode of study, and even insists that the moral tendency of desultory reading is pernicious. This may be found in the inadequate and unsatisfactory memoirs of that eminent scholar, published soon after his death in 1859.

Unlimited Glass.

Fitz-Hugh Ludlow, in his overland trip to California, found between Utah and the Humboldt Mountains a large desert composed, as he says, of "sand of snowy alkali." He describes it as one of the most dismal and forbidding spots that was ever traversed by the foot of man; but in view of the extension through it of the Atlantic and Pacific railroad he suggests an interesting possibility as to its future use. He says (*Atlantic Monthly*, p. 616):—"In its crudest state the alkaline earth of the Desert is sufficiently pure to make violent effervesence with acids. No elaborate process is required to turn it into commercial soda and potash. Coal has been already found in Utah. Silex exists abundantly in all the Desert uplifts. Why should not the greatest glass-works in the world be reared along the Desert section of the Pacific Road? and why should not the entire market of the Pacific Coast be supplied with refined alkalies from the same tract?"

This opens up a pleasant prospect. Glass, unlimited glass! A desert of soda and sand, with coal underneath! Glass-works of some thousands of miles in extent, the materials ready mixed, and the furnace, as it were, ready to be lighted up!

NEW BOOKS AND PUBLICATIONS.

Atlantic Monthly.—The *Atlantic* for December is one of the most interesting numbers of this valuable periodical that has been issued during the year. A perusal of its pages is refreshing after the dull and tedious commonplaces of other magazines, or the pert flippancy of smart writers in the ephemeral literature of the hour. Such writers as Mrs. Stowe, Caroline Chesebro, Edmund Kirke and O. W. Holmes, such poets as Longfellow and Whittier, write frequently in the *Atlantic*, and each number has, in addition, articles from other celebrities in the literary world.

The House and Home Papers of Mrs. Stowe abound in hints and suggestions on domestic reform, not the least important one of the series alluded to is that upon domestic cookery. No habit of daily life is more important than feeding the body, but with us the old adage falls true, "Heaven sends meats but the devil sends cooks." Mrs. Stowe appreciates the French system of serving food in an appetizing manner, and cooked with a "toothsome" flavor. Our own want of economy as well as slovenliness in this respect are properly enough deprecated.

The *Atlantic Monthly* for 1865 promises to be more attractive than in years gone by, for with a more extended circle of readers a change in its general conduct seems shadowed forth. By this we mean an effort on the part of the editors to render it more attractive to the general reader; as an instance, the House and Home Papers are prominent. We hope the magazine will have a long addition to its subscription list.

The Ericsson Turret Iron-clads.—Mr. Isaac Newton, First Assistant Engineer in the United States Navy, has recently written a pamphlet on the turret iron-clads, and has forwarded us a copy. We have been interested in its perusal; for the statistics of what foreign powers have done and are doing in this way are compared with our own progress, the results being clearly and concisely stated. We commend the pamphlet to our readers as affording instruction on one of the most interesting topics of the day. Mr. Newton's address is 14 and 15 Studio Building, Boston.

POWDER.

Most persons, probably, suppose that in consequence of the prevailing war the manufacture and consumption of powder in this country must have been greatly increased. But we are assured on good authority that the reverse is the case. The consumption of powder in time of peace is far greater than during war. Gunpowder being an article contraband of war its exportation is prohibited; consequently the immense foreign trade which manufacturers have been for years accustomed to supply, is wholly at an end.

It is a curious circumstance connected with the powder business, that while our Government is in great need of the article, at the lowest prices, it employs the most direct agencies to raise the prices and impede its own supplies. Thus the Government places very large duties, payable in gold, on the raw materials, and then lays heavy revenue taxes on the manufactured article. As the Government is a principal consumer it thus puts itself to the delay and expense of fixing and collecting taxes from itself. One of the results of this foolish plan is to elevate the prices of the raw materials to such a degree that the manufacturers are required to take unusual risks, and employ about three times as much capital, in the supply of their orders, than was formerly needed, and without substantial increase of profits. Under these circumstances, if the wants of the Government cannot be readily supplied, it has no one to blame but itself.