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Remarks on Light and Watered Silk.

Long before the daguerreotype art was discovered, and long before Hunt had written his able work on the "Researches of Light," many phenomena of light were known. Chaptal, in the last century, made the discovery, that when the rays of light were particularly directed upon certain parts of glasses containing solutions of certain salts, the solutions crystallized upon the sides of the glasses which were in contact with the light, and no others. Beccari, Scheele, and others, found that *horned silver*, which is a beautiful white, changed in a few minutes to violet, then black, when exposed to the sun's rays in a transparent glass. Sennibair made the discovery as early as 1790, that the muriate of silver, when exposed to the violet rays of light became black in 15 seconds; exposed to the purple, 23; to the blue, 29; to the green, 37; the yellow, 5 minutes 30 seconds; the orange 12 minutes, and the red 20. He says, "the rays of the three last colors would not produce such a dark violet color in any length of time, as the more refrangible rays." This able French chemist came very near discovering *actinism*. Berthollet, however, took the ground that light produced changes in color by an effect similar to combustion. There can be no doubt but that all the colors we perceive are the reflections of very minute crystals, and these crystals are the result of a great chemical resolving law in nature, and that law is actinism, as set forth in an article in our columns last week.

In connection with light and photography, there is still a difference of opinion among philosophers respecting *light* as a distinct matter of itself. Some at once say, "light is an imponderable subtle fluid, or matter of itself;" others more cautious say, "light is conveyed to us by vibrations," and this is all the length they go, but afford no very good argument even for this theory, and although it does not at all militate against or conflict with the theory that light is a subtle fluid, it only relates to its mode of action. Light may be a subtle, imponderable fluid, and its mode of action may be by vibrations, and these vibrations caused by resisting media, or the shooting from angle to angle like lightning in a resisting cloud. The vibrations of light are wave lines, and these can be daguerreotyped by mechanical pressure. We will now allude to a process of manufacture in proof of this—a proof which no philosophical work that we know of mentions, and a fact with which philosophic authors seem not to be acquainted.

If we take a number of fine threads, say 1,000, and hang them up against the window light, perpendicularly, like weaver's heddles, then by taking another set and hanging them up the same way, so as to have a double tier of threads, we will perceive by looking through them, fine waving lines. The warps for webs, when passing vertically between two parallel rollers on a dressing-frame in a cotton factory, show this phenomena in a peculiar manner. It is also exhibited in double screens of fine wire placed in the windows of some houses. It does not merely require the threads (which are resisting lines) to be parallel and perpendicular, they may also run horizontal and at right angles to the perpendicular lines. Let any person take a plain woven silk handkerchief, fold the two selvages together, and hold it up double before the eyes against a window light, and all the phenomena of the wave lines are plainly revealed. These wave lines are of a form exactly like the *watered silk* worn as an article of apparel. Well, how many know the way watering is produced on silk? It is not woven in, for the silk is woven quite plain. Hard, plain, worsted fabrics, such as "marine curtains," are also watered; this is not woven either. We suppose that most people think the watering is produced by machinery, such as rollers with waving surfaces cut on them, or by some such process; this is not so, the watering is produced in the most simple manner, by the simple pressure of the silk between plain surfaces. Take some pie-

ces of coarse plain silk, fold them double, with the one selvage upon the other; lay them between sheets of pasteboard and place them flat in a press, such as a bookbinder's, and submit them to a severe pressure, taking care to let them remain in such a situation for a few hours. When this is done, take them out and it will be found that the two inside surfaces of the pieces of silk, are finely wavelined (*watered*)—the wave lines of light are thus daguerreotyped by simple mechanical pressure. It makes no matter what the color of the silk may be, black, red, yellow, blue, and white, —the *primary*, union, and nullified ray colors, all show the wave lines alike, when submitted to the same process. There are no sun rays required to produce this effect, but the sun light enables us to see into the philosophy of the matter, by holding up the doubled silk handkerchief.

Light is a subtle, imponderable fluid contained, perhaps, in every substance; it is highly developed in the sun beam, and by the combustion of various substances. It is given out in minute rays (so is electricity, we believe), which, when resisted by any medium, exhibit vibratory phenomena, like the watering of the silk. The fine lines of the silk are the resisting media, for plain surfaces like paper, cannot be watered. Twilled fabrics show exceedingly minute water lines, like the mingled wave lines from a number of centres, produced by throwing stones into a smooth pool of water. Fine silk also shows minute wave lines, because the deflecting lines are more numerous and less prominent. The phenomena of watering silk is well worthy of a place in all works on optics and natural philosophy. We hope that no elementary work of natural philosophy will hereafter be published without embracing an account of this beautiful development of a law of nature in the production of a fabric esteemed as an article of dress by the rich, the fair, and gay.

Meat Biscuit.

The Galveston Civilian states that a factory with proper machinery for manufacturing Meat Biscuit, has been established in Galveston, Texas, by G. Borden, jr., and is called the Meat Biscuit Factory. According to the description, the meat is minced, then boiled till all the jelly or gluten is extracted; two pounds of this jelly, containing the nutriment of eleven pounds of meat, is then mixed with three pounds of flour, and baked till the five pounds are reduced to four. Each biscuit is then packed in pulverized biscuit of the same kind, in an air-tight case. The same journal says that the War Department have ordered a large quantity of this biscuit for the troops on the frontier; and it pronounces the article and the process of making it—a new discovery.

All this may be a valuable discovery, especially for travellers across the Western Deserts, and for troops stationed in quarters remote from sources of supply. And it may also be a valuable discovery for shipping, especially on long voyages, in furnishing a portable, agreeable, and nutritious article of food. But we beg leave to protest against the general novelty of the discovery, however *novel* it may be in Texas. This discovery was made in France, as early as 1830, if not earlier; and the article was then described as "animalized bread." The French journals described it, and stated that it had been ordered by the government for the armies in Algiers. In the French mode of manufacturing it, all parts of an ox, excepting the *hair*, were reduced to their elements, and the jelly or gluten extracted. The bones, the hide, the hoofs, horns, intestines and muscular fibre, were decomposed by heat, and their gluten separated from the lime and all other substances. And this was described as economical, the hoofs, and horns, and bones containing much gluten, and being more valuable for this purpose than any other. To our unsophisticated Anglo-Saxon tastes, the Texan mode, in which good minced meat, fit for a change at breakfast, is alone used, may seem the most acceptable. And the very thought of eating bread made from hides, hoofs, and horns, or the raw material for shoes, buttons, hair combs and powder horns, might occasionally put a fastidious appetite to flight.

But this is mere prejudice; for chemistry can easily convert any thing into anything else.— [Philadelphia Ledger.

[So far as we have been able to gather information on the subject, we believe, that the French animalized bread was merely portable soup or gluten cakes. Mr. Borden's soup-bread is a different preparation, and he was granted a patent in 1851 for the same. He takes the very best quality of beef which can be found in Texas, and extracts the gelatine from it by a low steam heat. This is afterwards—in a state of spissitude—kneaded with flour or any kind of vegetable meat, into cakes, and baked slowly in an oven heated by steam. By using a high heat to extract the gelatine from the meat, a very unpleasant flavor is communicated to it, for the high heat sets a portion of the phosphorus contained in the bones free, and this gives an unpleasant odor to the extract. Mr. Borden carefully avoids this—his extract is of as fine a flavor as Liebig's portable soup, and the baking of it into cakes, along with vegetable substances, enables it to be carried with ease over mountain and sea, and tends to preserve it from atmospheric influence, so as to prevent putrefaction. In Texas beef is very cheap, so are fowls, such as turkeys, chickens, &c. Of this kind of meat, the very best alone is used by Mr. Borden. The patent claim is for the combination of the condensed extract of meat mixed with vegetable flour, either unbaked flour or crushed crackers, and the whole baked into biscuits. We have eaten some of Mr. Borden's biscuit, made into soup, and liked it very well; an ounce of it made a good hearty meal. The great object of Mr. Borden is to use the best and most healthy substances to make an unexceptionable animal bread. He thought at one time of locating himself in New York, but the cheapness of cattle in Texas presented a field for securing the best materials at a low price. It is the quality of this *bread* which constitutes its essential value, and it is the ambition of Mr. Borden to make this a new and useful article of American commerce. For sea voyages and long overland journeys, we believe it to be a grand compact article of food, and the time may come, when it will be found in every house in our land, as a most excellent and cheap basis of our soups.

The Telegraph in France.

In France the Telegraph has been a government concern entirely—the public not being permitted to use it. What a blessed lot of liberty such a people as the French must have, when they are prohibited by the government from using all the best means of communicating intelligence, either to friends or upon business matters. We will never believe that the people of France have arrived at a decent sense of liberty until the notorious passport system is abolished, and more personal freedom secured to the humblest of Old Gaul. In respect to the Telegraph, we perceive that a step has been taken in the right direction, by M. Le Verrier, in the name of a committee appointed to examine a Bill authorizing the use of the Electric Telegraph for private correspondence. He pays a decided compliment to the enterprise of the United States, in the rapid spread and extent of our telegraph lines, and he enforces the reasonableness of opening the French lines to the public, saying "this example may, in some respects, be turned to advantage in France."

Low Railroad Fares.

We believe that nothing will so much tend to the advantage of railroads as low paying fares. It is large numbers in the aggregate which tell best on the receipts after all. When our present postage law was reformed from 25 to 10 cents on letters for whatever distance, many predicted that the expense would far overtop the revenue. This has been tried and found to result in quite a different balance—it being in favor of the low postage. There is a minimum point in low fares, but in many railroads they have not descended to that point, although if they would, we have no doubt, but, as in the case of letter postage, the results would be beneficial. We like to see cheap means for the many to travel. It

makes man more human to see the world run round in a railroad car. Railroads are grand means for facilitating travel and brushing away the rust from drowsy swains, and nothing can tend more to this than cheap trains.

Twenty-five Dollars Reward

Calvin Waldo, Jailor, and B. F. Dickinson Deputy Sheriff, offer the above reward for the arrest of John W. Ross, who broke from the Orange Co. Jail, Chelsea, Vt., on the night of the 22d Feb. He is described as being about 5 feet 6 inches in height, about 18 years old, had on a tweed sack coat of redish color, with black cotton velvet on the collar and cuffs—vest of the same kind of cloth with gilt buttons, dark grey pantaloons, redish colored silk plush cap, whiskers of about ten days growth and of sandy complexion.

Mr. Otis Brewer, publisher of the Boston Cultivator, says that the above described Ross was arrested on his account as an impostor, and was to have had his trial on the 25th ult. He had been operating as an agent for the Cultivator, New York Scientific American, and perhaps other papers, and his line of trade was from Burlington, Vt., through Montpelier, and down as far south as Randolph, and perhaps farther, representing himself as his son, and signing his name as Charles Brewer. We suppose that this is the same impostor noticed by us in No. 20, and we sincerely hope he will be arrested and that justice may be meted out to him; such scoundrels are too numerous by far.

The Prometheus Steamship.

Mr. C. Vanderbilt has published a letter giving some account of the performance of this steamship. He says he built the Prometheus upon principles which he thought correct for a sea steamer, and that she has run 5,590 miles—consuming only 450 tons of coal. She ran 2,150 miles in eight days and nine hours. He concludes as follows:—

I consider the Prometheus, in her combination of qualities, far superior to anything afloat. I will venture a large wager that there is no ship afloat, and none that can be built within twelve months, having any other plan of engines of the same size in proportion to the capacity of the ship, that can make a winter passage in the same time, with the same quantity of fuel.

Our Atlantic Steamers.

E. K. Collins, Esq., has presented a petition to Congress requesting a larger appropriation for his steamships. The reasons set forth are the great expense to which the projectors have gone to have a class of American steamships second to none in the world. The Committee of Ways and Means are favorable to the granting of an additional sum in aid of these our Atlantic steamships.

The Cheap Postage Bill.

This Bill has now become a law. We are soon to have three cent pieces coined, for the purpose of meeting the demands of this Bill. Three cents on letters—good; there is nothing like pushing along those reforms which benefit the millions. The next movement must be for a cheap ocean postage;—twenty-four cents for a letter to Liverpool, and *vice versa*, is not only bad policy, but it is an unjust charge for the service rendered. Ten cents would bring in more money to the Treasury.

Pavements.

Mr. Davis, of this city, whose pamphlet we noticed, has called upon us and directed our attention to the iron plates in Broadway, which have been down for nine years. He wishes us to give his pavement a fuller investigation, as he is confident it is superior to all others. We will give the subject a fuller investigation, and speak honestly our convictions, as we do upon every subject, and we will freely point out wherein we may have been mistaken.

A Brother Gone.

Mr. F. J. Brognard, Editor of the New York Organ, departed this life on the 20th ult., after a short and severe illness of only 24 hours. We knew him to be a kind and amiable man, and an Editor of no ordinary abilities.