

A REVIEW OF CURRENT PHARMACEUTICAL LITERATURE.*

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The department of "Therapeutics" in the Journal of the American Medical Association often contains information and comments about advances made in medicine that should be, and are, of interest to pharmacists. In the last few years much has been written about the cardiac tonics, particularly digitalis and, to some extent, strophanthus. Any new facts that are brought out concerning these drugs, and preparations of these drugs, that are backed up by animal experimentation must appeal to the conscientious physician and should, of necessity, be of interest to the wide-awake pharmacist. Much of this work has been done by Hatcher and Eggleston. Concerning some of their more recent work "Therapeutics" has this to say, and, as we are just now passing through a period of "fat-free" digitalis agitation which hits the medical profession every now and then, this comment is peculiarly appropriate:

"Several years ago Hatcher and Eggleston investigated the emetic action of digitalis. Their results showed that the digitalis bodies produce nausea and vomiting through action on the vomiting centre in the medulla. The direct action of therapeutic doses of these drugs on the gastric mucous membrane is unimportant. The fixed oil or fat from digitalis, to which the emetic properties are sometimes attributed, was given to cats in large doses without producing any symptoms whatever. It is clear, therefore, that efforts to avoid nausea by removal of the oil, administration through other channels than the stomach, or any other means than regulation of the dose, must prove unavailing. It might naturally have been expected that the same conclusions would apply to strophanthus preparations, especially as no satisfactory evidence has been presented in support of the claim that the oil present in tincture of strophanthus helps to produce the nausea which sometimes occurs after its use. Hatcher has performed experiments with oil of strophanthus which show that this assumption is justified. He finds that the average therapeutic dose of the tincture of strophanthus contains less than one ten-thousandth part of that required to produce nausea and vomiting in the cat, relative to the weight. While removal of the oil renders the tincture more 'elegant' pharmaceutically, such removal is of no therapeutic importance." (J. A. M. A., Apr. 15, 1916, p. 1199).

THE STANDARDIZATION OF DIGITALIS AND THE POTENCY OF AMERICAN-GROWN DIGITALIS.—A comparison of American-grown digitalis leaves with those obtained from other sources showed that it is possible to grow leaves of a very high quality in this country. This was proved by biological determination. The experimenters worked with an infusion of the leaves and used Hatcher's "cat" method of standardization in preference to the so-called "frog" method. In their opinion, the latter method is less reliable than the former. It will be remembered that the "cat" method is comparatively simple and consists in determining the minimal fatal dose per kilogramme weight of cat, the drug being injected slowly into the femoral vein. They agree with Hatcher that the infusion does not deteriorate as rapidly as commonly believed; they also make the statement that there are differences in activity due to the method of preparation; they also believe that we have in America a digitalis that cannot be surpassed. They also make the statement that "the name of this or that firm does not always insure potency or digitalis effect." Altogether this is a most valuable paper and a distinct contribution to the positive knowledge concerning digitalis that is gradually being added to the literature of this well-known drug. (J. A. M. A., March 18, 1916, by L. G. Rowntree, M.D., and D. I. Macht, M.D.)

DIGITALIS STANDARDIZATION. THE PHYSIOLOGICAL EVALUATION OF FAT-FREE DIGITALIS AND COMMERCIAL DIGITALIN.—In an endeavor to discover the activity of some commercial preparations of fat-free digitalis and German digitalin the following conclusions were drawn: The biological determination was carried out by the one-hour frog method. This method was selected because it is generally conceded that the various factors which must be considered in this method of assay are kept uniform. Absorption from the lymph system of the frog was found to be variable and to depend somewhat on the temperature at which the frogs were kept while assayed. A variation of over 250 percent was discovered in 13 samples of commercial fat-free digitalis and 150 percent in five samples of commercial digitalin (German). There is no difference in the qualitative effects of fat-free digitalis

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on the dog as compared to those produced by the official tincture; and the difference in the absorption between these two different tinctures from the lymph system of the frog is so slight as to be unworthy of notice. Some of the samples of fat-free digitalis showed considerable deterioration after being kept under ordinary conditions for a period of from five to seven months. It is suggested that manufacturers adopt a uniform method of assay and a standard of activity. Only thus can physicians get uniformity, which they have a right to expect when they prescribe commercial preparations of digitalis. In view of the rapid deterioration of commercial preparations of fat-free digitalis it is deemed advisable that such preparations be dated, so that physicians have some means of knowing how old a preparation is they are prescribing for their patients. (Hyg. Lab. Bull. No. 102, by George B. Roth, M.D.)

FEDERAL STANDARDS FOR MINERAL WATERS.—In no other country in the whole world is there such a large sale and consumption of mineral waters as in these United States. Recognizing this fact and the belief that the public has, generally speaking, of taking the purity of these waters for granted, the government has, through the activity of the Public Health Service, adopted the following standards. The authorities believe that these requirements are not too stringent to apply to waters that are imported from abroad.

1. The total number of bacteria developing on standard agar plates, incubated 24 hours at 70° C., shall not exceed 100 per cubic centimetre; provided that the estimate shall be made from not less than two plates, showing such numbers and distribution of colonies as to indicate that the estimate is reliable and accurate.

2. Not more than one out of five 10-ml portions of any sample examined shall show the presence of organisms of the *Bacillus coli* group.

It seems that the Bureau of Chemistry has been giving this matter of the purity of these waters considerable investigation for some years, and the above standards are the result of its investigations. Thus mineral and table waters that are offered for sale in interstate commerce are required to conform to these standards.

MEDICAL, SCIENTIFIC, EDUCATIONAL AND PHILANTHROPIC INSTITUTIONS NOT TO BE AFFECTED BY FIXED PRICE LEGISLATION.—Senator Ashurst, of Arizona, has introduced a bill into the Senate which provides that a grower, producer, manufacturer, or owner of an article having a trade-mark or special brand, who sells it to a dealer or retailer, can designate and prescribe the price at which it shall be resold, the object, of course, being to prevent the cutting of prices. In this bill, however, it is expressly provided that the act shall not apply in cases of sales of such articles to any society or institution established solely for educational, medical, scientific, or philanthropic purposes. (Jour. A. M. A., March 25, 1916, p. 67.)

MAGNESIUM HYPOCHLORITE AS A DISINFECTANT.—The advantages claimed for this chemical over other hypochlorites as a disinfectant and germicide are that it is more powerful as a disinfectant and at the same time less caustic. It is also much cheaper; other things being equal, this is a desideratum not to be ignored. It is prepared for use by dissolving 190 grammes of magnesium sulphate in 2 litres of water and mixing this with 2 litres of water into which 100 grammes of chlorinated lime have been well stirred. The two solutions are first filtered before mixing; the resulting precipitate is allowed to subside and the clear supernatant liquid, preferably filtered, is then ready for use. This can be used freely as a dressing, as it has no untoward action on the healthy tissues. It is asserted that the organism bears the magnesium well—in fact, much better than can be said of either lime or sodium. (Jour. A. M. A., March 25, 1916, from the *Paris Médicale*, Feb. 19, vi, No. 8, p. 197, by C. Mayer.)

THE THERAPEUTIC VALUE OF THE HYPOPHOSPHITES.—In order to be classed as a useful drug it is necessary that a drug be able to accomplish one of three things: (1) It must have either a local or a physiological action; (2) it must show a particular influence on pathological processes, and (3) it must have food value. After a brief review of the literature pertaining to the hypophosphites the writer of this paper adduces evidence, both of a clinical nature and the study of the effect, or lack of effect, of this drug on animals. The conclusions are that the hypophosphites as a source of phosphorus for the body are without value. No evidence is adduced showing that they have any physiologic effect; that they have any influence on pathologic processes; that they have any value as a food. The author tersely adds: "If they are of any use, that use has never been discovered." (Jour. A. M. A., Feb. 12, 1916, p. 488, by W. McKim Marriott, M.D.)