

Fire Extinguishing Balloons.

MESSRS. EDITORS:—Agreeable with your request I will attempt to give the readers of your valuable journal all the information I possess in regard to Bucher's fire-extinguishing balloons. I regret that I have not at hand the specification of Mr. Bucher's Prussian patent, as without its aid I can only relate what I have seen at various trials before the Chiefs of the Fire Departments of Leipsic and Berlin, and what I have heard concerning the chemical nature of the balloon from the inventor himself.

The balloons are sold in the form of round balls of 2, 4 and 8 pounds each, or in the form of quadrangular sheet-iron boxes, weighing from 5 to 15 pounds. These shells or boxes are filled with a compound of niter, sulphur, charcoal, and common gunpowder, mixed in such proportions that the nitrogenous material is in excess, and in such a manner that the shell explodes slowly and softly, not suddenly and destructively, when exposed to a high degree of heat. Every practical chemist will understand how this is done. In each balloon or box there is inserted one or more tinder rags which have been saturated with gunpowder or niter, so that they quickly catch fire and communicate it to the interior, causing explosion in less than thirty seconds. This rag being lighted, the balloons or boxes are thrown by hand into the room where the fire rages, or with sticks, like rockets; the result is that the room is filled with nitrogenous gas, which extinguishes all the fire within reach. A two-pound shell will fill a room 10 feet square, and the larger ones in proportion. From this short description you will see the superiority of these balloons over Phillips' Fire Annihilators, which are not so conveniently handled; at the same time you will perceive that the balloons can be of little use in the open air, or where the fire extends over a large area.

DR. G. SCHUTTE.

New York, April, 1859.

[Fire-extinguishing bombs of a similar character to those of our correspondent are described on page 349 of "Ewbank's Hydraulics." They were applied in the same manner, and when the powder exploded, it is stated, the flames were instantly extinguished.—Eds. Sci. Am.]

Parchment Size.

Take one pound (or less to suit a particular purpose) of waste cuttings of parchment or vellum, and cleanse them well in water to free them from extraneous dirt and dust. Then put them into an earthenware pipkin with a gallon of soft water to every pound of cuttings, and let it simmer till the water is reduced to half the original quantity. If necessary, which is seldom the case, strain the liquid through a fine hair sieve into any clean vessel, and when cold it will have the appearance of good colorless jelly. To make the size stronger, it is merely necessary to let it simmer by the fire till it attains the required consistency, as it is only the water which evaporates by the action of the heat. It is used by print-cleaners and bookbinders to restore consistency to the paper after it has undergone the chemical process of cleaning, which would otherwise cause it to rot. It is used by ladies to stiffen straw bonnets, children's hats, silk dresses, &c. It is also useful to stiffen leather for modeling; and prints which are taken off on unsized paper, and which consequently cannot in that state be colored, may be dipped in the solution, and when dry, they will bear the color perfectly.

S. PRESSED.

Curious Calculation.

The vast number of inhabitants who do live, and have lived, upon the face of the earth appears, at first sight, to defy the powers of calculation. But if we suppose the world to have existed six thousand years; that there now exist one thousand millions; that a generation passes away in thirty years; that every past generation averages the present; and that four individuals may stand on one square

yard, we will find that the whole number will not occupy a compass so great as one fourth the extent of England. Allowing six thousand years since the creation, and a generation to pass away in thirty years, we shall have two hundred generations, which at one thousand millions each, will be two hundred thousand millions, which being divided by four persons to a square yard, will leave fifty thousand millions of square yards; there are, in a square mile, three millions, ninety-seven thousand, six hundred square yards; by which, if the former sum be divided, it will give sixteen thousand one hundred and thirty-three square miles, the root of which, in whole numbers, is about one hundred and twenty-seven; so that one hundred and twenty-seven miles square will be found sufficient to contain the immense and almost inconceivable number of two hundred thousand millions of human beings; which vast number rather outnumbers the seconds of time that have passed since creation.—*English Paper.*

Inspection of Gas Meters.

At the late session of the Legislature of this State, a law was passed, which went into operation on the 4th inst., providing for an inspector of gas-meters, and every new meter must now be subjected to an approved test before it can be put into public use by any gas company. If found defective, the inspection fee is to be charged to the company; otherwise the consumer pays it. The inspector appointed for this city is George A. Kitchen, No. 561 Broadway, who is practically conversant with the business. The greatest manufactory of gas-meters in this city is that of S. Downs, in West Twenty-second street, where great numbers of these useful and ingenious apparatuses are made for every city and town in the Union lighted with gas. We understand that dry meters are superseding wet meters to a considerable extent, as they are not so troublesome—neither heat nor cold affecting them to such an extent. The first patent secured for the invention of the dry gas-meter in this country was by James Bogardus, Esq., of this city. Whether the new law of gas-meter inspection will prove a benefit to the people or not, remains to be seen. Judging from the inefficient manner in which most of our statutes are executed, we should say it would not, as it does not provide for the quality of the gas which shall be used, which is a most important point for the consumer.

Missouri Hemp.

A cotemporary states that the farmers in Missouri are now devoting more attention to the cultivation of hemp, and that many of them raise about from 100 to 120 tons annually, besides grain crops. It pleases us to hear this, as we are confident that as good hemp can be raised in the United States as any country on the face of the earth. The greatest drawback to the success of American hemp is the want of care shown by our farmers in preparing it for sale. It is generally very dirty and much broken, whereas the Russian, Italian, and Manilla hems are generally very clean and carefully prepared. If our farmers would take more pains in retting and cleaning their hemp, it would bring one and a half cents more per pound in the market.

LAKE PHENOMENA.—The waters of Lake Ontario are now higher than were ever known before. They have been gradually rising for the past eight years, under what appears to be a law not well understood—that is, they keep rising for a certain number of years until they attain to a certain height, then they gradually decline, and so keep rising and falling in intervals extending over periods of years.

The tumor taken from the King of Naples was embalmed in quinquina, placed in a silver box, and buried in the royal chapel "with proper ceremonies." What are proper ceremonies for the burial of a royal tumor?

Old Wine for New.

The good people of the kingdom of Cathay must have been greatly astonished when the African magician went about their streets offering new lamps for old ones, hoping thereby to gain the wondrous lamp then in Aladdin's possession. The good people of the present day will not be a whit the less astonished when we inform them how to make old wine from new in as short a time as Aladdin was in the genii's garden. Some French chemists have been investigating the ageing of wines, and to facilitate the process, M. Kruger proposes two methods—one to cover the bottles with horse-dung and heat the cellar by means of hot water pipes; and the other to suspend, in the heated cellar, plates of iron over the exposed surface of the wine. The iron, he contends, when in a state of oxidation, extracts the oxygen from the wine, and produces maturity more speedily. M. Odart de la Doree, the author of the "Manuel du Vigneron," &c., indicates a process older and still more rational, which is to heat the bottles. The ancients, we know, were careful to heat their amphoras. He advises us simply to heat the bottles, taking the precaution not to fill them quite full, to prevent their bursting. They are next to be placed in an oven some hours after the bread has been withdrawn, and left there from twelve to twenty hours. They are then taken out, filled up, re-corked, and the operation is completed. The wine, it is said, will speedily attain maturity.

A Rat-Skin Suit.

An ingenious individual, of Liskeard, Cornwall, England, has, for some time past, been exhibiting himself in a dress composed from top to toe of rat-skins, which he has been collecting for three years and a half. The dress was made entirely by himself; it consists of hat, neckerchief, coat, waistcoat, trousers, tippet, gaiters, and shoes. The number of rats required to complete the suit was six hundred and seventy; and the individual, when thus dressed, appears exactly like one of the Esquimaux described in the travels of Parry and Ross. The tippet or boa is composed of the pieces of skin immediately round the tail of the rats, and is a very curious part of the dress, containing about six hundred tails—and those none of the shortest.

Hair of Children.

It is a great mistake to plait the hair of children under eleven or twelve years of age. The process of plaiting more or less strains the hairs in their roots by pulling them tight; tends to deprive them of their requisite supply of nutriment, and checks their growth. The hair of girls should be cut rather short, and allowed to curl freely. When they are about eleven or twelve, the hair should be twisted into a coil not too tight, nor tied at the end with thin thread but with a piece of ribbon.

Treatment of Peach Trees.

R. Seaman, of Cecilton, Maryland, thus gives his plan of treatment of peach trees, which he cultivates on a large scale:—

They should be carefully examined every year, and all the worms and ova destroyed. A shovelful of wood ashes thrown around the roots every spring is beneficial. When six years old, the soil should be cautiously removed for about two feet around the trunk, so as to examine the root. A strong wash of lime and some salt should then be applied to the top of the root at the trunk and for about eighteen inches above it, prior to which application the rough bark should be scraped off. The removed soil is left open for one week, then placed in its former position. A yearly examination for worms, a rich soil, and careful cultivation are all necessary for the prosperity of the peach-tree.

PROSPECTUS OF NEW VOLUME.—See last page of the paper. No such opportunity to begin new subscriptions is likely to occur again for many years. The volumes of the new series will be of great value for preservation and future reference.



*. Persons who write to us expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their communications.

We are unable to supply several numbers of this volume; therefore, when our subscribers order missing numbers and do not receive them promptly, they may reasonably conclude that we cannot supply them.

J. C., of Ohio.—Your theory of the action of the brain is not new; it has long been acknowledged as feeding the nerves and smaller centers of ganglionic matter with nutriment as well as sensation. Else why do certain phosphogenized compounds particularly assimilate themselves to it, but to give it matter for the nutrition of itself and branches.

R. H. A., of —.—The idea of a choking strap is not new, but the peculiar form of the one we illustrated was. Your experience of their efficiency entirely accords with our own and Mr. Norvill's.

J. H., of Ga.—Will you not allow an editor to have a bit of fun now and then? we should have thought the satire was plain enough to be understood. Your idea concerning the explosion of saltpeter is very good, as you say, when the "old salt" falls into bad company, and exciting circumstances, it will.

J. W., of Ohio.—Pure white lime, with about an ounce of dissolved glue to the gallon, is the best white-wash for the interior of houses. For an outside white-wash, add one ounce of salt to the gallon of lime and half a pint of sweet milk.

C. A. R., of Texas.—Your proposed route for an Atlantic Telegraph Line by the north of Scotland, the Orkney and Faroe Islands, Iceland, Greenland and by Davies Straits to America, appears feasible, as the largest length of cable required will only be a few hundred miles. The suggestion is not, however, new.

G. G., of Tenn.—The experiments with water-wheels conducted by the member of the Franklin Institute were published in their Journal. The most recent work on the subject is the Lowell Experiments, conducted by Mr. Francis, Engineer, Lowell. Communicate with him as to its price.

H. G., of Me.—We do not wonder you complain at the action of your agent in retaining your model three or four weeks after your papers were prepared and sent to the Patent Office. It is an established rule in this office to send models to the Patent Office every week by express, so that the cases of our clients are never delayed in the manner you suggest. It is not unusual for patents to issue within two weeks after the specifications and drawings are returned to us executed.

G. W., of Mass.—The "calcium light" is produced by burning oxygen and hydrogen gas on a piece of lime. It is better known as the Drummond light, although he is not the inventor of it. The credit is due to Goldsworthy Gurney, of Cornwall, England; he suggested it in a work on chemistry, long before Mr. Drummond had adopted it to make signal lights in the trigonometrical surveys of the British Ordnance Board.

J. M., of N. Y.—No article has ever appeared in the SCIENTIFIC AMERICAN stating that a gold medal and a small amount of money would be given to any one that should invent a substitute for cotton, and a fire-proof paper for banks and commercial purposes. We should like to examine the samples of your alleged discoveries.

J. D. B., of Ala.—A roof of light pitch, covered with thick canvas and painted with two or three thick coats of white lead, then sanded thickly on the surface, will not be equal to one of tin, although it will no doubt answer a very good purpose. All tin roofs should receive a coat of red lead and be sanded on the top.

J. T. G., of Ill.—There is no known simple process for recovering the gold from old jewelry. There are two processes employed—the one by cupellation, the other by acids; both are tedious and troublesome. If you have much of it, we advise you to sell it to a refiner and smelter.

W. B., of Conn.—Zinc and lead do not seem to have such affinities as will make alloys. By introducing small shavings of lead among molten zinc you may be able to make an alloy, but we doubt it.

W. S. R., of Conn.—In order to filter the hard water before it is admitted into your boiler, it should be conveyed into a tank and heated by exhaust steam, then made to percolate through fine wood shavings and gravel, into a receiver, from which it is to be pumped into the boiler. The water, when heated, will deposit its impurities among the shavings and gravel.

J. C. C., of Conn.—A semi-circular groove in a pulley is the best for a round belt, and it is the most easily turned. This opinion is not based on experiment, but simply on a consideration of the question.

J. A. R., of Mass.—We are unable to answer your inquiry.

A. C., of Pa.—It is not enough for you to say that the method for tempering mill picks we recommended is not equal to the one practiced by you. You should explain your method, so that we can know what it is.

J. M. E., of Phila.—Free hydrogen gas is seldom generated at fires, but there is plenty of carbureted hydrogen, which if mixed with free oxygen, will suddenly explode when ignited. Saltpetre, as you state may give off free oxygen, when roasted in a house on fire, and cause an explosion by mixing with the combustible gas.

F. G., of Ohio.—A pound of terra-japonica applied once per week is sufficient for a ten-horse power boiler; it must be dissolved before it is put in. It is said to be very useful for preventing and removing scale.