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Responsibility of Editors.

The power wielded by a widely circulated and influential paper, is very great. The pulpit was once the only and mighty lever for influencing the masses, and it is still a potent engine for that purpose,—but the press has now more influence for good or evil, as it reaches every dwelling and is an oracle in every family. The editor should therefore be a man of honor in all his dealings, intelligent, and talented. He should never seek to gratify personal animosity or ambition. He should be of a forgiving and generous spirit. The man who would prostitute the press by invidious inuendoes against any one who had not an opportunity to defend himself, is not fit to fill the honorable situation of editor to a respectable journal. Above all things do we deprecate that spirit of revenge which is too often manifested in assailing the characters of individuals by covert and malignant insinuations, which create dark doubts in the minds of others. It is possible to live in a free land in respect to laws, and yet there may exist therein the worst of tyrannies—that of a disreputable press. The iron tyranny of a licentious press may be more excruciating than the iron will of a despot. We have no sympathy with the hypocrite or knave who is denounced by an honest press—that is one of its sacred callings, for it should be a watchman to guard the interests of community ; but there is no part of an editor's duty which requires more rare faculties than in the exposition of errors, whether those errors belong to individuals or communities. Had Foster's fierce and poisonous criticisms on the acting of Edwin Forrest never been published, we should not have had the terrible scene at the Astor Place Opera, nor those unhappy incidents and revelations in connection with the personal life of that great actor. And there are many editors, who, if their consciences are not seared, cannot lay their hands upon their hearts and clear themselves of all guilt in the sudden death of our venerable President.

When a man becomes conspicuous for talents, or is elevated to an important office, some editors, and their number is not small, seem to look upon him as a subject only of abuse and calumny. In the political world this spirit is prominent above all others : to be a candidate for any office, is to be exposed to infamous denunciations and malignant vituperation. This should not be; it is dishonorable and more disgraceful in our country than in any other. In every thing, and above all in conducting the public press, America should be a pattern of dignity, honorable dealing, logical disquisition and generosity of sentiment.

The Scientific American.

The Stark County Agricultural Association, Ohio, is going to award fifty copies of the Scientific American as prizes, at the next Exhibition. The Scientific American is now the best standard work in our continent, as the mirror of American inventions and the progress of the arts. It presents every week a fund of varied and interesting articles on almost every useful subject. It is the only paper that receives and pays for an official list of patent claims, weekly. Our friend John Carruthers, in his "Advertiser," at Savannah, says that *frequently* a receipt will be found in our columns worth ten times more than the subscription price of the paper.

Pennington's Aerial Ship.

We have received from Mr. Pennington an illustrated representation of his aerial ship, propelled by fans and steam power. Mr. Pennington has pursued this subject for a great number of years, and still firmly believes that aerial locomotion is the cause of God and man, and will soon burst successfully upon our mundane sphere.

Proff. Grant exhibited his calcium light a short time ago at Washington. As calcium is the base of lime, we suppose, the light is no more than the Drummond light.

Explosion of Steam Boilers.

A few weeks ago a locomotive exploded on the Western Railroad, Mass., and instantly killed the engineer, John Monegan. The force of the explosion was very great, so great indeed, that the body of the engineer was blown to a considerable distance, and the re-action drove the engine twenty rods up the grade of forty-five feet to the mile, after separating it from the tender. The latter contained a cord and a half of wood, having just been re-filled, and the whole of it was swept out and thrown high into the air, coming down in all directions around, like a shower of hail. Some of the wood was blown against the top of the first freight car so forcibly as to strip more than half of it completely off.

The subject of explosions has engaged more attention, we believe, than any other, and yet such accidents are no less frequent now than heretofore. One thing about them seems to be a subject of greater wonder than any other—that is the *force* of the explosion. Boats are shattered to atoms, as if their hulls had been gun powder magazines; and buildings are heaved from their foundations as if a volcano had burst beneath them. Many remedies have been proposed, and many reports made on the subject by scientific bodies, who have supposed that if intelligent engineers alone had the management of such machines, there would be fewer explosions; but we have found that practical engineers have had charge of mostly all the boilers which have exploded. There can be no doubt, however, but a great majority of our practical engineers, are in want of information about the nature of steam. They are acquainted with the mechanical construction and operation of the engine, but, if the question was asked "how much does water expand into its elementary gases?" we are afraid that a great number would not be able to tell. Accidents have happened when those having charge of the engine were men known to have been possessed of all the requisites, so far as practical and experienced mechanics can have, and yet relying upon their experience, based upon well known principles, were suddenly launched into eternity. The majority of explosions have occurred when the engines were started, and this was the case with the engine mentioned above, for Mr. Monegan had stopped for a short time by the way-side to decorate his engine, and the explosion took place instantaneously with the opening of the steam valve. The sudden and apparently instantaneous generation, and consequent elasticity of steam caused by the suspension of its use in the boiler, for a very short period, has been noticed by every observing engineer. This experimental fact should teach every engineer the necessity of allowing a portion of steam to escape always, and it should teach a general truth, viz., that the majority of explosions take place from over pressure. There should be some general law strictly enforced, limiting the pressure and demanding greater strength of boilers. Although the test pressure may be 200 lbs. on the square inch, the steam should never exceed the one half of this. The reverse of this rule was the cause of the Hague street explosion. The pressure on the boiler was a hundred lbs., whereas it should not have been more than fifty.

Nature and Composition of Water.—Water is composed of oxygen and hydrogen in the proportion by measurement, of 1 of the former and 2 of the latter, but by weight, 8 of the former and 1 of the latter. One cubicfoot of water weight 1000 ounces, or 62½ lbs. A cubic inch of water at 60° weighs 224·46 grains of oxygen, and 28·06 of hydrogen; total, 252·52 grains. The bulk of the oxygen in a cubic inch of water is 662 cubic inches, the hydrogen 1,325 cubic inches, hence to form water there is a condensation of these two gases of nearly 2,000 volumes into one. When any quantity of these two gases in the proper water proportions are mixed together, and a spark of electricity is passed through them, they explode with a loud report, and the singular instantaneous result is water. This great and sudden contraction is mysterious and not well understood. Many believe, if water can so easily be made from its gases, it may also be as easily and quickly resolved into its gases. The great bulk of the gases of water, in comparison with the water itself, is evidence of a power in water, as destructive as gunpowder. This fact should not be lost sight of by any engineer. Water attains its greatest density at 39° degrees heat : it is then 1·00115, whereas at 70° it is 0·99953. When water enters chemically into any compound, like common salt, it is designated an *hydrate ;* when water is entirely absent from any chemical compound, it is said to be anhydrous Burnt lime is *anhydrous*, but slacked lime is a *hydrate*. Water, of old, was held to be a simple element. Its composition was discovered in 1783, by Priestley, Cavendish and Lavoisier. As the element of steam, water may be considered as the prime author of progress in the mechanic arts. Water is 815 times heavier than atmospheric air. It propels the ponderous wheel that turns a thousand flying spindles and shuttles ; if combined with caloric it propels the leviathan steamship over the stormy ocean, and inspires the iron horse with the fleetness of the hurricane,—it is a good servant but a bad master.

Death of the President.

Zachary Taylor, the President of the United States, after a few days' illness, expired at Washington on the evening of the 9th inst. His last words were, "I am prepared to die, I have endeavored to do my duty."

Zachary Taylor was born in Orange Co., Va., Nov. 2nd, 1784. At 21 years of age he entered the army and served with distinction under Gen. Harrison in the last war with England. He gradually rose to the rank of Colonel, in 1832, when he served in the Black Hawk war. In the Florida war he fought the famous battle of Okechohee, and completely defeated the hostile Indians. His distinction was moderate until the 8th and 9th days of May, 1846, on which he fought the terrible battles of Palo Alto and Resaca de la Palma. These victories over a numerous foe, with a handful of men, thrilled the heart of the nation, and he at once became the object of universal admiration. But it was not until Feb. 22, 1847, that he reached the climax of his military fame. On that day, on the field of Buena Vista, with a few thousand men, he successfully resisted a well appointed Mexican army of 20,000 men, commanded by Gen. Santa Anna. For nearly a whole day the Mexican infantry and cavalry dashed upon his handful of soldiers like waves of lava against a rock, and when the morning of the 23d dawned, the foe's haughty host were seen far away, flying, broken and vanquished. He then became enshrined in the popular heart and was elected President, to succeed Mr. Polk, an office which he only filled for the brief period of fifteen months. He was a man of inflexible honesty, very unassuming, and of great goodness of heart. He was personally beloved and esteemed by all who knew him. None questioned his patriotism but those who were devoid of the principle ; and alas for the virulence and the bad manners of our party politics, he was oftentimes maligned without a cause. He was generally considered as devoid of the qualities of a statesman and the genius of a great general, but we shall be better able to judge of his qualities when his whole life is fully revealed to the public. Wellington had the same character at one time, but who can deny him both genius and statesmanship now. All politicians are not statesmen, and a man may be a great statesman without being a politician, in the modern sense of that term. But the old General has gone where the wicked cease from troubling and the weary are at rest :—

" The lightning may flash and the thunder may rattle,
He heeds not, he hears not, he's free from all pain,—
He sleeps his last sleep, he has fought his last battle,
No sound can awake him to glory again !"

Filligree Work.

This work is a kind of enrichment on gold or silver, wrought delicately in the manner of little threads or grains, or both intermixed. In this kind of work, fine gold and silver wire are often curled in a serpentine form and braided through each other, or formed into festoons and various ornaments, entwisting the threads to give them a very beautiful effect. This art is very ancient, and was brought into Europe from the East. It was formerly much used for decorating images and the tombs of saints. The Hindoos and Chinese make some beautiful works of this kind, with tools which are very coarse and clumsy. The Malay jewellers make a great deal of silver filigree work, and gold also. They either melt their gold in an earthen rice pot or in a clay crucible. They blow their fires with the mouth through bamboo tubes, and they draw their wire much as we do ourselves ; after having drawn it sufficiently fine, they flatten it on the anvil, and give it a peculiar twist by rubbing it on a block with a flat stick. They then form it into leaves and flowers by handiwork, until they have the number to form the pattern they wish to execute on the plate. They always have the pattern beside them of the full size they wish to form on the gold plate. They fix their work with a glutinous substance made of a berry ground on a stone. They keep this substance on a piece of cocoa nut. After all the leaves of the filligree is laid on the plate—stuck on bit by bit—a solder is prepared of gold filings and borax moistened with water, which they strew over the plate, then put it in the fire till the whole becomes united. In making open work the foliage is stuck on a card with the berry paste, then the work is strewn over with the solder and put into the fire, when the card burns away and the whole remains united. If the piece is very large it is soldered several times. When the filigree is finished, they cleanse it by boiling it in common salt water and alum, and they give it a fine purple color by boiling it in water with sulphur. Except in India, China and some parts of Turkey, this art is much neglected at present.—With the great influx of gold into our country from California, we already begin to see a greater amount of jewelry worn as articles of personal and domestic ornament, and with an increase of bullion riches, there will be a proportionate increase of jewelry. With such views, a few ideas on this subject we thought might be useful in directing attention to this beautiful art.

New Method of Tanning.

The Rochester Advertiser states, in a recent article, that the Editor owned a pair of boots presented by the Journeymen Shoemakers Association, the leather of which was tanned by a new process, which occupied only an hour or two at most. If this discovery is all that it is stated to be (of which we have some doubts), viz., to make leather *equal to the French*, in such a short time, it must be one of the most valuable discoveries of the age. As the process, however, is not laid down in black and white, every man is justified in suspecting its reality. A new process, however, has come into our possession lately, which is said will tan leather better and in less time than by the old process. We give it for what it is worth. Those in the art can make experiments for themselves—the only way to test its merits. Three liquors are made up, 1st. One made of 20 pounds of alum, and 20 of the sulphate of potash, and ten of the muriate of soda, all dissolved in warm water. 2nd, 100 pounds of catechu, dissolved. 3rd. 4 pounds of alum, 2 lbs of the muriate sf soda, dissolved. For 100 calf skins in a vat of sufficient size, put one-fifth of No. 1 ; viz., 4 pounds of the alum and potash and 2 of the muriate of soda, (common salt)—then add one-tenth of the No. 2 solution, and one-fourth of No. 3. With this mixed solution enough of water is put into the vat to cover the 100 skins and the temperature is kept up so as the hand can bear it well. Men with poles rounded at their ends stir the skins for about one hour, when they are taken out. They are then placed in another vat of the same kind of solution, and the same strength, and stirred frequently for about three hours, and let stand till next morning. They are then removed, and one-fifth of No. 1 mixture, and one-fifth of No. 2 added, when the skins are returned to the vat, stirred frequently, and dripped every day for five days, when all the liquors of the solutions should be taken up, and about 20 pounds more of dissolved catechu is to be added. The skins are to be tried frequently, and more catechu is to be added if necessary, and at the end of four or five weeks the operation will be completed.