

VANILLINE.—Mr. Gobley has instituted researches concerning the odoriferous principle of vanilla. He found a substance therein which crystallises in long colorless needles: to the taste this substance was aromatic and hot; it does not effect litmus paper, fuses at 70° C., volatilises at 150° C., is nearly insoluble in cold, somewhat more soluble in hot water, and very soluble in alcohol, ether, and volatile as well as fatty oils. Its composition is expressed by $C_{20}H_{30}O_4$. Gobley calls it *vanilline*.

LIQUEFACTION OF GASES.—Mr. Laad has lately exhibited at the Royal Institution, London, a very elegant experiment, showing the liquefaction of gases by pressure. Three glass tubes, open at the bottom, containing cyanogen, sulphurous acid and ammonia in their upper parts, and filled with mercury below, are enclosed in a strong glass cylinder filled with water. At the top of the cylinder is a small force-pump, which, when worked, drives more water into the cylinder, and forces the mercury, which acts as a piston up the tubes. As the mercury rises the gases are condensed, and now appear as liquids at the top. When the pressure is reduced by opening a stop-cock the liquids boil, and the gases speedily resume their normal dimensions.

—A not uncommon adulteration of glycerin is to mix sugar and dextrine with it. These substances have not hitherto been easy to discover when mixed with the glycerin; the following process is, however, said to answer perfectly:—To 5 drops of the glycerin to be tested, add 100 to 120 drops of water, 3 to 4 centigrammes of ammonium molybdate, 1 drop of pure nitric acid (25 per cent.), and boil for about a minute and a half. If any sugar or dextrine is present, the mixture assumes a deep blue color.

With microscopic and blowpipe, Mr. Sorby is developing a new method for the examination of minerals. He fuses a small portion (a bead) of the substance to be examined, in borax, adds various re-agents according to circumstances, keeps the bead at a dull red heat for a short time, when crystals appear characteristic of the substance, and in some instances singularly beautiful in form. The whole process can be seen and the crystals identified under the microscope.

A CEMENT said to possess many advantages, and to be especially adapted for sealing up vessels containing benzoles, etherial oils, etc., is prepared by rubbing up finely ground litharge with concentrated glycerin. The liquid cement is to be poured upon the cork or stopper, or it may be applied with a brush.

MELTED lead, which has a specific gravity of 11.5 will float on melted iron, which has a specific gravity of 7. This has been recently explained by Prof. Karmarsch, of Hanover, who finds that the lead when melted forms a hollow spheroid, which is filled with some vapor of lead, making it specifically lighter than iron. In smelting, however, certain ores of iron which contain lead, the lead is found at the bottom, where, owing to its specific gravity, we should expect to find it.

—PIRE clay rubbed on the hands will remove the unpleasant odor caused by the use of chloride of lime and salts.

THE STAINS OF IODINE.—By adding a few drops of liquid carbolic acid to the iodine tincture, the latter will not stain. According to Dr. Buggs, of the Indian Service, carbolic acid also renders the efficacy of tincture of iodine more certain. He recommends the following formula, whenever injections of the latter are indicated: Alcoholic tincture of iodine, 45 drops; pure liquid carbolic acid six drops; glycerine, one ounce; distilled water, five ounces. In blemorrhœa and leucorrhœa, his mixture is said to be superior to tar-water.

CINCHONA IN JAMAICA.—From 8,000 to 10,000 plants of *cinchona succirubra* are ready for sale in the island of Jamaica, at the plantation at Garden Town, this spring.

Notes and Queries.

C. B. L.—COLORING FOR SYRUPS.—Raspberry and strawberry syrups are commonly colored with magenta. If you have any objections to that substance, on account of its poisonous properties, tincture of cudbear may be substituted. The following proportions may be used:—

Cudbear, 8 oz.

Alcohol, 1 pint.

For sarsaparilla syrup, use caramel or brandy coloring.

Inquirer.—OIL OF ARNICA.—There is an oil bearing this name, derived from both the root and leaves of *arnica montana*. That from the root is soluble in two parts of rectified spirit; that from the flowers requires one hundred parts for solution.

Novæ Scotian.—It is commonly, but erroneously, supposed that a gallon of castor oil equals eight pounds in weight. The specific gravity of the oil is about .970; consequently one gallon would weigh, only 7½ pounds.

W. H. L.—FILTRATION.—Acids, and acid substances, which usually destroy a paper filter, may be cleared by filtration through a little asbestos, placed in the neck of a funnel. It will be necessary to cover the asbestos with a perforated diaphragm of stoneware, or a few pieces of glass, in order to prevent it from floating, which will certainly occur if the fluid to be filtered is of great density. Asbestos is only about two and a half times heavier than water, consequently, it will rise to the surface of a liquid whose specific gravity is over 2.6. Common glass, powdered in a mortar will also make a good filtering medium; and ordinary cotton wool placed in the bottom of the funnel with slight pressure, and having been previously wetted, will often answer for acid solutions, when a paper filter is inapplicable.

Apprentice.—We are not in a position, at present, to answer your enquiry; but as soon as the society has taken a definite course in the matter, we shall be happy to do so. In the mean time, use such books as are within reach. See editorial in present issue.

Changes.

L. W. Youmans is commencing in Belleville, with a new stock and stand.

J. S. Parker intends taking charge of the Owen Sound business of Parker & Cattle, and offers their Paris branch for sale.

Henry K. Knowles is commencing a new business, in Toronto, under the management of R. C. Newman.

The business at Arthur, belonging to L. H. Youmans, has been purchased by Dr. E. Allen.

J. L. Margach, Toronto, has taken into partnership W. Anderson and J. P. Buchan. The style of the new firm is Margach, Anderson & Co.

Mr. Killman, formerly of Barrie, is about to commence business in Newmarket.

Trade Report.

The unsettled weather during the past month has tended somewhat to keep back business, but during the past week there has been a decided improvement. A great many of the best buyers have been down, and, on the whole, they have bought largely, especially of sundries and fancy goods.

The spring importations have been coming forward during the whole of the past month, and are pretty nearly all in stock; we would advise all buyers who intend making a personal selection of goods, to come during the coming month, as stocks have never been so good as at present, and will well repay a journey for this purpose.

The changes in our Price List are not very numerous; but in some instances, show a very decided advance. Vanilla beans are very scarce, and are steadily going up; ergot, also, is very firm at higher rates; glycerine is quoted lower than in our last; English oil of lavender is decidedly higher; opium still remains at its high figure, but is not held quite so firmly; bromide of potassium which of late has come into such extensive use is advanced in England, equal to about thirty-five cents per lb. Quinine is still very firm, and at last advices had risen one penny per ounce during the week. Cardamons are almost out of market, and consequently command very high figures.

In dyestuffs the only material change is in Logwood, which both in the shape of wood, and extract, is very much higher. Madder is slightly lower.

Olive oil is quoted very low, Cod and Seal oils are very scarce at present, but in all probability, will be very low as soon as new stock comes in.

Spirits of Turpentine have fallen considerably, and can be bought at a very reasonable price at present.