

3. A certain degree of synergism seems to exist between the diphtheria toxin and the digitalis: amounts of the suspension cause death of guinea-pigs poisoned with the diphtheria toxin while controls receiving this amount of the suspension usually recover.

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LAY CONCEPTIONS OF ANTISEPTICS.

In an address before the recent annual meeting of the American Drug Manufacturers' Association Dr. John S. Jamieson, former medical officer of the U. S. Bureau of Chemistry, said in part as follows:

"In order to ascertain, at least to some extent, what the general lay conception of the term antiseptic is, particularly when used in connection with products sold as, for instance, mouth washes, inquiry was made of a number of individuals making up what was considered to be a fairly representative cross section of everyday life; that is to say, ministers, lawyers, clerks, merchants, milliners, salespersons, railroad employees, school teachers, housewives and the like were interrogated. In no instance was a reply received referring in any way to inhibition; the consensus of the opinion elicited was that an antiseptic mouth wash freed the mouth of germs, killed germs or did away with germs. The impression conveyed by the word evidently involved the fuller and less technical significance of actual germicidal effect. Therefore, to the public an antiseptic product of the kind in question means one that is against sepsis, in that it prevents or does away with that condition to as great an extent as possible. In line, therefore, with court decisions that the wording on labels is to be given the meaning ordinarily conveyed by it to those to whom it is addressed, that is, to the lay public, or, colloquially, the man in the street, the Bureau believes that products used as mouth washes, sprays, gargles, douches and the like, which are in brief contact with the tissues and subject to immediate dilution by the secretions, should be designated antiseptic only if, when in the dilution mentioned in the directions, they are germicidal in a brief period of time. If the effect produced by such articles involved inhibition only, the action on microorganisms would be inconsequential, a false feeling of security would be induced, and possibly valuable time would be wasted in using a product which had no positive germicidal effect. As stated, this applies to mouth washes, gargles, douches and similar products. Preparations used as ointments, wet dressings, or applications which remain in contact with the tissues for a protracted period may properly be termed antiseptic if they are capable of preventing any development of bacteria.

INHIBITORY PREPARATIONS.

"It has been argued that use of products such as mouth washes and the like which inhibit, and do not destroy, germs is better for the individual, since a pronounced germicidal action may in some instances affect the cells of the mucous membrane with which the preparation is brought into contact. Under the provisions of the act, however, the Bureau is not concerned with the kind of ingredients used, provided the preparation is properly labeled as regards its germicidal

effect, and also in other respects. It is quite possible, however, to use in such preparations germicides which do not materially affect the tissues. Even were this not the case, from the standpoint of the physician the welfare of the patient, especially if the infection be of serious nature, is better conserved by use of an actual germicide, even at the possible expense of some cell irritation, than by a preparation which produces only temporary inhibition and in the intervals of use does not influence germ multiplication.

"In conclusion, it may be stated that while the Bureau's appropriation is not available for examinations of samples other than those collected by its inspectors as a part of their routine work, it is at all times ready and willing to answer as fully as it can any inquiries made by manufacturers relating to the application of the provisions of the act. On submission of the complete labeling and working formula for a drug product, specific comment and suggestions will be offered, with a view to assisting the manufacturer, as far as possible, in bringing the printed matter of the preparation into harmony with the law. Inquiries of this kind are becoming increasingly frequent and no one is ever refused such help as can consistently be given. The Bureau seeks to encourage contacts of this kind with the industries, feeling that good results will accrue in way of a better understanding of the law and the Bureau's administration of it."

MANY SUBSTANCES TESTED AS REPELLENTS OF BLOWFLIES.

Certain species of blowflies—primarily the screw-worm fly and secondarily the green-bottle fly and the black blowfly—cause losses estimated at \$4,000,000 or more annually because of their attacks on livestock. They are of particular concern to raisers of cattle, sheep and goats on the ranges. When the screw-worm flies are abundant they are strongly attracted to the slightest scratch of blood spot on the skin of an animal. Under favorable conditions they lay eggs in such wounds, and the larvæ hatch and start feeding on the living tissues. If treatment is not administered promptly death of the animal often results.

Ranchmen are using various home remedies, such as axle grease and lamp-black, but probably proprietary "screw-worm killers" of one sort or another are now most prevalently used. These consist largely of crude carbolic acid, which, although it kills the worms with which it comes in contact, is also poisonous to animals. As a result many animals are killed by the treatment.

In view of this situation the United States Department of Agriculture has for some time been engaged in a study to find a material that will kill the larvæ and prevent reinfestation by repelling the flies. In all, about 350 compounds and mixtures have been tested

to determine their repellent or attractant action. The results of this study, as applied to the screw-worm, are reported in Department Bulletin 1472-D, "Chemotropic Tests with the Screw-Worm Fly," just issued and now ready for distribution.

A number of the essential oils are good repellents, among which are Ceylon citronella oil and American pennyroyal oil, commonly used as mosquito repellents. Powdered pyrethrum and derris, both of which are valuable contact insecticides, are effective in repelling screw-worm flies. Of all the materials tested as repellents against the screw-worm fly, however, certain products obtained from the pine are among the best. These include pine oil, crude turpentine, pine tar and pine-tar oil. In view of the cheapness, availability, non-toxicity and adhesiveness of pine-tar oil, the investigators are of the opinion that this is the best material among all of those tested to use upon wounds of domestic animals to protect them against the screw-worm fly.

The data presented in the bulletin, which are largely a result of laboratory investigation, serve as a basis for further tests on living animals. Such tests are now under way. Furthermore, it is felt that these studies are a step in the direction of obtaining a better insight into the fundamental principles underlying responses of insects to chemical substances.