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Chemistry of the Universe.

Curiosity is a prominent feature of the human mind; a strong desire to pry into the unknown of the future and the past, is characteristic of all men. Subjects which must remain a mystery to man are the very ones which engage the most discussion, and were it not that science is so often dragged in to support untenable theories, we would never notice such effusions of lecture, epistle, or debate. On the evening of the 24th ult., Prof. Doremus, of this city, delivered an able lecture in the Hall of the Medical College, to demonstrate, chemically, the manner in which our planet and the universe came into existence. Adopting the nebulous theory of La Place, he laid down three propositions, viz., that this earth was first in a gaseous state, then fluid, then solid. To prove this, he said, our planet was round, a form assumed by all fluids when rotated, but not by a gas, nor a solid. This was a very good argument for the previous fluid state of our globe. But how came it to be in a fluid state? He assumed that its first state must have been gaseous; that is, that all the metals, gold, platina, rhodium, lime, magnesia, and the whole fifty-nine solid and fluid substances, of which this earth is composed, were in a state of gas. But how came they to be in a state of gas? He never went behind this question, the most difficult of all to answer, and from the present state of chemistry he could not answer it, for there are but very few substances which can be reduced to gas; therefore, the conclusion, "they never were gaseous," must hold good, until it is disproved. But allowing, for arguments sake, that the whole materials of which this universe is composed, were once in a state of gas, how came this gas to be resolved into a fluid state? Prof. Doremus performed a number of experiments, such as igniting antimony in chlorine gas, to show that there was a great amount of latent heat in gases, and asserted that "when the universe was in a gaseous state, the light and heat—imponderables—which it possessed, were in a latent state, and by the combinations of these gases light and heat were evolved, not created." But the Professor, instead of offering proof how these gases came into a fluid state, jumped at the following conclusion—the easiest way to get rid of the difficulty. "Matter, in a gaseous form, when deprived of its latent heat, assumes the liquid form. Into this then let us suppose the universe was brought. Streams of matter, all flowing to a common center, beget a rotary movement; set a liquid globe rotating on its axis and what results."—He answered this query by causing a large globe of oil to rotate in a jar of water around an iron rod passing through its center, when the oil became flattened at its poles. He then said, "by giving a great velocity to the oil, it would become a ring, and if it would break it would gather into globes and fly round the center. If it also were possible to overcome the attraction of gravitation, and different liquids were to be taken, such as one of mercury for the center, that covered with oil, then another of alcohol, and these set revolving around a common axis, the lightest fluid would be formed into a ring, the denser keep the center, and the rest be broken into globes or rings. This symbolizes our planetary system; the sun in the center, the farthest planets broken into more satellites than those that are nearer the center, the earth four times denser than Jupipiter; Saturn surrounded with rings, and all the planets and satellites moving in the same plane." This is a beautiful theory, but it is neither founded on chemical nor astronomical facts. If all the planets and their satelites were once united—a revolving fluid mass—and the planets were thrown off from one axis, then the satellites thrown from their planets, all would still be moving with the same velocity, and in the same direction; but instead of this being true, the satellites of Uranus move in a contrary direction, not in the same plane of that planet; this one fact destroys the theory. Another is, if this theory were true, all the planets of our system should rotate round the sun during one revolution of the sun on its axis, consequently all the planets of our system should rotate round the sun in equal times. If we take a large wheel secured on an axis to represent the fluid rotation of matter described by Prof. Doremus, and that composed of a number of concentric rings, to represent the matter of every planet in our system, the outermost ring will pass through more space in a given time than the interior one, but it must make a revolution in the same time. To complete the picture, the Professor should have rotated his globule of oil on a spindle unconfined in a jar of water, for no such vessel we presume was employed to confine the fluid of our universe.

The chemical theory is worse still, for although there is latent heat in the gases, no one can be deprived of that heat unless by transfer. Now this could not take place by any known law, if all the matter of the universe was in a state of gas. The law of diffusion belonging to gases is opposed to this theory, were it not so, we could have no lien on the atmosphere for a day's existence. It is composed of a light and a heavy gas; the heat of one by no natural law, can be transferred to the other nor separated. If the nebular hypothesis were true, the nitrogen (N14) of the atmosphere would lie on the surface of our planet, and the oxygen (O8) would lie and revolve on the top of it, in short, there would be no living thing on this globe. The only way whereby the rotary movement of the earth could be produced, as stated by the Professor, by the streams "flowing to a common center," would be by the funny theory of a hole through the center of the earth spoken of by Maupertuis for the tides to run in and the tides to run out, then roll and run on the surface about—a theory just about as conclusive and sensible as the one we reviewed last week respecting the tides. Men of science in presenting any theory should never hide a single known fact opposed to it; to do so is degrading science to individual whim and conceit.—The object of all investigation in philosophy should be truth, the whole truth, and nothing but the truth.

Patent Office Report for 1852---No. 3.

Examiner Gale: Value of Patents—The Report of this Examiner, for 1852, contains some very extraordinary announcements respecting the value of patents, the facts mentioned being obtained, no doubt, from the most reliable of all sources—documents of sale. It says, "a patent, if it is worth anything, when properly managed, is worth, and can be easily sold for from fifty to sixty thousand dollars. These remarks only apply to patents of minor or ordinary value, they do not include such as the telegraph, the planing machine, and the india rubber patents which are worth millions each. A man obtained a patent for a slight improvement in straw cutters, took a model of his machine through the Western States, and after a tour of eight months, returned with forty thousand dollars in cash, or its equivalent. Another inventor obtained an extension of a patent for a machine to thresh corn and clean grain, and sold it in the course of about fifteen months, for sixty thousand dollars. A third obtained a patent for a printer's ink, refused fifty thousand dollars, for it, and finally sold it for about sixty thousand dollars. These are ordinary cases of minor invention, of which hundreds go out of the Patent Office every year. Experience shows that the most profitable patents are those which do not contain much real invention; these, by multiplication (in the things produced) cause number to make up for the smallness of the profit in the individual case."

These statements, coming from the Patent Office, confirm a truth often asserted, that patents, when properly managed, are the best species of property in our country; and why not? A very small improvement on a threshing machine, straw cutter, printer's ink, a lock or key, or whatever it may be, while it may have added but a very small increase to the price—say one-tenth—has enhanced the value ten-fold to the buyer or user. This was the case with Watt's great improvement of the steam engine, the vulcanizing of gum elastic, and a thousand other inventions. The people who pay for useful improvements (although the inventors may derive high profits) are the greatest gainers. The machine for turning lasts, and the planing machine, have saved millions upon millions to our country at large.

The number of patents granted at this Examiner's desk for the year, was 167; rejected applicants, 256, or nearly one and a half for every one granted,—being much less than Examiner Renwick, whose rejections were as three to one. The chemical department is under charge of Prof. Gale, who has expended $500 personally for testing chemical improvements; he asks for an appropriation for a chemical apparatus for the Patent Office, as his is in his own house, and the time devoted by him to such experiments, is extra hours. We hope the appropriation will be made, for we believe, with him, that many patents for chemical improvements have been refused without full and satisfactory reasons for such rejections. The least improvement in chemistry, whereby a new manufacture is produced, should never be rejected. A new and very simple combination of old materials, frequently produces very important results. It is stated that the number of chemical applications, have greatly increased over former years, and no less than forty-eight chemical patents were granted in 1852. With a number of these we have been well acquainted, as they were obtained through our agency—a practical acquaintance with chemistry, as applied to the different arts, having been our occupation for a number of years. The leading features of some of the chemical patents, we present, knowing they are of much interest to all our readers—as chemistry, above all sciences, is entwined around every branch of art and manufacture. A patent granted for manufacturing paraffine, consists in distilling bituminous coal in a retort at a very low red heat; the products are received into a worm kept at 55° Fah., and the liquid is purified by sulphuric acid and soda in succession. One granted for a new cement consists in mixing in water half a bushel of fine slacked lime with one-fiftieth of its quantity of powdered resin. This answers well for a hydraulic cement when mixed with sand. A patent for a new burning fluid consists in mixing two measures of alcohol with one of benzole in one measure of water, and agitating them violently. Sponges placed in a suitable vessel are charged with this mixture, and air being forced through them and out of a burner, carries along the vapor of the combustible compound, which burns when ignited. This is the "Paine Light" No. 2: the first was to burn water—this to burn air. The sea still flows and the wind still blows. A patent was granted for a new soap, the ingredients being kaolin, ammonia, and the common substances of which is soap is composed; all mixed up in the soap boiler. This application was rejected at first, the reason given was, that the claim was based on a principle at variance with the chemical knowledge of the Patent Office. It was however granted freely and with excellent grace, when it was shown that it accorded with discoveries pointed out by Liebig in his work on Organic Chemistry. A patent was granted for an excellent enamel for earthenware, consisting of glass one part, lime one fourth, common salt one-eighth, by weight. These are thoroughly pulverized and ground up together, with sufficient water to make them of a cream-like consistence, when it is put on the ware with a brush, and exposed to heat in an enameller's furnace. This avoids the use of such a bad substance as lead. Another patent was granted for coating iron with copper, and consists in cleaning the iron well, then coating it with salammoniac in solution; then dipping it in a bath of molten zinc, and from that into a bath of molten copper, and holding it therein until it ceases hissing. It is then withdrawn and cooled, when it is found coated with copper. The surface of the molten zinc, and the molten copper is covered with pounded glass.

We have thus briefly noticed, presenting the substance clearly, some of the chemical patents issued from the desk of Examiner Gale, and will notice the Agricultural Patents next week, as we have not room to do so in this number of the Scientific American.

The Democracy of Science.

The "Philadelphia Ledger," in noticing the death of M. Arago, the eminent French philosopher, pays a merited tribute to the great ones of the earth in science, and points out the influence exerted by so many of them in favor of rational freedom, terming that influence "The Democracy of Science." This is true. Who did more for the liberties of his country than the greatest of American philosophers—Franklin? Watt and many other great men were also distinguished for liberal principles; but above all, we recognize the "democracy of Science," in the absence of rank and aristocratic descent, in almost every one of those men whose discoveries in science, whose inventions in mechanics, and whose works of art, have crowned the countries which gave them birth with immortal honor—Copernicus, Kepler, Newton, D'Alembert, Davy, Cuvier, Linnæus, Whitney, and a host of other great ones of all nations, were men of low degree. Among the living, science claims her noblest sons from the lower and the middle ranks. In our own country, this is particularly true, and cannot be otherwise; we can point with pride, to Hare, Henry, Silliman, Maury, Smith, citizen Agassiz, and many others; in England there is Farraday, Sir David Brewster, Stephenson, Owen, Miller, and a host of others; in fact we do not know a scientific man by descent, among all the aristocracy except, Lord Ross, who is an honor to his class.

Science, also, as if to mock the claims of learning as well as noble birth, often selects her brightest gems, from the self-taught and the lowest of the lowly. Hind, the young astronomer, who has recently made so many discoveries among the asteroids, received but a common school education. Very few of our great inventors have been favored with more than an ordinary education. It has been said that "while the sages of Cambridge in England, were evolving some problems in mathematics, the sages of the machine shop invented the spinning frame, the steam engine, the steamboat, the locomotive, the nail, the gun stock, the pin machine, &c." We do not make these remarks to disparage a collegiate education, for we believe that those men who have become great, independent of such an education, might have become greater, had they been favored in their early years with better educational advantages. In this opinion, however, we have an opponent of no less authority than Sir Walter Scott, who asserted that a classical education would have clipped the genius of both Shakspeare and Burns.

"Fair Science," in selecting so many ornaments of our race, from among the less wealthy classes, thereby weakens the power and tames the pride of those who trust in riches and boast of blood; and blind indeed must that man be, who cannot see that such an influence tends to elevate the lowly and deserving workers in machine shop and factory; in short, that Science is Democratic.

Electro Magnetic Engine.

We called a few evenings since to see Professor Vergnes' new Electro Magnetic Engine, for which a patent was granted last year, (1852.) We think from what we saw of it that it was far superior to any other that we have examined except Page's, and we are inclined to think it may be superior to his. Unlike most machines of its class, it can be constructed of any size, and the large machine will still have a proportionate power to the model. We shall examine this machine again and inform our readers of the result.