

**Paine's Hydro Electric Light.**

WORCESTER, July 11th, 1849.

Messrs. MUNN & Co—I have been looking in your Journal for the last three weeks, expecting to find some account of Paine's Hydro Electric light, it having been in operation here, with few exceptions, every night during the past month, the other day I met Mr. Paine in the street and enquired why the press was so silent on a subject so momentous and so publicly successful; his reply was, that some editors who had witnessed its action, both at his residence and from the lighted town, had declined noticing it, because he would not explain in the whole method employed to produce the light. Now you are aware that whenever any new project is started there is always a party who employ themselves in placing obstacles in the way of its completion, all inventors are cognizant of this fact, and there is also generally a few who although they cannot fully understand the entire points of the proposed improvement, yet have sufficient respect for the inventor to await the result of his experiments. In Worcester we have both those parties, and to the latter belongs your correspondent, and I must confess, that this communication is more the result of personal statement consequent on his ability to turn the laugh on the sceptics, than any other motive. Mr. Paine has fully accomplished all he promised in his circular. When he spoke of furnishing light equal to good gas burners for one mill per hour, he meant the expense incident to materials consumed, not the interest or money expended in the construction of buildings and machinery. During the past winter Mr. Paine has had his parlor and laboratory illuminated by gas generated from water and the only power used was a common brass eight day clock wound up every morning; and the only material consumed was about one half pint of water, the whole apparatus could be lifted by a man of ordinary strength, and its operation was witnessed by hundreds of visitors at his house, the whole apparatus being shown except certain parts where the currents of electricity are broken and connected. The decomposing poles being in glass receivers, enabled the spectators to witness the passing of the gases from their aquatic to their ætiform state, presenting a beautiful and interesting phenomena. In the month of February last, his first public experiment was made from the cupola of the Exchange in this city, by burning a jet in the focus of a parabola reflector the light of which enabled a person to read newspaper print at a distance of one mile. In May last he erected a hexagon tower a mile south of the city, and in this tower is placed all the apparatus necessary to light a city of much larger dimensions than Worcester, or for a light house on the coast. In the lantern are three reflectors 4 feet in diameter each, with a focal length of 16 inches, the jets connected with these reflectors are not yet completed but orifices equal to their whole vents are punctured in the receiver and the apparatus keeps a full gush of the gas passing through.

The machinery consists of a 69 pound weight which drives a train of wheels, which in their turn give motion to six helices revolving between the poles of twelve V. magnets, this weight is wound up four times a day, and falls each time about sixteen feet. The whole apparatus without the buildings and reflectors cost \$300. Now this apparatus has been running for four weeks past and has constantly supplied three jets, each of which will produce light equal to 10,000 gas jets of the ordinary street kind. A jet has been burned most every evening in a small parabola reflector sending a stream of light like a lightning flash over our city, and Mr. P. expects to light the great reflectors next week. These are sober facts that any one can realize that chooses. Water is made to produce a light that rivals the solar rays by means of the simplest nature, and the invention in its results, does not stop at light, it is destined to work a revolution in motive power as great as it has in purposes of illumination. There is much dissatisfaction among Mr. Paine's scientific acquaintances, consequent on his refusing now to trust the Patent Office with the whole features of his discovery, but I think he is right in his determination to let his light

burn one year, a burning demonstration of the fact of his discovery, and a challenge to the world to accomplish the same thing. It is a very easy matter after a man has explained how he produced a result, for others to make their eggs stand on end, and prove too, that they have made them stand before. With Mr. Paine, as with all other true inventors, reputation is the first consideration. I know that no mercenary motive prevents his making his discovery public, for he has sold a portion of it for a sum that puts him beyond pecuniary embarrassment.

Your obed't. serv't., G. C. T.

[Our correspondent states a fact, when he says that there are some who after having expressed a contrary opinion to a new project, throw obstacles in the way of its completion. This is wrong, we condemn such a spirit. But then there are others who philosophically urge arguments against a new project, and if their arguments are not controverted and the matter explained, no fault can be found with them. It is well known to every man acquainted with electric science, that a galvanic battery will decompose water, the oxygen escaping at the positive pole and the hydrogen at the negative. If these two gases be conveyed in tubes and burned on a piece of lime, we have the well known Drummond Light. If the opposite currents of a galvanic battery meet on a point of carbon, a splendid light is the result. All these modes of producing artificial light are more expensive than common gas, (carburetted hydrogen.) The decomposition of water by electricity generated by mechanical means, as stated above, places us at fault, in regard to Mr. Paine's Light, although we know that chemical decomposition has been effected by magneto electricity.

**New Electro Magnetic Clock.**

Messrs. W. T. Henly and D. G. Foster, philosophical instrument makers in Clerkenwell, Eng., have lately secured a patent which they call a mode of imparting motion to a train of wheel work, with or without an auxiliary power, for the purpose of giving correct time by means of magneto electric machines, voltaic batteries, near or from a standard time keeper at a distant station. In this case, a very neat arrangement of wheel work is used for regulating the clock by the induced electric currents, in connecting with a spring and fusee, only one hand being made use of, instead of two, to show the time upon the dial, the face of such dial being marked out as usual with the hours; between the figures, representing the hours, are also marked every five minutes, that the time may be read off with the same facility as with two hands. This arrangement the patentees propose to apply to all ordinary clocks. The spring and fusee may be dispensed with, if desired, and motion given to the clock by currents derived from a voltaic battery. The circuit reverses, of a peculiar construction, for this purpose, are described; the first is attached to the escape-wheel arbor, and consists of two brass segments, fixed around the arbor with ebony, or some other non-conductor, and connected with the arbor by means of small metal screws. The brass flanges, fitted with platinum points, dipped in a cup of mercury are also fixed to the arbor. The segmental pieces have also platinum points which dip into other cups of mercury, all of which are properly connected by wires with the battery. By this means, it will be seen, that at each revolution of the arbor, the circuit will be completed and twice broken. In the second arrangement, the reverser is placed upon the pallet arbor; it consists of two isolated arms, placed across the arbor, one of which is in metallic connection with the arbor, and the other with a cup of mercury connected with the battery. The ends of these arms carry platinum points, which, as the pallet vibrates alternately dip into the right and left hand cups of mercury, the cups being connected with each other by transverse wires.

[The above is from the London Mechanic's Magazine. The description does not convey unto us any thing new, in the results produced, and this is what we have to look at, in judging of the merits of any invention. The electro magnetic clocks that are in use at present, keep regular time; one battery can move

a thousand at once however distant they may be, and the American Magnetic Astronomical Clock can register the signs. This is the very perfection of Magnetic machinery.

**A Hundred Years Hence.**

It strikes me as the most impressive of all sentiments—that it will be all the same a hundred years after this. It is often uttered in form of a proverb, and with the levity of mind that is not aware of its importance. A hundred years after this! Good heavens! with what speed and with what certainty, will those hundred years come to their termination! This day will draw to a close, and a number of days makes up one revolution of the seasons. Year follows year, and a number of years makes up a century. These little intervals of time accumulate, and fill up that mighty space which appears to the fancy so big, and so immeasurable. The hundred years will come, and they will set out the wreck of whole generations. Every living thing that now moves on the face of the earth will disappear from it. The infant that now hangs on its mother's bosom will only live in the remembrance of his grandchildren. The scene of life and of intelligence that is now before will be changed into dark and loathsome forms of corruption. The people who now hear me they will cease to be spoken of, their memory will perish from the face of the country; their flesh will be devoured by worms and the dark and creeping things that live in the holes of the earth will feed upon their bodies; their coffins will have mouldered away, and their bones be thrown up in new made graves. And is this consummation of all things? Is this the final end and issue of man? Is this the upshot of his busy history? Is there nothing beyond time and the grave to alleviate the gloomy picture, to chase away these dismal images? Must we sleep forever in the dust, and bid an eternal adieu to the light of heaven?—[Dr. Chalmers's Sermons

[The above thoughts (before we read them in the foregoing) have often flitted across our mind. They should be deeply impressed upon every heart. In view of the future, we should all live, not for the opinion of the world, but in a virtuous atmosphere of soul, regardless of the opinions of others. He whose conduct is squared merely by what the world thinks of him, will do wrong, in proportion to his opinion of not being detected. He who has uprightness and integrity within his heart, and between his heart and his Maker, will be sure to live above the world, its vanities, follies and vices.

**An Unknown Land.**

The English have recently made a settlement at Aden, near the Red Sea. Having once obtained a foothold, they, English like, began to push about them, and one of their first discoveries was a river where none was marked upon any chart, and upon this they steamed 300 miles without finding the least obstruction. Having now passed round this continent, let us look up in the interior. For half a century the English government have been expending lives and treasures in a partial exploration. They have found that this whole tract of country is one of amazing fertility and beauty, abounding in gold, and all sorts of tropical vegetation. There are hundreds of woods, invaluable for dyeing and architectural purposes, not found in other portions of the world. Through it for thousands of miles sweeps a river, from three to six miles broad, with clear water and unsurpassed depth, flowing on at the rate of two or three miles an hour, without rock, shoal or snag to interrupt its navigation. Other rivers pour into this, their tributary waters, of such volumes as must have required hundreds of miles to be collected, yet they seem scarcely to enlarge it. This river pours its waters into the Atlantic through the most magnificent delta in the world, consisting perhaps of a hundred mouths, extending probably five hundred miles along the coast, and mostly broad, deep and navigable for steamboats. Upon this river are scattered cities, some of which are estimated to contain a million of inhabitants, and the whole country teems with a dense population.

Fat in the interior, in the very heart of the continent, is a nation in an advanced state of

civilization. The grandeur and beauty of portions of the country through which the Niger makes its sweeping circuit are indescribable. In many places its banks rise boldly a thousand feet, and are thickly covered with the richest vegetation of tropical climes. But all this vast and so lime country, this scope of rich fertility and romantic beauty, is apparently shut out forever from the world. It is the negro's sole possession. He need not fear the incursions of the white man there, for over this whole lovely country moves one dread malaria, and to the white man it is the "valley of the shadow of death." In expedition after expedition sent out from the English ports on the island of Ascension, not one in ten has returned alive—all have fallen victims to this seemingly beautiful country. It seems impossible for an Englishman to breathe that air. So dreadful is it—so small the chance of life, that criminals in England have been offered pardon on condition of volunteering in this service, more terrible than that of gathering the poison from the tabled Upas. This country, tempting as it is, can only be penetrated at the risk of life, and it is melancholy to think that those who have given us even the meagre information that we have, do it at the sacrifice of their lives.

The only tolerable account which we have of this country, is published by a Swiss Officer in the service of the Egyptian Government, who was a member of an expedition fitted out by Mehemet Ali. He could give but little account of the country however, only, they saw races of the most degraded negroes, and some fine specimens of humanity in other races. One tribe averaged both men and women, seven foot in stature.

**Oxygen.**

When pure oxygen is taken into the lungs, it causes the blood to circulate much more quickly than when common atmospheric air is inhaled. This is due to the fact that the combustion of the excess of carbon contained in the blood, is accelerated in the lungs. Oxygen gas may, consequently, be administered medicinally and with advantage in certain cases of sluggish circulation; but no person unacquainted with medicine should do so, except by the advice of a professional man; for when the slow circulation of the blood is consequent upon weakness in the lungs, the excess of oxygen inhaled, not finding blood sufficient for its saturation, would, probably, act upon the lungs themselves, and the consequences might prove fatal. The stimulating effect of oxygen on small animals may be easily observed by placing a mouse in a jar of oxygen; a glow-worm also, if placed in a jar of oxygen, shines with increased brilliancy.

The combining proportion of oxygen is 8; that is to say, when oxygen is combined chemically with any other body, the proportion of oxygen in the compound is always either 8, or some multiple of that number. In water, for instance, the ratio is 8 of oxygen, and 1 of hydrogen, and in sulphuric acid 24 (8X3) of oxygen, and 16 of sulphur. Oxygen, is generally expressed by the symbol, O, or a dot.

**How to be Happy.**

"Sometime since," says Dr. Payson in a letter to a young clergyman, "I took up a little work purporting to be the lives of sundry characters as related by themselves. Two of these characters agreed in remarking that they were never happy until they ceased striving to be great men. This remark struck me, as you know the most simple remarks will strike us, when Heaven pleases. It occurred to me at once the most of my sufferings and sorrows were occasioned by an unwillingness to be the nothing which I am, and by consequent struggles to be something. I saw if I would but cease struggling and consent to be any thing or nothing, just as God pleases, I might be happy.—You will think it strange that I mention this as a new discovery. In one sense it was not new: I had known it for years. But I now saw it in a new light. My heart saw it, and consented to it; and I am comparatively happy. My dear brother, if you can give up all desire to be great, and feel heartily willing to be nothing you will be happy too."