

Scientific American

NEW-YORK, APRIL 2, 1853.

The Credulous and Incredulous Respecting Inventions.

When any of your feather literati writes about the opposition which had been made to certain inventions (when they were first brought out) which have become famous, and of such great value to the world, they are sure to mark the opponents of them as having been men of scientific reputation, such as Dr. Lardner and his alleged opposition to Atlantic navigation. Now it is not true that men of real scientific reputation have in general been the opponents of new inventions, but the very reverse. The most incredulous and yet most credulous of men respecting new discoveries and inventions, are your light literati, your would-be great men in all things. These are the men who are always at the ear of the public, and who both ridicule and extol useful, and worthless new projects, without either rule or reason. And it always happens when an invention or a discovery which they had denounced turns out in spite of all opposition to be a grand and useful improvement, they are sure to turn round, spangle it with praise and bear false witness against scientific men. When corrected for making erroneous statements they have not the honesty to publish the truth, consequently their falsehoods go on among community like rolling snow-balls, increasing in the magnitude of their evil according to the space over which they travel. When any new project which they had lauded to the skies, turns out to be a worthless, useless, piece of trash, or has been proven to be a deception, they are the very men who happened to see through it all from the very first—they were the true prophets, and some scientific men were the deceivers or deceived. When they make false statements about inventions and inventors, thereby doing great injury sometimes to the fame of honest men, they have not candor enough to correct themselves for fear the public would be led to doubt their sagacity and veracity. Those who examine beneath the surface of society, know how to estimate such characters, they look upon them as the moths of literature.

With respect to a new invention—its usefulness and practicability, or not—an opposing candid opinion with reasons annexed, should always be esteemed of more value than indiscriminate praise. At the present day, when men of all characters rush out with alleged new discoveries and inventions, universal laudation of everything is the greatest evil that can be inflicted on community. Candid opposition and prudent praise, respecting what is apparently bad, and what is reasonably good, are the qualities which we like to see displayed in any man, and these qualities of character are always exhibited by those who are competent judges of new inventions and discoveries—those who have devoted their time and attention to such matters.—Why? because their reputation in respect to the opinions they advance on such subjects is at stake; they, of necessity have to be honest, cautious, and discriminating; if not, sooner or later, they will be the losers. In these days of false lights and false pressures, the public should be exceedingly cautious of those who express opinions about new inventions and discoveries lest they be deceived by credulity in bad projects, and incredulity in good ones.

The Power of Heat and Cold.

It has often surprised us to see what an amount of clap-trap and deception there is in a name. For a great number of years heat had been employed in combination with water to form—a useful agent—steam, which for a long time had driven our engines, looms, steamships, and locomotives, and has done good service, but then it was nothing but steam, a plain old fashioned name. Well all at once there has arisen a great rival in fame to it, which has been called caloric (in common language heat) which no sooner has made its appearance under such a cognomen, than straightway the whole race of light literati—the lovers of long names, fall down

and worship it, and not only speak lightly of the services of such a faithful old servant as steam, but deny their value. We were amused in reading in one of our daily papers last week, a slap-dash article on steam and caloric in which the editor writes the epitaph of the former and the prologue to the reign of the latter. The caloric of the said paper was nothing more nor less than hot air—heat and air combined, and no more caloric in reality than steam is.

The power of steam is developed by a chemical action, viz., simple combustion, hence we cannot obtain power from a steam engine without burning fuel. It is this application of chemical force to move machinery, which has changed the whole face of society, in respect to commerce, travel and manufacture during the last century. It is this action which now unites far distant lands by a few days' ocean journey. The quantity of coal consumed to move a machine may then be considered the exponent of power to propel machinery. The power of a certain quantity of coal must be definite—it cannot have the property of developing infinite force, because the heat which is developed by the combustion of a certain quantity of coal is definite. By no plan but the hocus-pocus of humbug (excuse the term, we would not use it only it is the best for the purpose) can it produce but a certain quantity of motion—mechanical power. There are men, however, who pretend to know something about science and logic—but they never surely studied philosophy nor consulted reason—who have asserted that a certain quantity of heat once developed by the combustion of a certain amount of coal, will produce an infinite quantity of motion. They say, "heat produces motion, and when a certain quantity of it is developed in steam and then condensed, it is annihilated and lost, but the heat of hot air is given out, taken up by wire gauze, given out again, and so on, never lost, but going on producing an infinite amount of force." Their principle of logic may be thus defined mathematically.  $a \times b = c - b = a \times b = 2c - b = a \times b = 3c$ , &c.,  $a$  is a certain amount of heat,  $b$  is a certain amount of air, and  $c$  the stroke of an engine. The above is absurd, and points out clearly the reasoning of the hot air philosophers, who assert that a definite amount of heat can produce an infinite amount of motion—any number of strokes of an engine by multiplying and subtracting the same quantities of heat and air to and from one another alternately.

Heat produces great changes; it causes bodies to move with great rapidity, but cold is as much the source of such a power as heat, it produces as great changes. If the earth, sea, and air, and the whole universe were of one temperature there would be no motion.—It is the exhaustion of the hot steam and hot air into a colder medium, which makes their respective engines move; they could not exhaust into mediums of the same temperature. How absurd then, to talk of heat being the cause of all motion in machinery. It requires both heat and cold to produce motion (by chemical forces) in machinery. Heat heaves up rocks from the depths of burning craters; cold splits rocks to pieces, and bursts hollow balls of iron into fragments. The currents of the ocean, and the whirlwinds in their wrath are not produced by heat alone, but heat and cold, they are the effects or combined causes.

These principles of mechanical philosophy as set forth, we hold to be incontrovertible; there is a philosophy falsely so called which has recently been propagated in this and other cities, and which we have endeavored to controvert, because we believe that the promulgation of any error in science and art hinders the progress of truth and retards the march of discovery.

Commissioner of Patents.

The Hon. Charles Mason, of Iowa, a brother of Senator Mason, of Virginia, has been appointed and confirmed Commissioner of Patents.

Mr. Mason is understood to possess high legal qualifications, and it is confidently expected that his administration of the affairs of the Office will prove highly satisfactory to the whole country. It gives us much pleasure to bear testimony to the ability and courtesy of Mr. Hodges, the late incumbent. His appoint-

ment was most judicious and highly complimentary to Mr. Fillmore's judgment. We predict for Mr. Mason, also, a popular career.

The Crystal Palace.

The attention of our readers is particularly directed to the following correspondence between Messrs. Wood, Light, & Co., manufacturers of machinery, Worcester, Mass., and the managers of the Crystal Palace:

WORCESTER, 21st March, 1853.

To the Association for the Exhibition of the Industry of all Nations, No. 53 Broadway, New York City:

GENTLEMEN.—We observe this morning an article in the "Scientific American," headed "The Crystal Palace," the perusal of which has led us to the following conclusions, viz., that if the article referred to be true, we do not consider ourselves bound to forward for exhibition the machine we intended for that purpose, it being so entirely different from what was represented to us by your agent when he visited our works. We remain most respectfully yours very truly,

WOOD, LIGHT, & Co.

[ANSWER]

Association for the Exhibition of the Industry of all Nations, Office No. 53 Broadway, New York, 22 March, 1853:

MESSRS. WOOD, LIGHT, & Co., Worcester, GENTLEMEN.—In answer to your letter of yesterday, I enclose you your application for space, which is considered as withdrawn.—The Committee was disposed to consider it as favorable as possible but in view of the very hasty conclusion at which you have arrived, they have no reluctance in assigning the space relinquished by you to some other of the many worthy applicants who would otherwise have been excluded. I have the honor to be your very obedient servant,

WM. WHETTEN, Sec.

P. S.—Mr. Joseph E. Holmes, who called upon you, desires to express his surprise that you should have paid so much attention to a publication not only not authorized by the association but in manifest hostility to it, and growing out of a sentiment of personal resentment, the source of which was made public some months since."

[The above correspondence between Messrs. Wood, Light, & Co., and the Crystal Palace Association resulted, as most of our readers will understand, from an article which appeared in number 27, headed "The Crystal Palace," wherein we commented upon the injustice of compelling exhibitors to pay for admission, which we learned it was their intention to do.

The letter of the Association if construed strictly in accordance with the language held forth, fully confirms the impression expressed in our article, because the firm did not wish to be considered as bound to forward a machine providing they were to be charged for admission to the Palace, and without hesitancy their application for space is returned to them, thus virtually acknowledging that the charge would be made.

If, however, such is not their intention, then we say that the treatment of Messrs. Wood, Light, & Co., is beneath the dignity which ought to characterize the management of so important an enterprise, and must draw forth the condemnation of all high-minded men; why had not these gentlemen a right to enquire into a matter in which they were interested, and why should they not have been treated with common civility? The public must and will doubt the motive which prompts an association to acts so small and contemptible.

The motives attributed to us in the postscript are simply false and ridiculous, and would not elicit any remarks did we not wish to still further illustrate the spirit which pervades the management. We have repeatedly asserted that we hoped the exhibition would prove successful; we have no other wish at heart and never had after it was fully settled that it was to take place.

We intended from the first and still intend to keep an eye upon the manner in which it is to be conducted, and we are bound as independent journalists to express our disapprobation of all attempts to disregard the rights and interests of contributors, who alone are able to render it an affair creditable to the na-

tion. Our position is, and we hope always will be above the influence of place and power, and we intend that the public shall not suffer by our applause or objects doubtful in their character.

The Association did "not authorize" the publication of our remarks; well really this is quite cool, we are happy to inform the public that the Scientific American is not the official organ of the company, we are the organ for the people—the exhibitors—in whose welfare we feel much interest.

Events of the Week.

VALUATION OF INDIGO.—As a great deal of indigo is used for dyeing in our country, and as the imported kinds (Bengal and Guatemala) are very high in price, a method of estimating the comparative value of different samples, must be very acceptable. The following is a method for estimating the same proposed by Dr. Penny, the eminent chemist in Glasgow:—

Ten grains of the sample very finely powdered are carefully rubbed with 2 measured drachms of fuming sulphuric acid, and the mixture allowed to digest 12 to 14 hours with occasional stirring, the air being excluded.—A small flat bottomed flask, with a tight cork answers best for this operation. Some fragments of broken glass should be added to prevent the indigo from clotting.

The temperature should be from 70° to 80° Fah., if it rises higher sulphuric acid may be generated and the whole operation rendered worthless. When the indigo is perfectly dissolved the solution is gradually poured (constantly stirring) into a basin containing a pint of water; by measure  $\frac{1}{2}$  of an ounce of hydrochloric acid is instantly added. An alimetre of 100 equal parts is made up with  $7\frac{1}{2}$  grains of pure dry bichromate of potassa dissolved in it, and this is gradually added to the indigo in the basin, until a drop of the mixture, let fall upon a slip of filter paper presents a light brown or ochre shade, without any mixture of blue or green. The number of measures of bichromate solution used, is then read off, and this shows the comparative value of the sample. In applying the test drop to the paper, the best results are obtained by bringing the end of a glass rod in contact with the indigo solution, and then gently pressing it against the surface of the paper. It is advisable to keep the indigo solution gently warmed while the bichromate is being added, and the mixture should be well stirred after each addition. Towards the conclusion the bichromate should be added very slowly and carefully, as one or two drops then produce a great effect. The changes of color in the mixture clearly indicate the advance of the operation. The original blue color of the sulphate of Indigo becomes lighter and lighter, then acquires a greenish shade, then greenish brown, and almost immediately after an ochre brown. Ten grains of pure indigo require nearly  $7\frac{1}{2}$  grains of bichromate of potash. For dyers and color-makers in print works, the above mode of testing good indigo (we have not tried it) by Dr. Penny, if correct, is invaluable, at the same time we can say, that long experience enables a good practical chemist to judge very closely of the quality of indigo by the eye.

Patent Law Case—Sewing Machine.

In the U. S. Circuit Court, Boston, Monday March 21st, in a suit at equity, plaintiff, Elias Howe, Jr., defendants, John Woolredge et al., the court granted a preliminary injunction against the use, sale, and manufacture of "Singer's Sewing Machines," and the defendants were required to give bonds to account for the use of the machines in case of a verdict for the plaintiff in the future trial at law.

Galls on Horses.

In France it is the practice when horses get their hair rubbed off, or the skin scarified, to apply a blister to the part at once. This, if applied as soon as the injury is done, will it is said, restore the growth of hair; it has never been known to fail when applied in time.

[The above is from the "Spirit of the Times." We have been informed that a poultice of honey and ley made from woodashes is the best substance for restoring the hair; it looks more rational than applying a blister.