

## NOTICES OF BOOKS.

*A Practical Treatise on Coal, Petroleum, and other distilled Oils*, by ABRAHAM GESNER, M.D., F.G.S. New York: Balliere Brothers, 440, Broadway.

This work will, no doubt, be eagerly sought for by many interested in Petroleum, who would be led by its title to suppose that it entered thoroughly into the discussion of the purifications of the natural oils as well as the coal oils. This is not the case, and the book on the whole is disappointing, although it ought to find a place on the shelves of our Mechanics' Institute Libraries. But while it does not satisfy the requirements of the present day, it will be found very useful in directing the practical manipulator to discover for himself the best method of purifying the natural oils (of which there are many varieties) he may chance to work.

*The Manufacture of Vinegar; its Theory and Practice, with especial reference to the Quick Process.* By CHAS. M. WETHERILL, Ph.D., M.D. Philadelphia: Lindsay & Blakiston, 1860.

A very useful work for vinegar manufacturers. The theoretical part is divided into four chapters, which treat respectively of the Chemical Principles involved in the Manufacture of Vinegar—Sugar—Alcohol and Acetic Acid. The practical part describes, in five chapters, the General Details of the Processes Employed—The Slow Process—The Quick Process—Examples of the Practice of the best European Factories—Conclusion.

## MISCELLANEOUS.

## Importance of Ventilation.

Passing from the private shop to public institutions we are compelled to admit the same radical fault—the want of that element which is “the breath of life.” In our churches, schools, and assemblies, people who go there suffer more or less from this evil. It is proverbial how persons, young and old, suffer from colds, bronchitis, and influenza; all of which are said to be “caught” when they return from some public place of assembly. The question naturally arises, How is this? The answer is that it is caused by the sudden change which the body undergoes in passing from a heated impure air to that of the natural temperature, containing also its proper proportion of elements. Man requires for his health one gallon of air every minute of his life; the individuals of a church congregation are rarely, if ever, supplied with that quantity. Only at the cathedrals is the air space in proportion to the worshippers. A man of large lungs inhales about twenty-five cubic inches of air at each respiration; he breathes 11 times a minute, and thus requires nine and a-half cubic feet of air every hour. Now, when there are a thousand persons under one roof (some of the metropolitan churches and chapels containing 2500 persons) for a couple of hours, it is evident that twenty thousand cubic feet of air are required to supply that which is necessary for existence to these thousand persons in a pure atmosphere, so that of course a much larger quantity than that is required in order that a current can be established to remove the effete matter of exhalation. The evils of vitiated air are also more to be guarded against, because persons can live in it without being aware of its danger, as far as their sensations are concerned. When we enter a crowded assembly on a cold day the air is always at first repulsive and oppressive; but these sensations gradually disappear, and we then breathe freely, and are unconscious of the quality of the air. Science, however, reveals the fact that the system sinks in action to meet the conditions of the impure air, but it does so

at the expense of having the vital functions gradually depressed, and when this is continued disease follows. No disease can be thoroughly cured when there is a want of ventilation. It is related that illness continued in a family until a pane of glass was accidentally broken, and then it ceased; the window not being repaired, a plentiful supply of fresh air was admitted. The practice of building sepulchral vaults under the churches was fraught with the greatest evil to the health of those who went into the edifice for sacred purposes. But with few exceptions it is now interdicted by the Legislature; still a great deal in the way of improvement has to be done. Nearly all the churches in the empire require some artificial means of ventilation to render them physically fit receptacles for the body during a prolonged service. The Sunday-schools also, as a general rule, are very ill ventilated; and lessons in the second hour are far worse rendered than in the first, solely arising from a semi-lethargic coma that comes over the pupils breathing a carbonic air which has already done duty and been inhaled by others several times. However it is to be regretted, it is yet true, that people will, sometimes, sleep during the sermon. Now, the minister must not be twitted with this, for with the oratory of a Jeremy Taylor or a Tillotson people could not be kept awake in an atmosphere charged with carbonic gas, the emanations of a thousand listeners. The churchwardens should ventilate the churches, and see that the congregations have sufficient air for breathing; if people go to sleep, they are more to blame than the preacher.—*Picessé's Laboratory of Chemical Wonders.*

## Coloured Liquids.

The gradual decoloration of coloured alcohol by the influence of light and the precipitation consequent on the chemical change produced, is of importance to the druggist anxious for the showy appearance of his windows. The following remarks will therefore be read with interest and benefit:—Solutions of various salts or metals in hydrochloric acid are, some of them, of very great intensity and beauty. Thus, a yellow liquid is obtained by dissolving 3 parts of perchloride of iron, or hydrated peroxide in 100 of hydrochloric acid: the colour may be heightened by adding some hydrated oxide. Various colours are produced with the solution of carbonate of cobalt in hydrochloric acid. The salt of cobalt used must be pure, especially free from iron or nickel, which would prevent the formation of the blue and red shade. The green cobalt colour is obtained by dissolving 3 parts of the protocarbonate in 100 parts of the acid, and filtering. By the addition of a few drops of the above yellow liquid the colour is deepened, and loses the bluish tinge. A blue colour is prepared by dissolving six parts of the protocarbonate of cobalt in 100 parts of the acid, and boiling for about two minutes to remove the carbonic acid or chlorine held in solution. Neither of the above two colours should be diluted with water, as this would change them to red. The violet colour is obtained by dissolving 34 parts of the protocarbonate of cobalt in 100 parts of the acid, mixed with 5 of water, and boiling before filtering. A very fine red liquid is obtained by dissolving 45 parts of the protocarbonate of cobalt in 100 parts of the acid, diluting with 45 parts of water, and boiling. All the cobalt colours change by heating the solutions, which gives them more or less a blue tinge; but, on cooling, this gives way to the colour intended. The solution of carbonate of chromium in hydrochloric acid evaporated until it becomes solid on cooling, and dissolved in alcohol in the proportion of 25 parts of the salt and 100 of the spirit (to which are added 5 parts of acid,) furnishes a fine deep green. Four parts of crystallized acetate of copper, dissolved in a mixture of 50 parts of ammonia, and 50 of alcohol, give a durable blue.