It was found that a number of seized samples of stretched whisky, which is ordinarily compounded from equal parts of alcohol, water and genuine whisky, contained in the neighborhood of 10.0 grams per 100 liters and that this was also approximately the tannin content of the few samples of Canadian whisky examined.

The tannin determination was carried out essentially by the Folin and Denis method[1] for the colorimetric estimation of phenols in urine.

One cc of whisky is placed in a 100-cc Nessler jar and made up to the mark with distilled water. One cc of Folin's phenol reagent[2] is then added, followed by 5 cc of saturated solution of Na_2Co_3. After 10 minutes the blue color developed is compared with standards made up at the same time containing 0.0, 0.25, 0.5, 1.0, 2.0 and 5 cc of standard tannin solution, freshly prepared by dissolving 0.1 gram of pure tannic acid in 1 liter of distilled water.

While it is believed that the test described is, with American whiskys, largely if not entirely an estimation of tannin, it would probably include phenols with Scotch whiskys.

THE ESTIMATION OF GADUOL IN TASTELESS EXTRACTS OF COD LIVER OIL.*

BY JOHN C. KRANTZ, JR.

The ever-increasing demand for a medicine possessing the medicinal virtues of cod liver oil, without the disagreeable and nauseating taste and odor of the latter, has made "Tasteless Extracts of Cod Liver Oil" one of the most generally used tonics. As the validity of manufacture of this type of preparation, since the passage of the National Prohibition Act, depends largely upon its gaduol content, the estimation of this active constituent becomes a problem of general interest.

Gaduol, unlike most complex organic bodies, shows a marked variation in its solubilities in alcohol and ether. To illustrate, the general solubility of alkaloids may be cited. Most alkaloids that are soluble in alcohol are found to be just as soluble in ether or chloroform and in a great many cases to be more soluble. However, gaduol, although very soluble in alcohol, is practically insoluble in ether, chloroform, benzene, toluene, etc. The insolubility of the product in these immiscible solvents makes its extraction from a pharmaceutical preparation difficult.

THEORY OF METHOD.

The method used in this laboratory depends upon the immiscibility of alcohol with concentrated saline solutions and the use of alcohol as an immiscible solvent under these conditions. Thus, a sample can be saturated with potassium carbonate and the gaduol extracted with alcohol, in which it readily dissolves.

EXPERIMENTAL.

Transfer 20 cc of the extract to a separator, add 18 Gm. of potassium carbonate and shake until dissolved. Extract the gaduol with two portions (20 cc each) of alcohol. Evaporate the combined alcoholic extractions to dryness on a water-bath, dry the residue to a constant weight at 100° C. and weigh.

---

[1] *J. Biol. Chem.*, 12, 239, 1912.

[2] To 750 cc of distilled water add 100 grams of sodium tungstate, 20 grams of phosphomolybdic acid (or 18 grams of 85 percent molybdenum trioxide) and 50 cc of 85 percent phosphoric acid. Boil for 2 hours under a reflux condenser, cool and dilute to 1 liter. *Jour. Ind. Eng. Chem.*, 13, 422, 1921.

* Read before Baltimore Branch, A. Ph. A., October meeting, 1922.

A 2% gaduol solution containing 15% alcohol was prepared and the following results show the percentages found by the above method:

Determination I—2.030% Determination III—2.14%
Determination II—2.13% Determination IV—2.10%

A popular brand of extract of cod liver oil of unknown gaduol strength was examined and the following results obtained:

Determination I—1.10% Determination II—1.01%

CONCLUSION.

The method described herein is admirably adapted for the rapid gaduol evaluation in this important class of medicines.

SCHOOL OF PHARMACY,
UNIVERSITY OF MARYLAND.

WHY NOT A STANDARD CODE OF REGULATIONS FOR THE SALE OF POISONS?*

BY J. H. BEAL.

The legislator who attempts to draft a poison act usually goes to the dictionary to look for a definition of a poison, where he finds something more or less like the following:

"Any substance that when taken into the system acts in a noxious manner by means not mechanical, tending to cause death or serious injury to the health."—*Standard Dictionary.*

This definition and its variations found in other lexicons reflect the popular notion that poisons and non-poisons fall within entirely separate categories—in other words, that there is a sharp line of distinction between substances that are capable of causing injury or death and those that are not capable of doing so.

Unfortunately, there is no such line of distinction. Practically all of the substances we are acquainted with reach across the line in both directions. There is no substance so deadly that it may not be taken into the system with perfect safety if the dose be made small enough, and, conversely, there is practically no substance so innocuous that it is not capable of causing death or injury to health if the quantity ingested exceeds certain limits.

Many common and wholesome articles of food are either noxious in overdoses, or contain certain constituents that are noxious in overdoses. Even that commonest of common articles, common salt, in excessive doses will produce death as certainly and as painfully as will an overdose of arsenic. The dose is larger—that is all. Medical literature records not a few cases of death resulting from overdoses of common salt taken accidentally, and this article is said to be frequently employed in China as an agent for the commission of suicide.

In the form of vinegar we habitually use quantities of acetic acid that in the concentrated form would be gravely injurious if not deadly, while many other common condimental substances, as mustard, capsicum, cloves, etc., contain or are

* Presented before Section on Education and Legislation, A. Ph. A., Cleveland meeting, 1922. See also p. 953, November JOURNAL A. PH. A., and September JOURNAL, p. 718.