

USEFUL INFORMATION.

Impure Water.

The Journal of Chemistry says: Public attention cannot be too often called to the danger of using impure water in households.

Since the general introduction of aqueduct water into large cities, typhoid fever has become more common in the country than in the city, and this disease is certainly zymotic, or one which results from a poison introduced into the blood.

The instances of such contamination which have come to our notice, and which give rise to fevers, are numerous. The gelatinous matter which is often found covering the stones in wells affected by sewage, is a true fungoid growth, and highly poisonous when introduced into the system.

As a solution of the difficulty the African says: The use of quicklime in the purification of water has long been practiced by dyers, the philosophy of its action being that, by neutralizing the carbonic acid dissolved in water, the carbonate of lime held in solution is precipitated, the latter being insoluble in water which does not contain carbonic acid.

The patent upon a peculiar kind of filter for this purpose has been obtained by Mr. Gustave De Mailly, a civil engineer of Brussels. He used a filter consisting of a cylindrical vertical case of sheet or cast-iron, furnished with a lid, which case contains another cylinder, which is the filter proper.

Use of Waste Paper.—Few housekeepers are aware of the many uses to which waste paper may be put. After a stove has been cleaned, it can be kept looking very well for a long time by rubbing it with paper every morning.

To Remove Gas Fittings.—Boil the work in strong lye and scum free from all grease or old lacquer, then pickle in dilute nitric acid till quite clean (not bright), dip in strong acid and rinse through four or five waters; repeat the dip if necessary till it is bright, next bind it very loose with thin iron wire, and lay it in the strongest of the water used for rinsing.

Tobacco Leaves.—The State Chemist of Connecticut, in his report, presents some interesting information in reference to the tobacco crop, with the results of tests upon the tobacco leaves. The general summary of the reports is as follows: The most highly valued tobacco in New England is the thin, tough, elastic leaf, which bears readily to ashes.

the latter in solution and then drying. Chlorine injures the tobacco, as also does nitric acid. Sulphuric acid, united with potash, soda, or lime, favors the burning of tobacco. The best tobacco is produced on well-drained, warm, sandy lands. It is believed heavy manuring increases the quantity of the crop generally at the expense of quality as regards texture.

Test for Arsenical Colors on Wall-Papers and in Paper generally.

Professor Hager recommends the following method for detecting the dangerous class of arsenical colors, which, we may remark, are not confined to green alone, for red sometimes contains arsenic: A piece of the paper is soaked in a concentrated solution of sodium nitrate (Chili saltpeter) in equal parts of alcohol and water, and allowed to dry. The dried paper is burned in a shallow porcelain dish. Usually in only a few minutes, producing no flame. Water is poured over the ashes and caustic potash added to a strongly alkaline reaction, then boiled and filtered. The filtrate is acidified with dilute sulphuric acid, and permanganate of potash is added slowly as long as the red color disappears or changes to a yellow brown upon warming, and finally a slight excess of oxalic acid solution is present. If the liquid becomes turbid, it is to be filtered. After cooling, more dilute sulphuric acid is added, and also a piece of pure clean zinc, and the flask closed with a cork split in two pieces. In one split of the cork a piece of paper moistened in silver nitrate is fastened, in the other a strip of parchment paper dipped in sugar of lead. If arsenic is present, the silver soon blackens. The lead paper is merely a check on the presence of sulphuric acid. According to Hager, the use of permanganate of potash is essential, otherwise the silver paper may be blackened when no arsenic is present.

DYEING YEWERS.—Yewers are readily dyed upon the surface, but in this condition are much more liable to discoloration than when the color is made to permeate the mass. Those colored throughout are therefore the most sought after, and before the late war were chiefly furnished from Paris. During the war, the supply being cut off, some German cabinet makers took up the subject, and after numerous experiments perfected a process which secures the desired result. The yewers are first soaked for twenty-four hours in a solution of caustic soda, and then boiled therein for half an hour. They are then washed with water until all the alkali is removed when they are ready to receive the dye. This treatment with soda effects a general disintegration of the wood, whereby it becomes in the moist state elastic and leather-like and prepared to absorb the color. Yewers, thus treated, if left for twenty-four hours in a hot solution of log-wood, and after superficial drying immersed for twenty-four hours more in a hot solution of copperas, become of a beautiful and permanent black throughout. A solution of picric acid in water, with the addition of ammonia, gives a yellow color not in the least affected by subsequent varnishing. Coralline dissolved in hot water, to which a little caustic soda and one-fifth its volume of soluble glass have been added, produces rose color of different shades, dependent on the amount of coralline taken. After dyeing they are dried between sheets of paper, and subjected to pressure to retain their shape.—Paint and Oil Trade.

Progress in Glass-Making.

Siemen's regenerative process for melting of glass has proved very successful, and has been introduced in some of the most extensive manufactories in Europe. By means of its use the amount of smoke is greatly diminished, the color of the glass is improved, a greater control is obtained over the furnace, and a saving of fuel is effected wherever, by this process, slack can be substituted for large coal or lumps, such as is at present so largely in use. Should the expectations in regard to the use of this furnace for the melting of glass be fully realized, the gain in that manufacture will be very great, and the process will fully supplement those other improved methods which have brought glass-making to its present state of advancement. The substitution, some years ago, of carbonate of soda as the alkaline ingredient in glass, in place of alkali, and, subsequently, for crown and sheet-glass of sulphate of soda, in place of carbonate, was but the beginning, though a most important one, of improvement in this direction. This was followed by an increased size and better workmanship in the plates, sheets and tables, and by an improvement in the color of glass by use of purer materials and by modifications in the manner of melting. Numerous changes soon took place in the operation of flattening glass, resulting in the removal or diminution of many imperfections in glass; and to these succeeded the use of the diamond in the splitting of cylinders in the place of a red-hot iron, also an increase in the size of melting-pots and furnaces, with the view of economizing coal and labor, and the adoption, in the casting of plate-glass, of various mechanical contrivances. Finally, the use of the same pots for the two processes of melting and casting plate-glass superseded the old method of transferring the contents of the melting-pot into the vessel used for casting; and then small coal or slack was substituted, in the melting process, for large coal or lumps.—Paint and Oil Trade.

Bridge Building.

Mr. J. M. Goodwin, of Cleveland, Ohio, has lately patented certain improvements in bridge construction, which are described as follows in the specifications: The object of my said invention is to relieve the principal girders, chords, side or middle trusses, or beams of bridges, and girders, beams of trusses used in structures other than bridges, of the action and effect of loads moving along or over them, technically known as 'rolling loads'; and to cause the stress of any load passing along or over, or distributed unequally upon, any bridge or structure in which said invention or device is used, to act always in a direction nearly absolutely vertical, and practically vertical, upon one certain surface, and at the same time to cause the stress of such rolling loads to be brought upon such surface or surfaces by a gradual accumulation, the stress upon such surface or surfaces of the principal girder or girders, acting at all times in a direction practically vertical, as aforesaid, and with a force always in proportion to the distance from the ends of the bridge at which any load upon the supplementary girders aforesaid may be (the said load being in this connection considered as passing from end toward center, the force only, and not the character, of such stress being changed by the changing of the position of the load), thereby removing from the principal girder or girders those undulatory and otherwise distorting disturbances of fiber which are produced by the direct action of rolling loads; and also to cause the stress of any unequally distributed load to be transmitted to the principal girder or girders aforesaid, through the surface or surfaces, and in the direction, nearly and practically vertical, hereinbefore specified.

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