solution of hydrolyzed gelatin was filtered with the assistance of a few grams of Kieselguhr. To this solution was added dropwise, a solution of 11.8 Gm. of cadmium nitrate dissolved in 50 cc. of water, with vigorous mechanical agitation. The resulting colloidal cadmium proteinate was desiccated, whereupon 58 Gm. of dry powder containing 5.32% cadmium was obtained.

Even in 4% solution this colloidal cadmium proteinate had no germicidal activity against *Bacillus typhosus* or *Staphylococcus aureus*. The growth of *Bacillus typhosus* was restrained in dilutions of 1/1000 but not by 1/1500. The growth of *Staphylococcus aureus* was restrained in dilutions of 1/300 but not by 1/400.

We gratefully acknowledge the assistance of our Biological Research Laboratories in determining the germicidal activity of this preparation.

A VITAMIN E UNIT.*

BY A. J. PACINI[1] AND D. R. LINN.

In the case of vitamin E it seems desirable to express the findings in the unit which shall be somewhat comparable to the units adopted by the U. S. Pharmacopœia for vitamins A and D. This is not now the case with numerous reports that have come to our attention concerning an evaluation of the vitamin E potency of a given product, particularly wheat germ oil.

Essentially, it is attempted to discover the amount of product, say wheat germ oil, that must be fed daily throughout the period of gestation to insure a litter of rats from a mother known to have been vitamin E depleted. Not unusually the total number of milligrams of test product required throughout the period, for example, 525, is used to express the vitamin E content of the oil; a 525-milligram oil. Others prefer to indicate the number of milligrams fed daily, a 25-milligram oil.

Unfortunately, these methods of expression are not alone confusing one with the other, but are contrary to the expression of vitamin A and D units in the sense that a "400-milligram oil" contains considerably more vitamin E than a "600-milligram oil," thus giving rise to the awkward interpretation of a more potent oil showing a lower numerical value. Since vitamin E threatens to become as popular in pharmacalogic usefulness as vitamins A and D, it seems to us desirable to adopt a method for reporting vitamin E units that would be constant with that used by the Pharmacopœia in the cases of A and D.

The details of the method for determining vitamin E will be the subject of a separate contribution and are centered largely around the original methods proposed by Evans, Bishop and Burr. When 25 milligrams of cold pressed wheat germ oil are required daily throughout the period of gestation to insure a litter of rats in a mother definitely known to have been vitamin E depleted, we prefer to describe this as a 40-E oil. The figure is arrived at merely by dividing 1000, the number of milligrams in a gram, by 25, the number of milligrams of the test product required daily to perform biologically; and thus, the expression "40 units per gram" is in keeping with the expression "600 units per gram" of vitamin A, or "85 units per gram" of vitamin D. Of course, this method of expression agrees more

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[1] Chicago, Illinois.

closely with the vitamin A than with the vitamin D expression in the Pharmacopœia. In the Pharmacopœia the basis of calculation for vitamin A is the daily dose in milligrams, whereas in the case of vitamin D it is the combined dose fed over a period of eight days.

Any wheat germ oil that has been reported upon by the method heretofore employed by Evans and his co-workers can be re-expressed in terms of the unit herein proposed by the simple arithmetical expedient of converting the value to the number of units per gram.

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COMPARISON OF NESSLER'S REAGENT TEST WITH OTHER TESTS FOR ALDEHYDES IN ETHER.*

BY F. N. VAN DERIPE, E. C. BILLHEIMER AND F. W. NITARDY.[1]

The purpose of this investigation was to determine the comparative value of the U. S. P. Nessler's reagent test, the pyrogallol and fuchsine sulphurous acid reagent test[2] and the ammoniacal silver nitrate reagent test for aldehydes in ether. The comparative sensitivity of these reagents to aldehyde, as well as to other impurities which may be present in ether, such as unsaturated compounds, and also their sensitivity to alcohol in ether, was determined. For this purpose there was prepared a highly purified ether, entirely free from alcohol, aldehydes, peroxides and unsaturated compounds, from which was then made a series of samples of ether containing varying amounts of these ingredients with the exception of peroxides. These specially prepared samples of known composition were then tested for aldehyde content with the three reagents mentioned, at the same time observing the effect of ingredients other than aldehyde upon the sensitivity of the test.

The highly purified ether which was used in this investigation was made as follows:

Removal of Unsaturated Compounds.--Resublimed iodine crystals were added to freshly prepared pure anesthetic ether and the mixture allowed to stand for five days. Potassium hydroxide pellets were then added and the flask rotated until the ether was decolorized. The ether was then poured off the residual layer and distilled, collecting only the middle fraction, which was found to be free from unsaturated compounds.

Removal of Alcohol.—This ether was then shaken repeatedly with separate portions of purified distilled water in order to extract the alcohol. It was then shaken with two separate portions of a dilute alkaline permanganate solution, the ether then separated, and dried over fused calcium chloride.

Removal of Water.--The ether was allowed to stand over sodium amalgam, then poured off and distilled, collecting only the middle fraction.

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* Scientific Section, A. PH. A., Portland meeting, 1936.

[1] Chemical and Pharmaceutical Laboratories, E. R. Squibb & Sons, Brooklyn, N. Y.

[2] Carey, Green and Schoetzow, JOUR. A. PH. A., 22, 1237 (1933).