Scientific Museum.

DYEING BLUE.—Dissolve one part of indigo in four parts of concentrated muriatic acid ; to the solution add one part of dry carbonate of potash, and then dilute it with eight times its weight of water. The cloth or yarn must be boiled for an hour in a solution containing five parts of alum and three of tartar for every thirty-two parts of cloth or yarn. It is then to be thrown into a water bath previously prepared, containing a greater or smaller proportion of diluted sulphate of indigo, according to the shade which the material is intended to receive. In this bath it must be boiled till it has acquired the wished for color.

TO DYE YELLOW.—Wool may be dyed yellow by the following process : let it be boiled for an hour with one-sixth of its weight of alum dissolved in water as a mordant. It is then to be plunged, without being rinsed, in a bath of warm water, containing as much quercitron bark as equals the weight of the alum employed as a mordant. Turn the cloth through the boiling liquid till it has acquired the intended color. Then stir in one-hundreth part of the weight of cloth of powdered chalk, and continue the boiling eight or ten minutes longer.

For a Bright Orange or Yellow Color, the oxide of tin must be used as the mordant. To make it a *bright* yellow, a little alum must be used with the tin. If a little be added, it will give the yellow a delicate shade.

TO DYE BLACK.—Boil the wool, cloth, or yarn two hours in a decotion of nut-galls ; afterwards keep it two hours more in a bath, composed of logwood and sulphate of iron kept at a *scalding* NOT boiling heat. During the operation the material must be frequently taken out and exposed to the air. The proportions are five parts sulphate of iron, thirty parts logwood for every one-hundred parts of cloth, yarn, or wool. A little acetate of copper added to the sulphate of iron improves the color.

[We select the above receipts from the Louisville Journal, which copies them from the North American Farmer. As they will no doubt have a wide circulation, we would like to correct the errors in them, as they may lead to expense, waste and immediate injury, both to stuffs and cloth. 1st—To dye blue, never use muriatic acid, it will destroy the coloring qualities of the indigo, and make a dirty greenish black liquor. The proper acid is good sulphuric—and don't use any potash, and the blue can be dyed without the tartar or alum. It is at best a fugitive color. For farmers the *old fashioned* way for wool is the best. The above will not dye cotton, but the sulphate of indigo dyes silk, and does well to renovate ribbons, &c.

2nd—By scalding with boiling water, some quercitron bark, and then using the clear, boiling it with some of the muriate of tin in a clean tin or copper kettle, a beautiful yellow will be dyed on flannel or cotton, and by adding a little tartar and ground cochineal, a beautiful salmon color, or an orange color, will be produced.

3rd—If persons want to spoil their cloth, they will dye it black, as above directed. In dyeing black first boil the woollen cloth in two ounces of copperas to the pound of wool, along with a very minute quantity of sumach. This is done for an hour, when the cloth is taken out, dried and then boiled in a solution of logwood, at the rate of four or five ounces to the pound. This is boiled for one hour, and a good black is produced. If the color is grey, it wants more logwood—for some is very bad; if too brown, it has too much logwood in it, and it has to be removed by washing the cloth well first, and then running them through a weak acidulous liquor, such as a little sulphuric acid in water. They must be well washed after this.

Of the many receipts published for the benefit of our farmers, we are sorry to say, that we can now and then only find a correct one.

Liquid Hydrogen Gas.

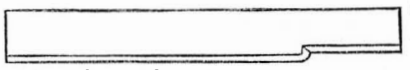
Mr. E. Brown, of Preston, Eng., has discovered a mode of reducing hydrogen gas to a liquid. This discovery may be of great importance to ærial navigators. A paper on the subject is soon to be presented to the Royal Society.

Hollow Iron Moulding.

[Continued from page 40.]

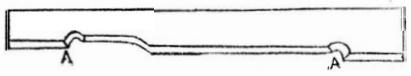
A core-bar for a pipe of any given inside diameter is selected two or three inches less in diameter, with the view of providing for hay-rope and loam, by which the core is made up to the necessary thickness. The loam, which forms the external coat of the core, is made as open as practicable by augmenting the usual proportion of sharp sand in its composition. The hay, also, which is simply twisted into ropes to facilitate its application to the core, fulfils the important office of a conducting medium for the air forced through the loam, leading it from all parts of the surface to the vent

FIG. 8.



holes in the core-bar. The method of applying the hay and the loam is simple. The core-bar is rested by its pivots on two iron tresses, the upper edges of which are formed with corresponding semi-circular or triangular dentations, to receive the pivots. Thus placed, the core-bar is caused to revolve by a crank-handle applied at one extremity, during which operation the rope is led on regularly along the bar from end to end, and fastened there. It must be tightly done, as any slackness in the rope will permit it to yield when subjected to the pressure of the iron, which has the effect at least of altering the form of the pipe, if, as in some cases, it does not break up the core and spoil the casting. Before finishing the core with loam, the hay receives a slight coating of it all over, as a cement to smooth down the surface. This being dried, for the succeeding application of the loam, a loam-board is necessary. This is a board of sufficient length to rest upon the tresses which support the core. Along this board is laid the loam intended to form the core. The edge of the board is cut exactly to the form of the

FIG. 9.

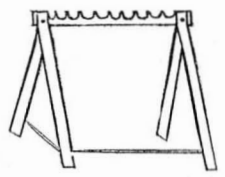


core, being, indeed, a half-skeleton reversed. This board being then set along-side the bar, and weighted down at the extremities, at a distance of the half diameter of the pipe from the centre, it is evident that, as the core-bar revolves, and the loam is pushed over upon it, there will ultimately be formed a coating of loam completely enveloping the coat of hay, which shall also possess the figure of the core.

Fig. 8 shows the loam board employed in constructing the core of the pipe, (fig. 6—see last number.) It will be observed to follow the outline of the core. Fig. 9, in like manner, represents the loam-board that would be required to form the pipe itself, (fig. 5,) were there no wood pattern of it. In such a case an additional coat of loam is run by means of it upon the core. (fig. 6.) In this way, it is evident, a loam pattern is at once formed. In setting the board, the parts A A, fig. 9, will apply to the same parts, (A A, fig. 6), which, in so far, serve for a guage. The misplacing of them exactly opposite each other is to be guarded against, as there is not the same security

FIG. 10.

FIG. 11.



for their being correctly placed. Before receiving, however, the addditional thickness, the core must be washed over the surface with charcoal and water, that the thickness may be easily separable afterwards, and also thoroughly dried in the stove. In the meantime, having finished and dried the loam pattern, it receives in like manner a wash with charcoal water, and is ready to be moulded. This being done in the usual manner, the thickness is peeled off, and the naked core replaced in the mould. To aid the stiffness of the core, steeples are planted here and there over the surface of the mould. Fig. 10 is a cross section of the body of the core. There are three concentric piles—the inmost, which is the core-bar, with several vent-holes in section, and the cross-knee at the end ; the next is the hay, and the external coat is the loam. Fig. 11 is a sketch of one of the iron tresses used in the work.

All wood patterns of pipes are constructed in two halves, which have two or more pins in the one entering corresponding recesses in the other, to prevent their shifting when put together and moulded. In proceeding to mould a pipe, a laying-down board is usually employed, which is simply a straight piece of wood as long and as wide as the moulding-box. Upon this board one half of the pipe is laid with the flat side down, the box is placed over it and rammed ; the whole is inverted, and the board lifted off. The remaining half of the pipe is set upon the imbedded half, and the upper box over it, and linked to the under one ; the upper box being rammed, the patterns are loosened, as we have in other parts described, and longitudinally also by blows upon the ends. The boxes being parted, the patterns removed, and the moulding blackwashed with blackening, the core is set in, and the box closed. Small pipes, when there are several to be cast, are usually moulded in pairs in one box, when green sand is employed as a moulding material. The metal is poured in at one entrance, which branches to each moulding ; shortly after which streams of aqueous vapor mixed with hydrogen and other gases, arising from the imperfect combustion of the charcoal and hay, are expelled from the extremities of the core-bars, sometimes resolving themselves into luminous jets. Soon after the metal is poured, the castings are turned out to cool ; after which the core-bars are drawn from them, which is a comparatively easy task, as the hay has been for the most part consumed, and of course occupies less bulk. Long small rods of iron are next introduced, with scrapers formed on the ends of them, and are drawn from end to end, to clear the interior of the pipe of the remains of the core.

Choloretic Discovery.

Th London Medical Gazette states that a most important discovery has just been made known by certain Doctors Snow, Budd and Brittan, and other celebrated physicians, respecting the cholera. They have prepared a very long report, which will soon be published, in which they show that the cause of malignant cholera is "a living organism of distinct species." Dr. Budd procured water from different parts of London, and detected organisms in great numbers in every specimen of drinking water. He states, in a long letter to the London Times, that this organism is of the fungus tribe, and is taken, by the act of swallowing, into the intestinal canal, and there becomes "infinitely multiplied by the self-propagation which is characteristic of living beings." The pressure and propagation of these organisms, and the action they exert, are the cause of the peculiar flux which is characteristic of malignant cholera. These organisms are disseminated in the air, in the shape of impalpable particles, in contact with articles of food, and principally in the drinking water of infected places. The evidence on which these conclusions are founded, has been placed in the hands of the President of the College of Physicians, and will shortly be made known to the world for the benefit of mankind.

There have been so much said about this and that discovery, relative to the cause of cholera, that we have become quite skeptical about reported *new discoveries.*

Linseed Oil.

This oil is obtained in its greatest purity by cold pressure, but by a steam heat of about 200° Fahr., a very good oil may be extracted. The usual method is to torrefy the seeds in order to destroy the mucilage, to bruise, and then submit them to pressure. The oil is of a greenish yellow color, and has an odor peculiar to itself. It is siccative especially when boiled with litharge, becoming then reddish and clear after repose. It dissolves in five parts of boiling and forty of cold alcohol, and in 1.6 parts of ether. When kept for some time in a partially open cask, and in a cool place, it deposits a portion of its cold constituent along with a brown powder.

Tam-Tam.

It is remarkable that copper possesses properties, in respect to its hardening and tempering, which are the opposite of those of cast iron and steel : when cooled slowly, it becomes hard and brittle ; but, when cooled rapidly, soft and malleable. In a yet more remarkable degree is this anamalous property possessed by an alloy, composed of four parts of copper and one of tin, called tam-tam, used in the construction of gongs and other musical instruments.

LITERARY NOTICES.

We have received from V. B. Palmer, Esq., a copy of his Business Men's Almanac for 1850. It conntains many excellent articles upon all the most important branches of trade, which, together with its astronomical calculations, forms a very useful compilation not only for the counting-room, but for general use. Single copies 12 1-2 cents. Address V. B. Palmer, New York.

SARTAIN'S UNION MAGAZINE, for November, has been sent us by Messrs. Dewitt & Davenport, Tribune Buildings. The contents both in quality and quantity cannot be surpassed by any other periodical of the kind. The embellishments are superb, and reflect credit upon the artists. The contributions are from the pen of the very best authors ;—among them we notice "Leaves from the bank of the Rhine," by Fredrika Bremer, whose arrival in this country has just been announced.

HOLDEN'S DOLLAR MAGAZINE, under the management of Mr. W. H. Deitz, loses none of that attractiveness which has characterized it while controlled by its former proprietor. The number before us for November contains many excellent articles, besides a biography and likeness of the gallant Hungarian General, Arthur Gorgey . A new Volume will be commenced the 1st of January, with many important improvements. For particulars see advertisement in another column.

GRAHAM'S MAGAZINE, for November, has been sent us by W. H. Graham, Brick Church building, this city. The embellishments are beautiful, consisting of "Happy as a King," "Head Quarters of Gen. Knox," —a very splendid engraving ; "Paris Fashions, " and "The Balize." This number is excellent throughout We notice that a new Volume commences January 1st.

RANLETT'S ARCHITECT.—No. 9, Vol. 2, of this superb monthly periodical, contains plates of three designs, with perspective and sectional views, and full specifications. Every stick, stone, stair, and part of the building, is specified, and the average price laid down, and the whole footed up. No person who is interested in architecture, in any manner, can well be without this excellent publication.