Scientific American.

NEW YORK, MAY 26, 1855.

The Ericsson Steamer Again.

On the 12th inst. the *Ericsson* made her second steam trial trip down the Bay, with the owners, engineers, and a number of invited guests on board. Speeches were made, toasts were drank, and high compliments were paid to the genius which had contributed to make this vessel, as a steamship, surpass all others, by some new inventions in economising fuel. The New York *Tribune* of the 14th says respecting it, "Capt. Ericsson claims to have made a very important improvement by his new condenser.—The saving is great in fuel, in the wear of the boiler, and the labor of cleaning it through the use of fresh water in lieu of salt. Altogether, as a steamship, she comes near the caloric standard of cheapness of power."

What the caloric *standard* of cheapness of power is, must belong to the *Tribune's* system of indefinite engineering, as it says, "the speed of the ship on her trial trip was about twelve miles per hour, with an alleged consumption of three-fourths of a tun of fuel per hour." And all this by the substitution of outside for inside condensers. Prodigious! We have no hesitation in asserting that this is not true; also that this vessel will use just as much coal in proportion to the steam power she exerts as any other steamer in our country. An outside condenser has only the advantage of being easier cleaned than the boilers of a steamer using salt water; but it cannot save fuel on this account. Nay, it will require more fuel, as the condensation of the steam, by metallic surface refrigeration, is eight times slower than by direct contact—injection. The faster steam can be condensed, with the same quantity of water, in any engine, the greater must be its economy; this is self-evident.—Capt. Ericsson is not the first inventor of surface condensers. This method of condensing steam is older than by injection.

Two years and four months ago, exactly to a day, (Jan. 12th, 1853,) the same vessel, known then as the "hot air" *Ericsson*, made her *successful* second trial trip down the Bay, with a great number of invited guests aboard also, and a grand time some had of it. The editorial corps of the New York Press, professedly and really shrewd on general subjects, were completely gulled on the occasion. They were told by Capt. Ericsson that he heated 1560 tuns of air up to 450° in twenty-four hours, with six tuns of coal (260 tuns of air by one tun,) and they actually swallowed the *faggot* as if it were a sugar plum. Capt. Ericsson also told them that it was difficult to make his furnace too hot, and that the heat produced no ill effects upon the bottom of his heaters. With such statements—ignoring their very senses—they were filled brim full of enthusiasm for *caloric* and *hot air*, and one of them pronounced a funeral oration over steam, while another sung a requiem over the memory of Watt and Fulton, to the tune of "the days of steam are numbered, and Ericsson is the ruling genius of the present." With the accounts which were then published in the daily papers, the whole country was electrified, for the people could not believe that so many respectable men could or would propagate for truth so much that was untrue.

The success of the hot air *Ericsson* was pompously and dogmatically declared to be a *fixed fact*; and hundreds of orders, it was asserted, poured in upon Ericsson himself for hot air engines. The proprietors of the New York *Evening Post*, made arrangements with him for a hot air engine to work their presses, and many began to sneer at steam and call its advocates old fogies.

What now do we see as the climax of all the fuss and fury then exhibited respecting the "caloric ship?" Why we behold it, after having cost more than half a million of dollars and two years tinkering, converted into a steamship, and hot air abandoned as an unsuccessful project.

Having said so much on this subject (although we could say much more,) we suppose our readers are about tired of it. Were it not for the particular circumstances of the case at this time, we would not have touched the question; but these justify us, especially in the correction of erroneous statements, as the *Tribune* still asserts that the hot air engine theory has not yet been proven practically unsound. We hope no person hereafter will again be deceived by such an assertion. Hot air never will supersede steam as a motive agent. Theoretically and practically, it has not the favorable qualities of steam as a motive agent. No better evidence has ever been afforded to the world in proof of this than the *Ericsson* itself, and it gives us pain to see any person so blind to facts and candor as to deny this.

Coal Fields of Turkey.

Near Heraclea, on the Black Sea, there are some fields of excellent coal, which but for the indolence and want of enterprise in the Turks, might long ago have been the means of assisting in the regeneration of the manufactures of their country. These fields, however, are being worked at present, and have been feebly since 1850, and it is expected that in a short time they will yield sufficient for the purposes of steam navigation on the Black Sea, and the army in the Crimea. The mines are only about 12 hours' steaming from Constantinople, and the seams vary from 3 to 12 feet in thickness.

The country in which the coals lie is varied with hills and dales, resembling very much, in its general features, the mining districts of Wales, those in the neighborhood of Liege, in Belgium, and Aix la Chapelle, in Prussia; and the coal stratum is distinctly seen on the section of the sea-cliff for more than 40 miles along the coast. The want of fuel has been most acutely felt in the Crimea, and steam-coal has been supplied to British shipping in the Black Sea at heavy expense.

The supineness of the Turks has been the source of all the difficulties in mining coal and making iron to supply themselves, for they have an abundance of these minerals.

The Oxygen of the Atmosphere.

Two weeks ago (on page 273) we noticed the ridiculous idea put forth by Daniel Vaughan, namely, that a removal of some of the oxygen from the atmosphere quickens the intellectual faculties and developes the finer feelings of the mind; and stated that this was an erroneous notion. In confirmation of our views, we find it stated in the recent lecture of H. Macworth, read before the London Society of Arts, that a deficiency of oxygen of 10 per cent. in the atmosphere of mines produced stupor quickly and eventually death. We hope no student will act upon the idea of Mr. V., in an endeavor to quicken his mental faculties, by studying in an atmosphere deprived of any of its oxygen.

The Maynooth Battery.

About two months since a correspondent made the inquiry of us, "What kind of galvanic battery is it which is called the Maynooth or Callan's Battery?" We informed him that we had read considerable about it in foreign journals, but were still in the dark respecting its true nature,—in other words, wherein it differed from other batteries. We promised, however, to keep a look-out for the information he requested. This we have found in a recent number of the London *Mechanics' Magazine*, contained in a letter of Prof. Callan himself, in answer to some person who disputed its title (the battery's) to novelty or usefulness.

From the long letter of Prof. Callan, of Maynooth, we learn that his battery consists of cast iron, for a negative metal, and amalgamated zinc for a positive metal, and the use of a single fluid, instead of two different fluids in separate cells, such as nitric acid in one (negative,) and dilute sulphuric acid in the other (positive,) as in the Grove battery.

The single fluid used by Prof. Callan consists of diluted muriatic acid, or muriatic and sulphuric acids mixed together, and diluted with a little more than twice their quantity of water; (salt and sulphuric acid answer the same purpose.)

All that is new about the battery is the exciting of the cast-iron and the zinc, by the same fluid. The fluid itself is not new as an excitant, nor is the cast iron new, as a solid element, but these two metals, he asserts, have never been used together before, and excited by the same fluid.

Universal Weights and Measures.

Our readers will remember that on page 251 we recommended, in common with the Philadelphia *Ledger*, the adoption of universal weights and measures to supersede our present inharmonious and absurd systems. By the last news from Europe, we perceive that the British Parliament has made a movement to effect such a reform. The movement is a proposition to hold a Congress of Nations for the purpose of agreeing upon a common system of weights and measures.

We hope this proposition will be adopted in Parliament, and reciprocated by every civilized nation. Our country will surely give a hearty response to the suggestion; and the war in Europe should not prevent the contending nations joining in such a Congress for so important an object. It is a scientific as well as a commercial question, and as science makes all men brothers, men of all nations can meet for consultation on this platform, consecrated by the bonds of peace and good will. In a few years we hope to see a universal system of weights and measures prevailing throughout the whole world.

History of Staining Glass.

At a meeting of the Farmers' Club of the American Institute, held in this city on the 8th inst., Prof. Mapes stated that "a few years ago the art of staining glass was unknown, when at a club something like this—only composed of mechanics—a member stated he had stained glass blue with cobalt, and another, that he could color it red with ease, but not blue, until finally others came forward with their facts applied to other colors, and when all were combined, the result was a mass of facts that has produced the beautiful combinations of colored glass equalling the art when it was applied to the old cathedral windows, centuries ago, in Europe."

This was a strange statement to make for such an old professor of chemistry. The art of staining glass has been known for centuries, and although it ceased to be practiced, but to a limited extent, during the 17th and 18th centuries, still it never was lost. It is described in all the old works on glass-making and ornamentation.

Hoard's Gas Regulator.

On Wednesday last week, we witnessed the successful operation of the gas regulator of J. W. Hoard, of Providence, R. I., for which a patent was granted on the 13th of March, and the claim published on page 222, Scientific American. The exhibition took place in the gas meter manufactory of Samuel Down, at the foot of 22nd street, North River, this city—Mr. Down conducting the experiments.

The object of the apparatus is to regulate the supply of gas to burners, and render it uniform though the pressure in the main or street pipe may be unequal or irregular. We saw the regulator tested with a gauge on the main and another on the burner pipe, and it operated correctly, although the pressure on the main gauge was purposely made to vary considerably. There were six burners employed to test the small regulator, and we could perceive no difference in the pressure when one or the whole of them were burning—or when two or more were shutoff,—it operated accurately under every test. This gas regulator of Mr. Hoard is so constructed with a spring pressure cup that it will not clog if any tar should pass over, a fault belonging to other regulators that have heretofore been used. When it is put into operation it will continue to work without interruption. Applied to a house where gas is consumed, the supply to the burners is uniformly regulated at any pressure below that of the street, consequently it will save a great expense to consumers, as much loss is, in general, caused by the irregular pressure of gas in the street pipes.

A high pressure on a burner, while it wastes the gas, produces a feeble light; whereas a properly regulated pressure on the burner, while it saves gas, produces a softer and better light.

This regulator of Mr. Hoard is very simple and neat in construction, not liable to get out of order, and Profs. Torrey and Gibbs, and other chemists of this city, who have witnessed its operations, have expressed their opinions commendatory of it. Patents are now being taken for it in Great Britain, France, and other countries in Europe, and it appears to us, that it ought and will win its way into general use.

The Olive Culture.

As the Patent Office has distributed a number of olive cuttings among various planters in different Southern States, we hope they will receive that care and attention which we think they deserve. The successful cultivation of the olive, for the sake of its oil, would be of much benefit to our whole country. It is scarcely possible to get any pure olive oil in this or any other city in America. Nearly all that is sold for such is adulterated lard oil. As an article of use for the table, pure olive oil is sweet and pleasant to the taste. For perfumery it ranks higher than any other, and for making the finest kind of soaps it has no superior.

In medicine for anointing the bodies of those who have weak lungs, and are predisposed to consumption, Dr. Simpson, of Edinburgh, has found it to be very healthful and invigorating; and as a substitute for cod liver oil, to be taken as a medicine, Prof. Bedford has awarded it a high character. For these reasons we hope the cultivation of the olive in our country, will prove entirely successful.

Guano for Insects.

A correspondent of the *Horticulturist* says "Some time last summer, while budding some young peaches, I found that ants had taken possession of some ten feet in one row. They very earnestly resisted my attempts to inoculate the tree, inflicting many unpleasant wounds on my hands and arms. In order to disperse the warlike little nation, I sprinkled near a pint of fine guano along the little ridges. This threw them into immediate consternation. I noticed little collections of winged ants huddled close together, and seeming to be quiet, while those without wings ran about in great agitation. The following day not a single insect could be found where the day previous they appeared to be innumerable."

Guano is also said to be a remedy for the striped bug, when put on cucumber hills, taking care not to sprinkle it on the leaves.

Patent Office Doings.

The following changes have been made in the Patent Office:—Wm. Chauncey Langdon, of Kentucky, Assistant Examiner of Patents, is to be Chief Examiner; and Wm. Reed, of Delaware; Amos T. Jencks, of Rhode Island; Thomas H. Dodge, of New Hampshire, and Isaac D. Toll, of Michigan, appointed Assistant Examiners.

Nutriment of Flour and Potatoes.

One hundred pounds of good wheat flour contain 90 pounds of pure nutritive matter and 10 pounds of water. One hundred lbs. of potatoes contain from 20 to 25 pounds of nutritive matter, consisting almost entirely of starch, and 77½ lbs. of water and inert matter. It requires 400 lbs. of potatoes to supply the same amount of nutriment that 100 lbs. of wheat flour supply. The best potatoes weigh about 64 lbs to the bushel, and a bushel contains 15 1-5 lbs. of nutriment. The common white bean contains about 93 per cent. of nutritive matter.

The Canadian Parliament has passed the bill appropriating between three and four million dollars to the aid of the Grand Trunk Railroad.

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