

other words retard its oxidation, among them grape-sugar, formic acid, camphor, and more especially aldehyde; and I think it might be worth while to ascertain, firstly, the exact amount of influence exerted by the last two, and secondly, whether the addition of either, in small quantities, would present any very serious objections.

Sulphuric acid is naturally a very unwelcome ingredient; but old sulphurous acid containing it may be restored for all practical purposes by the cautious addition of a solution of sulphite of barium in sufficient quantity to precipitate very nearly, but not quite all the sulphuric acid as insoluble sulphate of barium the latter being afterwards separated by filtration or decantation. I lay perhaps rather more stress upon the use of sulphite of barium than I should have done if I had not seen the extremely pernicious effects of some of the acid ordinarily sold, when used in the form of "spray" for throat affections, owing merely to the presence of an undue proportion of the higher oxide of sulphur.

New Process for Deodorising Alcohol without the use of Heat or Redistillation.

A new process for effecting this object has been recently indicated by Dr. Artus, and described by him in the last number of the *Vierteljahrsschrift für technische Chemie*. In it he makes use of charcoal impregnated with alumina, which is prepared as follows: The charcoal is first granulated and reduced to fragments of about the size of a split pea. These are sifted so as to separate the finer from the coarser portions. For ever ten pounds of coal one pound of common alum is dissolved in fifteen pounds of water, and, in a separate vessel, one pound of carbonate of soda in five pounds of water. The granulated charcoal is thrown into a wooden vat, and while it is being stirred, it is watered first with the solution of alum, and afterward with the soda. The vessel in which this operation is performed must be able to contain at least double the quantity of material that is to be introduced into it, as the addition of the carbonate of soda causes effervescence, and considerable foaming through the evolution of carbonic acid gas. After the whole of the solution of soda has been added and the whole well mixed, the mixture is allowed to rest for twelve hours, when it is thrown on a strainer, and the liquid allowed to drain off. The charcoal thus aluminized is first dried in the air, after which it is introduced into closed retorts or iron vessels, where it is heated to a red heat. When cold two and a half pounds of this prepared coal is the proportion needed for every German cimer, or about one hundred gallons (four and a half hectolitres) of crude alcohol.

The manner of using this deodorizer is to place the coal within plaited straw mats, and to sink it, by means of heavy weights, in the liquid to be deodorized. After a period of twenty-four to thirty-six hours, the coal is taken out, submitted to a second calcination, and again introduced into the liquid. The same operation is repeated a third and last time. The spirits, after being allowed to remain at rest for a period of four weeks, are found to be free from every trace of the fuel-oil they originally contained. The expense of the process is small in proportion to the profits and advantages to be derived from it. No redistillation or rectifying is required. —*Manufacturer and Builder*.

Notices from Foreign Sources.

(From the Chemical News.)

Evolution of Ammonia Gas from Mushrooms.

M. El. Borscov. — The author says that, many years ago, the late Professor Sachs observed that when a glass rod, moistened with dilute hydro-chloric acid (specific gravity 1.12) was brought near vigorously and healthily growing mushrooms, there appears a white vapor, evidently due to the formation of chlor. ammon. This fact has been confirmed by Dr. G. Lehman, while the late Alexander von Humboldt stated that mushrooms constantly give off, not only ammonia, but also hydrogen. The author of this paper has thoroughly investigated this subject, taking due care to eliminate all sources of error from his experiments by every precaution modern science can suggest and successfully apply. Several engravings would be absolutely necessary for the proper understanding of these researches; but we briefly notice the following results:—(1) different kinds and species of mushrooms give off, while growing vigorously, weighable quantities of ammonia; (2) this evolution of ammonia is not confined to full-grown mushrooms only, but also to the young individuals, and even to some varieties of mushroom spawn; (3) this evolution of ammonia is a proper function of the living organism of these cryptogamic vegetables, and is very little, if at all, influenced by exterior causes; (4) there is no direct relation between the quantity of ammonia and that of carbonic acid given off during a given period of time. The quantity of ammonia given off during a certain length of time bears no direct relation to the weight of the substance from which it is given off. — *Bulletin de l'Académie Impériale des Sciences de St. Petersburg*, Vol. xiv., No. 1.

New Reagent for Brucine.

M. Cottin. — When, to a solution of brucine in nitric acid, hydrosulphide of sulphide of sodium is added, in concentrated solution, the mixture becomes, first, violet, next green-colored, provided the alkaloid is in excess. Morphia does not give any similar reaction under the same conditions; dilute acids render it rose-colored, while sulphuretted hydrogen is given off; 2 milligrams of brucine impart, in this manner, a decided coloration, even to half a litre of water. — *Journal de Pharmacie et de Chimie*, July 1869.

Recent Researches on the Essence of Roses.

M. Fluckiger. — Chemically considered, the essential oil of roses is a mixture of an oil containing oxygen, to which alone the smell and perfume is due, and a solid hydrocarbon, a stearopten absolutely devoid of smell, and composed according to the formula $C_{16}H_{16}$. This hydrocarbon is soluble in chloroform, fuses at 32° and boils at 270° . Potassium does not act upon this substance; treated with a mixture of bichromate of potassa and sulphuric acid, it yields, faintly, a smell of acroleine; with fuming nitric acid, butyric, formic, fumaric, valerianic, and succinic acids are formed. — *Ibid*.

New Apparatus for the Concentration of Sulphuric Acid.

M. Cottelle. — It is a well-known fact that the concentration of sulphuric acid in platinum vessels is an expensive process, owing to the high price of the first purchase of these apparatus, and the expense attending any

soldering or repair. The author has had made a column, lined inside with fire-bricks, and made outside of good ordinary bricks; it rests on a large pedestal. This column is open at both top and bottom; but in these openings are fitted fire-clay stoppers. The inside of this apparatus is fitted with previously calcined pumice-stone; inside the lower portion of this column, openings are made between the bricks, through which a current of highly heated air is forced. From the top, the acid which has to be concentrated is made to trickle on the pumice-stone, and, meeting with a current of highly heated air, the superfluous water is driven off, and the acid, on arriving at the bottom, is in a concentrated state, and runs off in properly arranged vessels. — *Ibid*

Anti-Rust Varnish, or Varnish for Iron and Steel Rods.

Take the following ingredients, 1, 2, 3, in a pounded condition, and digest them by a regular heat till melted, then add the turpentine very gradually, stirring all the while.

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| 1. Resin..... | 120 parts. |
| 2. Sandarac..... | 180 " |
| 3. Gum lac..... | 60 " |
| 4. Essence of turpentine. | 120 " |

The mixture should be digested until complete solution has taken place, then add

Rectified alcohol..... 180 parts.

Filter through fine cloth, or thick bibulous papers, and preserve in well-stoppered bottles or cases. It will be found very effective in preserving things from rust. — *Manufacturer and Builder*.

Molybdenum and Chromium.

These metals can, according to Loughlin, be easily prepared as follows. — A mixture of one part of pure molybdic acid and one and a half of cyanide of potassium is placed in a porcelain crucible, and the lid luted on; this is placed in a large crucible, and the interstices having been packed with animal charcoal, the entire arrangement is exposed to a strong white heat for twelve hours; when cold, the inner crucible is found lined with a white silver-like metal not acted upon by hydro-chloric acid, but readily dissolved by nitric acid, and having a specific gravity of 8.56. By substituting oxide of chromium for molybdic acid, metallic chromium is obtained. — *Engineer*.

To Clean Paint.

There is a very simple method to clean paint that has become dirty, and if our housewives should adopt it, it would save them a great deal of trouble. Provide a plate with some of the best whiting to be had, and have ready some clean warm water and a piece of flannel, which dip into the water and squeeze nearly dry; then take as much whiting as will adhere to it, apply it to the painted surface, when a little rubbing will instantly remove any dirt or grease. After which, wash the part well with clean water, rubbing it dry with a soft chamois. Paint thus cleaned looks as well as when first laid on, without any injury to the most delicate colors. It is far better than using soap, and does not require more than half the time and labor. — *Manufacturer and Builder*

Bleaching Sponges.

The white sponges seen on the stands of our street peddlers, are bleached in the following manner:—The softest, finest specimens