AT LAST, A SAFE BICHLORIDE TABLET!*

BY LOUIS SPENCER LEVY.

Under ordinary circumstances no one who is aware of the great amount of work to be done at a Convention like this should have the audacity to suggest for discussion the subject of this paper.

For several years, more particularly since the press publicity attending the demise of a Georgia banker due to accidental poisoning with mercuric chloride, the problem of preventive measures either in case of accident or attempted suicide by this means has been discussed in lay and scientific circles; but a simple, safe, reliable and practical solution has proved very elusive. In the hope, therefore, that the suggestions I have to offer will meet with the approval of the pharmaceutical profession and of the public, as they have of numerous physicians of note, I venture to risk your displeasure.

There is no need to recount, other than in a brief manner, the reasons why tablets of mercuric chloride have heretofore lent themselves to accident. First, they are small and easily swallowed; second, they have practically no taste; third, they have no definite characteristics of appearance that mark them as dangerous.

It is clear to all of us that any preventive measure must be reliable even under exceptional conditions. Analyzing the reports of a large number of accidental mercuric poisonings, the two facts that I have already pointed out stood out most prominently, viz.: that the victim was not warned either by his sense of taste, nor by any difficulty in swallowing. These are the two very important points to consider. Nature has thrown safeguards around many of our involuntary acts to save us from ourselves, and merely by making certain that these natural means of protection shall be made use of, safety from accident can be assured. One of these safeguards is the sense of taste, and another the reflex action which causes a spasm, or constriction, of the muscles of the pharynx whenever an object not easily swallowed reaches it. The sense of taste is a guide that can be depended upon, if due regard is paid to those effects that are independent of the sense of smell. Many substances cannot be identified by the sense of taste if the sense of smell is excluded by holding the nostrils tightly shut; and this applies even to such highly flavored substances as vanilla bean, orange peel, etc. However, a pungent, biting sensation produced in the taste-buds by such substances as pepper, mustard, etc., is instantly noted, and they invariably produce an impulse of rejection.

In order to overcome the objections heretofore mentioned, I have devised a tablet containing about one percent of pungent oils, or oleoresins, such as capsicum, mustard, etc., and in no instance has any one failed instantly to pause and remove from his mouth a test tablet containing this guard irritant. The question naturally arises as to the effect upon the tissues and mucous membranes of such added ingredients, but repeated tests, under all conditions in which mercuric chloride can be used, have failed to produce a single objection on the part of the patient, or the medical attendant. This can be readily appreciated when it is borne in mind that the strength of the solution with reference to the guard ingredients is less than 1:100,000 in the case of a bichloride solution of 1:4000.

*Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Atlantic City meeting, 1916.

These tablets have been tested, as I have said, under all circumstances and in solutions of all the usual strengths.

I have already referred to the part played by the throat itself in preventing accidental swallowing. Very few persons find much difficulty in swallowing pieces of food of considerable size, but anything of a rod-like shape, approximately 1¼ inches in length, cannot be swallowed without great difficulty, if at all, even with water. I have therefore designed a tablet of this length, about ¼ inch in width and about ⅛ inch in thickness, weighing about 1.6 grammes. One or two attempts to swallow similar tablets of harmless composition will soon convince anyone, not only with regard to the actual swallowing of the tablet, but as to any unwitting attempt to swallow it. No matter in what state—whether half-asleep, semi-inebriated, or suffering from a raging headache—anyone should attempt to swallow one of these tablets, his attention would be immediately arrested, and in an unmistakable way, to the unusual character of the tablet—and that would be sufficient to prevent the accident.

Of course, we all realize that careless people and children cannot be prevented from putting unwonted objects into their mouths, but it is to prevent them from going any further that these tablets will be useful.

Now with regard to suicidal intent, the psychological features of the individuals are those to be borne in mind. Although a person bent on suicide has open to him many avenues of self-destruction, it is nevertheless true that those of a morbid mind, or possessed of an insane impulse, often yield to a suggestion as to the mode of suicide. Those who take bichloride tablets do so with the idea that there will be no discomfort—that long before anyone can interfere the poison will have made death certain. Thanks to the able work of eminent men in the medical profession, there is now more likelihood of saving these poor victims, but most of all, the use of tablets of this design will do much to reduce such suicides.

FIG. 1.—Shape and size of described tablet.

Intelligent observation has shown that if a suicidal impulse is broken, the attempt will seldom be renewed, and surely anyone harboring the idea that mercuric chloride will provide comfortable means of exit from life will promptly discover his error when his tongue is assailed by a burning sensation.

In conclusion, I merely wish to emphasize, that, because of:

First, the unmistakable and objectionable taste, which prevents mistakes but does not interfere in any way with the normal use of these tablets, and,

Second, their peculiar size and shape, producing in the pharynx an involuntary constricting spasm that prevents casual swallowing, the wholly desirable use of mercuric chloride for antiseptic and hygienic purposes will become more general, as there need be no longer any danger or fear of accident.

DISCUSSION.

OTTO RAUBENHEIMER: I believe that Mr. Levy has struck the right shape for the tablet. One of our members, Mr. Apple, devised a coffin-shaped tablet, somewhat similar. Mr. Levy's device depends principally upon the rod-shape. On account of the long, thin shape, the tablet cannot be swallowed without breaking it up. Of course, anyone could break it up and swallow it; but it could not be confused with a headache tablet—which is usually round. The addition of mustard and capsicum causes a sensation in the throat and stomach that would repell its administration.

DAVID STOLZ: It is a peculiar shaped tablet. Has anyone swallowed one of these and has an emetic been given afterwards?

THE AUTHOR: The added ingredients have emetic qualities; but, an emetic cannot be depended on under all circumstances, some persons having idiosyncrasies against emetics.

I do not depend on the mustard or capsicum to cause emesis. The idea is to prevent the tablet from being swallowed. Anyone trying to swallow it by breaking it, will have such a sensation in the stomach as to lead him to seek help. Simply touching the end of the tongue with a tablet indicates its unusual character.

CASWELL A. MAYO: I tried to swallow one of these tablets, and was unable to do so on account of its shape, though I have had to swallow a good many unpleasant doses. I also found that the effect on the tongue caused immediate rejection. It is highly important that some measures be taken to overcome the desire on the part of the Boards of Health to restrict the sale of these tablets, because they are in such general use as an antiseptic. We have succeeded in convincing the President of the Board of Health in the City of New York, that the health of the public would suffer more from restriction of their use than from allowing them to be in general use. The introduction of some such tablet as this would do much to remove the danger from their inadvertent use. We cannot stop people from committing suicide, but we can prevent accidental suicide by some method like this.

FREDERICK T. GORDON: Mr. Levy said that he used oil of capsicum or mustard. I should think that in making a solution, these would be apt to cause irritation.

THE AUTHOR: I explained in the paper that the amount present, when the tablet is dissolved in a quart or two of water, is so infinitesimal as not to be noticeable.

FREDERICK T. GORDON: I think that Mr. Levy has stumbled on something much better than he knows. They have given up the use of bichloride in France, because it kills the tissue, as well as the germs; but by introducing the capsicum, this destructive effect has been overcome.

THE AUTHOR: I did not bring that point out in the paper, but I knew of it, and it will be brought out in another paper, to be read before one of the medical societies. This effect revealed itself very quickly when the tablets were used for irrigating purposes. The patients mentioned that they were more soothing than ordinary bichloride tablets. Experiments are going to be made on the effect of these, as compared with that of the ordinary tablets, on cell growth and granulation.

MERCURY EXPERIMENTS AID THERMOMETER MAKERS.

The United States Bureau of Standards has completed a very careful determination of the freezing point of mercury, using platinum resistance thermometers to measure the temperature. The result of this work gives –38.87° C. (–37.97° F.) for this temperature.

It is interesting to note that as far back as 1862 the English Government, recognizing the importance of an accurate knowledge of this point, appropriated £150 to have it determined. The value then obtained, –38.85° C. (–37.93° F.), is in agreement with that obtained at the Bureau of Standards. However, other determinations made previous to and after this early work cast some doubt on its accuracy.

A knowledge of the freezing point of mercury is of great importance to thermometer makers, as it marks the lower limit to which a mercurial thermometer may be used and furnishes a method for calibrating or pointing the scale below 0° C. (32° F.).—*Commerce Reports.*