

## SCIENTIFIC MUSEUM.

## The Purifying of Wine.

There can be no doubt but that the United States is fast becoming a wine producing country. Near the city of Cincinnati, no less than 1,200 acres of vineyards are now under cultivation for the production of wine for sale. About 300,000 bottles of it will be made this year, and perhaps one half as many more next year. This wine is made mostly from the Catawba grape, and is said to be of as good a quality as any made in Europe. In speaking of a fertile and rich land, the orientals used the terms, "it abounds with oil and wine." In those countries where it is used for a table drink by all classes, the same as we use tea or coffee, the people are never given to drunkenness, but use it with moderation as a necessary of life, and never drink it for mere drinking sake. Old fermented wine (what is named unfermented wine is not wine), is the most healthy drink, hence to obtain it of good quality, the wine which is made this year will not be sold for four years more, but will be kept in casks, in vaults where the work of fermentation will proceed so slow that acetic acid will not be formed. In the article published in the Scientific American of last week, on "The Fermentation of Beer and Wine," Liebig lays down a plan for the purification of wine by a quick process, which deserves the attention of our wine growers. By practicing it they will save considerable money, and they should at once experiment—give it a fair trial—and if found successful, put it into practice.

There are some wines sold for "the pure juice of the grape—unfermented"—which we must say are not healthy, in fact they are not true wines. By slow fermentation, the juice of the grape deposits on the sides of the casks in which it is contained, quite a thick scale of a dark brown substance, which is as hard as a stone and named "crude tartar." In every case the juice of the grape should be deprived of this substance before it is used. In that scarce and dear wine of Hungary, obtained from the ripe grapes which, by their own weight when laid in baskets, press out their juice, and not obtained from those submitted to the press, this substance, we believe, is unknown, and this accounts for its superiority.

## Human Fat Candles and Soap.

When the cemetery of the Innocents at Paris was removed to the outside of the barriers, the buried corpses which had accumulated to the depth of 60 feet, were found, to a great extent, apparently converted into fat. The substance of the skin, cellular tissue, and tendons, all the soft parts, and even the bones had completely disappeared, leaving only the fat, which, resisting longest the influence of decay (oxygen), remained in the form of margaric acid. This human fat was employed to the extent of many tons by the soap boilers and tallow chandlers of Paris for the manufacture of soap and candles. The French are a people of fine sentiment, and they certainly carried the quality to a charming point of reflection in receiving light from candles made out of the bodies of their fathers. We loathe the cannibal, but civilization has features which, if not rendered familiar, would be as repulsive as the practices of the savage.

## What is heat?

Maj. G. G. Rains, U. S. A., in a scientific lecture before the Port Huron Lyceum last winter, asserted, with argument to prove, that as an alkali and acid combine to produce salt, so positive and negative electricities combine to produce heat; that the ocean of heat pervading space is, therefore, a compound, in which undulation produces light, while friction and contact of different bodies, separate its parts, and produced electricity.

## An Excellent Tooth-Powder.

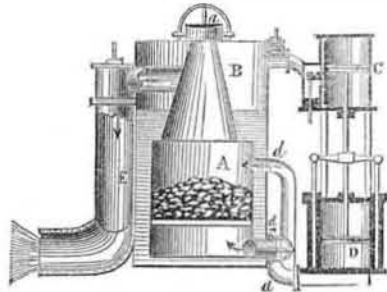
Dissolve gunpowder in a tumbler of water, and when settled pour off the clear water, and the remainder is the tooth-powder. Try it.

To clean the hands of the discolorization from nitrate of silver (lunar caustic), dissolve iodate of potash in water, and with it wash off the stains.

## Heat for Propelling Ships.

The annexed engravings are sectional views for explaining a mode for propelling vessels by the direct effect of the products of combustion applied to propel the vessel. The proposer of this plan is Alexander Gordon (of Scotland we believe) somewhat famous as the author of a work on the propulsion of steam carriages on common roads. The London Mining Journal states, in 1846 it noticed this plan which has been patented. The nature of the invention consists in propelling vessels by the action of the products of combustion raised in a closed furnace supplied with air by blowers, impinging on water from a pipe at

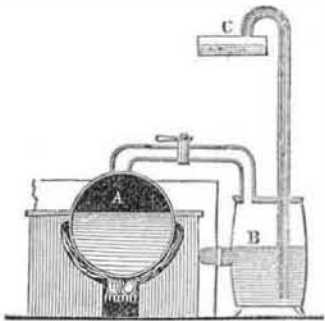
FIG. 1.



the stern, thus driving the vessel forward. It is stated that several competent and influential gentlemen in England, together with a rich ship-builder, have urged Mr. Gordon to introduce his invention, and the Lords of the Admiralty have offered the use of a screw steamer to make a trial. Mr. Gordon has issued a pamphlet, wherein he lays down his principles as follows:—1st. Heat is the propelling power. 2nd. The locomotive powers of the locomotive and rocket are derived solely from heat; steam is the result of part of the transmission of heat to water, and the engine transmits this power; the rocket is impelled by the direct products of combustion; he applies the product of heat to impel a vessel by applying the direct products of combustion to force it forward, upon the principle of a rocket's action in water.

A, figure 1, is the chamber of combustion, there may be a number of them; B is a boiler surrounding the furnace, it receives its heat by radiation, and makes a small quantity of steam to work the blowers, D, by a small steam engine, C. The air is forced in by the pipes, d, d. The furnaces are to be supplied with fuel only once in two hours, through the cap, a; the blast is to be turned off while the fire is thus being fed. The heated gases pass through the funnel, E, to act upon the

FIG. 2.



water at the stern of the vessel upon the same principle as Rumsey first employed water, only he forced it in by a pump which was worked by a steam engine. In figure 2 is shown the method which the Marquis of Worcester employed to force up water by the direct agency of steam. A is the steam boiler, the steam of which acts directly on the water in the vessel, B, which forces it up into the receptacle, C. Mr. Gordon calculates that a cubic foot of anthracite coal in combustion will exert a force equal to 473,600,000 lbs. raised 1 foot high, but in the boilers of steamships he asserts, it never exceeds 85,000,000 lbs., leaving a balance of 388,600,000 lbs. against machinery. Heated air, he also alleges, is more economical than steam, saving more than 2½ lbs. of coal out of every 8 used. "One-half the heated air," he says, "escapes out of the chimney of steam boilers, and as much as 20 per cent. is lost, which does not enter the water," and thus Mr. Gordon asserts that only about 30 per cent. of the force of heat generated under a steam boiler is obtained by using the steam. All this 70 per cent. he is going to save by the hot carbonic acid gas—the products of combustion—applied

directly to the propulsion of a vessel as represented.

There is not too much truth in the assertion that "about 50 per cent. of the heat passes up the chimney," but we do not know what remedy to devise excepting the complete combustion of the fuel and plenty of heating surface to absorb the heat. We do not see how Mr. Gordon's plan will operate at all. As far back as 1827 a gas and heated air engine was patented by Mr. Ward, of Baltimore, Md.—We believe that Mr. Fulton, of Baltimore, four years ago, proposed to drive vessels by hot water forced through tubes towards the stern of the vessel, but we have never before seen or heard of anybody but Mr. Gordon who proposed to drive a vessel by smoke. It is very evident that a fire would not burn well in a stove if the chimney pipe dipped down into a tub of water, and no one who understands the law of gaseous absorption would propose it. The reason why a chimney draws (we use the common term) is owing to the atmosphere being a gaseous element, which absorbs, (by a law now well understood), or receives another gas into its bosom. This is not the case with water, therefore, Mr. Gordon employs a blower to force the air in, consequently the force of the blower is all the power he can have to drive his vessel. But then, as the blower is to be propelled by heat radiated from the furnace, and as the furnace will not draw through the water, we do not see how the smoke principle can be made to operate at all. Mr. Gordon asserts that he will save three-fourths of the fuel, one-half of the cost of attendants, the great tonnage of the coal, three-fourths of the first cost of machinery, three-fourths of the annual expense of maintenance, and effect a great saving of life and property. In short, a new era in ship propulsion is about to be ushered in by Mr. Alexander Gordon, by substituting carbonic acid gas for steam, and applying it directly to propel a vessel by allowing it to issue at the stern through a funnel, almost like the re-action water-wheel.

## The Harlem Railroad Tunnel.

On Thursday morning of last week, as the first train down was entering this tunnel, the engineer perceived something looming up dark on the track, put on the brakes, and arrested the train just in time to prevent a fearful collision, with a huge mass of falling rock, and thus saved the lives of perhaps 30 or 40 passengers. There were about 400 passengers on the train, and had it been a night instead of a day train, there can be no doubt but a fearful loss of life would have been the result. It is good that a merciful Providence watches over the lives of the passengers who journey through that tunnel, for the Railroad Company do not. Last year a mass of rock fell down in this tunnel just after a train had passed; at that time we directed attention to a means for preventing the contingency of an accident by any such cause; this was to arch the whole interior of the tunnel with brick, wood, or iron. This will prevent the rock from falling down.—The Grand Jury of New York should indict the company for keeping this tunnel in such a state—it should be declared unsafe and dangerous. This should be done at once, for we are sure that no less than 10,000 passengers pass through this tunnel every day. One of the engineers, to our knowledge, has declared that he never enters this tunnel with his engine without experiencing a fearful foreboding. This is an evil which should be remedied at once. Will the Railroad Company see to it that this is done?

## An Unrighteous Act.

The Wheeling Intelligencer gives an account of a certain contractor on two railroads who lately absconded after receiving the payment of \$6,000 on estimates of his work. He had two gangs of workmen whom he left unpaid for more than a month's work. This was a very wicked act; the money would have done these poor workmen much good, in providing something for winter, for which they had no doubt intended it.

A railroad convention was held at Houston on the 11th ult., at which spirited resolutions were passed, recommending the State to engage vigorously in constructing them.

## LITERARY NOTICES.

**RAILWAY MACHINERY**—This is a new work, to be completed in 24 parts, at 65 cents each, by Daniel K. Clark, engineer, and is published by Blackie & Son, of Glasgow, Edinburgh, and London, and No. 117 Fulton street, New York. It is a treatise on the Mechanical Engineering of railways, and embraces the principles and construction of the engines, &c. It commences with a history of the Locomotive, and is illustrated with beautiful wood engravings. Each part contains two double plates, and one or two sheets of letter-press, with many good wood-cuts. From the specimen before us, we believe it will be the best work of the kind ever published.

**COMPLETE PRACTICAL BREWER**—This neat and useful little volume, by M. L. Byrn, M. D., has just been published by H. C. Baird, of Philadelphia, and is for sale by John S. Taylor, 143 Nassau street, this city. It contains plain and accurate instructions in the art of Brewing Ale, Beer, and Porter, also for making the Bavarian Beer, Root Beer, Ginger Pop, Sarsaparilla Beer, &c. The making of malt beer is an important business in our country, and as a beverage, or a drink for the table, good malt beer is much healthier than the "root beers" and soda water drinks, which are taken so freely as temperance drinks. We speak of their chemical nature. This work treats fully upon all the different processes, and is illustrated with engravings.

**ELECTROTYPING MANIPULATION**—This is another exceedingly useful little volume, in two parts, published by Mr. Baird, and sold by J. S. Taylor, at the above place, in this city. The author of it is Chas. V. Walker, of London, editor of the "Electrical Magazine," &c. We are well acquainted with this work, and can recommend it to all electricians, amateurs and practitioners. It is illustrated with engravings, and describes the mode of preparing the moulds, gilding, plating, &c., and gives instructions how to manage the batteries.

**NATIONAL PORTRAIT GALLERY**—Peterson & Co., Philadelphia—The present number of this truly American work contains engravings of Henry Clay, Daniel Webster, and Wm. Wirt, with a biographical account of these distinguished statesmen. The work will be completed in forty Nos. of which the above is the seventh, and, when entire, will be a valuable addition to American literature. The whole arrangement does great credit to its publisher. Wm. Terry, 113 Nassau street, agent for New York.

**GRAHAM'S MAGAZINE**—For November, 1852: Dewitt & Davenport, Tribune Buildings. The present number of this popular periodical is in no way inferior to its predecessors, and contains a vast amount of readable matter in its columns. Among the contributions to its pages we observe articles by Dickens, Mrs. S. C. Hall, and other well-known literary characters. In addition to the wood-cuts that accompany the letter-print, there are two good engravings at the frontispiece.

**MEYER'S UNIVERSUM**—No. 8 contains the following elegant steel engravings with descriptive text: "Washington's House at Mount Vernon," by Horace Greeley; "Erlangen," Bavaria; "Cape Horn;" "A Masked Ball at the Opera House in Paris." Price 25 cents, or \$3 per volume. It is a beautiful number; published semi-monthly by H. S. Meyer, 164 William st., N. Y.

**BIBLIOTHECA SACRA**—This distinguished and able Review for October, contains a most able article on the "Vestiges of Culture in the Early Ages;" and another on "Islamism," which have greatly interested us. This is a work in which every American clergyman and christian may feel an honest pride. Its standing is so high abroad, that it is reprinted in Britain. It is published by W. F. Draper, Andover, Mass.

**NEW JERSEY MEDICAL REPORTER**—The October number of this Monthly Magazine, edited by Joseph Parrish, M. D., of Burlington, N. Y., commences a new volume. It is an able and excellent Medical Journal. We derive much information from its columns.



## Manufacturers and Inventors.

A new Volume of the SCIENTIFIC AMERICAN commences about the middle of September in each year. It is a journal of Scientific, Mechanical, and other improvements; the advocate of industry in all its various branches. It is published weekly in a form suitable for binding, and constitutes, at the end of each year, a splendid volume of over 400 pages, with a copious index, and from five to six hundred original engravings, together with a great amount of practical information concerning the progress of invention and discovery throughout the world.

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