

Do these things, and you will not only be successful in business, but you will be so with a clear conscience, which is more than gold and rubies.—*T. A. Moseley, in the National Druggist.*

Borax in Pharmacy.

THE ADDITION OF GLYCERIN TO BORAX PREPARATIONS.

The fact that glycerin, when added to aqueous solutions of borax, decomposes the latter with formation of free boric acid is well known.

The frequently asked query: What is the cause of the effervescence in preparing Dobell's solution? finds its explanation in this manner, also the pharmacopœial identity test for glycerin.

The same reaction may take place in other instances, perhaps less frequently, yet being at times of importance at the dispensing counter, occasionally requiring some reflection before unlooked-for phenomena are satisfactorily explained.

Some weeks ago a mixture consisting of aqueous tincture of rhubarb and glycerin was found to explode when dispensed in a well-filled bottle.

When this mixture was prepared in an open vessel, distinct effervescence could be observed on standing.

Tinctura rhei aquosa, a preparation frequently prescribed by German practitioners, contains, besides the active vegetable ingredients, borax and potassium carbonate.

The glycerin decomposes the sodium borate, with liberation of free boric acid, and the latter is again neutralized by the potassium carbonate present with evolution of CO_2 .

The expansion of this gas renders the bottle holding this mixture liable to fracture.

BORAX IN UNGUENTUM AQUÆ ROSÆ.

Several objections have been made against the addition of borax to the cold cream of the new Pharmacopœia.

The action of the borax upon salts of mercury and the alkaloids appears to be the chief objection.

The addition of glycerin to cold cream, as sometimes ordered extemporaneously in prescriptions, will also decompose the borax in the manner mentioned.

Borax appears to possess some saponifying action upon the fatty ingredients, and if glycerin is subsequently added boric acid is liberated, changing the reaction of the ointment from alkaline to acid.

It would be interesting to know whether this would produce an impairment of the preparation as to its medicinal value.

GLYCERIN AND SOME BAY RUM SAMPLES.

The pharmacopœial bay rum formula is not satisfactory to many pharmacists on account of the almost colorless appearance of the product.

In their efforts to cater to the popular taste, they prefer to have the preparation

of a bright yellow, or even yellowish-brown color.

To effect this, some follow the practice of macerating bay leaves or tumeric, or both, in the solution of the oils, while others add solution of potassa to the oils of bay and allspice before dissolving them in alcohol.

Some also dissolve a certain amount of borax in the water before it is added to the alcoholic oil solution.

Still others use the potash solution and make the borax addition besides.

When the last method is employed, the bay rum will possess a handsome yellow color.

But if the preparation, thus prepared, is mixed with glycerin, the effect repeatedly mentioned takes place, namely, the borax is decomposed and the acid liberated.

This effect may readily be observed after the glycerin addition.

The mixture will decolorize, the yellow color almost entirely disappears, and the previously alkaline bay rum will turn distinctly acid to test paper.

Other illustrations may be mentioned, where chemical incompatibility may arise between borax and glycerin, but a little reflection will readily indicate the liability of its occurrence.

In the preparation of toilet washes, in which it is desirable to keep the borax unchanged, this fact must be considered with care.

One point we may, perhaps, call attention to, namely, the chemical incompatibility of borax with fluid extracts and tinctures containing glycerin.

Astringent fluid extracts, such as those of sumach berries, rose, etc., as a rule, contain glycerin, and it is well known that these preparations enter frequently into mouth washes containing borax.—*F. W. Haussmann, in American Journal of Pharmacy.*

The Liquefaction of Hydrogen.

Science has at last triumphed over matter. Hydrogen, which has previously resisted all attempts to change its physical characteristics, now succumbs to the will of the noted scientist, Professor Olszewski, of Cracow. As early as 1883, Professor Olszewski began the experiments in the liquefaction and solidification of gases, which has resulted in the conversion of the last of the constituents of the atmosphere into liquid form. Oxygen, nitrogen, and many other gases, when submitted to low temperatures in tubes by means of liquid ethylene, boiling in vacuo, at a temperature of 218 degrees below zero Fahrenheit, were severally liquefied, but hydrogen refused to become liquid even when submitted to a pressure of 180 atmospheres, and cooled down to 364 degrees below zero, by means of liquid ethylene and liquid air boiling in vacuo. What the critical temperature of the gas was could only be conjectured, although recognized to be below 364 de-

grees below zero. In his subsequent experiments, Professor Olszewski still further lowered the temperature of hydrogen, but it was not until a few days ago that this lightest of all gases passed from the gaseous to the liquid state at the remarkably low temperature of 40.4 degrees below zero, Fahrenheit.

The suit against the Ash Soda Fountain Company, for infringement on the drawer syrup can patents, has ended, and Judge Crosscup, of the United States Circuit Court, has handed down his decree, in which a perpetual injunction is issued restraining and enjoining the defendant from directly or indirectly manufacturing, using, or selling the inventions or improvements claimed in said patents.

Glycerine is said to have a decided power in preventing fermentation in the stomach.

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