Cantharidin in Pharmacy.

BY PROF. F. A. GRAZER, A.P.A.

The use of cantharidin in pharmacy has been very limited, as far as I have been able to determine, although quite a number of methods have been recommended for separating this principle from the flies. Most of these have been used, no doubt, with a view of determining the quality of the flies, their value being estimated by the amount of cantharidin, and as a matter of experiment.

My attention was attracted to the use of cantharidin while making some cantharidal collodion. I noticed how easily this principle could be separated by the method adopted in that process. In the preparation a considerable amount of cantharidin remained undissolved by the collodion, even after agitation for several days.

It occurred to me that it would require but a little extra labor to remove the fatty matter with carbon bisulphide, and obtain the cantharidin in a tolerably pure state, by which the quality of the drug used might be estimated, and at the same time a collodion prepared of a known strength by simply adding the cantharidin to the requisite amount of flexible collodion. A preparation made in this manner yielded satisfactory results.

A short time after this I was called upon to make some vinegar of cantharides according to the British Pharmacopœia. I found the process a tedious one, especially that part of the process requiring percolation, which was exceedingly slow and unsatisfactory. A preparation equally efficacious was readily made by simply dissolving cantharidin in a mixture of glacial acetic and acetic acids corresponding to the menstruum used in the preparation.

While I have not made any further experiments, I might suggest its use in the liniment of cantharides, and the cerate of the extract of cantharides. Referring to the last-named preparation, I have often wondered why the Pharmacopœia is burdened with two cantharidical cerates. The plain cerate of cantharides, if properly made with a good specimen of powdered flies, seldom fails to give satisfaction. The claim for the cerate of the extract is, that it is an elegant and efficient substitute for the ordinary cerate, as the greater portion of the inert matter is removed in the process adopted for its preparation.

The object of this preparation, therefore, is simply to remove the vesicating principle in as pure a state as possible, and to combine it with a suitable base. The process is somewhat cumbersome to the druggist, as it involves percolation, distillation, and evaporation, the final result being the removal of the cantharidin, associated with a considerable amount of extractive. A more simple method would be to add a chloroformic solution of cantharidin to a melted mixture of wax, lard and resin, or the cantharidin may be dissolved by means of heat, in a mixture of rape seed and castor oils, and then added. In doing this it would be necessary to diminish the amount of lard, as the lard would render the cerate to soft.

But is this elegant and efficient substitute an improvement over the ordinary cerate? So far as I can learn such is not the case. If the objection to this preparation be the mechanical admixture of the powdered flies, I hardly think it justifiable, as these small particles of the hard exterior parts of the insect have a tendency to irritate the skin, and thereby facilitate the vesicating action.

I had occasion some time ago to test the relative merit of these two preparations. The cerate of the extract failed to give the satisfaction which the cerate had previously given. That the former preparation contained sufficient cantharidin there could be no doubt, as six months after its preparation I found the entire surface thickly studded with cantharidin crystals.

Cantharadin dissolved in oil has been used in Germany. In the last issue of the Pharmaceutische Rundschau, New York, May, 1889, a process is given for making cantharidal oil, as formerly recommended by E. Dietrich, Helfenberg, Germany. It was made by dissolving three parts of cantharidin in two thousand parts of rape-seed oil. It has been shown by F. Eger that a portion of the cantharidin in the preparation is precipitated after a time, and he recommends the use of castor oil. The following formula is suggested for a permanent preparation: 0.3 grammes of cantharidin is dissolved in 20.0 grammes of castor oil and 40.0 grammes of rape-seed oil by means of heat, after which 140.0 grammes of rape-seed oil is added.

The main objection to the use of cantharidin is its expense. In Merck's index 1 gramme is quoted at two dollars. It can, however, be made more cheaply by the druggist himself.

The separation of cantharidin is not difficult; it is easily accomplished by percolating the powdered flies with chloroform. I have used for this purpose a narrow Whitall-Tatum percolator, in the bottom of which a cork was inserted, containing a glass tube drawn out to a fine point and curved upward. In this manner I was able to prevent the percolation from going on too rapidly. The chloroform was recovered for future use by means of an old-style alembic, connected with an empty bottle, acting as a receiver, and kept cool.

With a water bath placed over an ordinary spirit lamp the distillation can be carried on until the greater portion of the chloroform is recovered. The fat can be removed after evaporating the remaining chloroform by means of carbon bisulphide or petroleum ether. In this manner it may be obtained sufficiently pure for pharmaceutical purposes. The powdered drug as found in this market is generally good, containing about 8 per cent. of moisture, and a fair yield of cantharidin.

Other processes have been recommended, such as treating the flies with alkalies, and subsequently with acid before using chloroform or ether, by which means a larger yield is obtained. Perhaps the best method is that of dialysis, recommended by E. Dietrich. But as far as the commercial article is concerned it is yet too expensive to be used, at least in this country.

I would therefore recommend the druggist to prepare it himself, as I believe that cantharidin could be used in a number of the pharmaceutical preparations now kept in the stores, thereby saving considerable time, besides securing preparations of known strength, which is always an object to be desired.—British and Col. Druggist.

Antiseptic Sponges.

PROF. J. PERRINS.

Take a string of fine new sponges, neither too small nor too large. Commence by beating them with a small hammer, or a piece of wood, in order to knock out the dust and any mineral particles that they may contain. Examine particularly the point where the sponge was attached to the rock; often there are minute grains of sand firmly adherent at this point, and which should be absolutely removed to avoid irritating an already painful wound. It is better to cut this point off with the scissors. Having done this, wash the sponges freely in water, squeeze, and place them in fountain basins, preferably enamelled ones, containing the following solutions:

Hydrochloric acid . .	10 grams.
Water . . .	1 litre.

Allow them to remain six hours in this mixture, then wash freely again in water, and steep them for six hours in the following:

Water	1 litre.
Permanganate of potash .	1 gram.

By treatment with chamleon solution of a beautiful, intense violet hue, they will become more or less rapidly discolored; and after washing freely in water, will retain a brownish shade.

Immerse the sponges next in the following liquid for two hours:

Liquid bisulphate of soda ..	10 grams.
Water	1 litre.
Hydrochloric acid	1 gram.

A slight odor of sulphurous acid gas will be perceived. After a little while the sponges lose their brown color, and assume a beautiful whitish yellow shade.

Wash again freely in water, and introduce them into preserving fluid made as follows, where they should be kept until needed:

Water	1 litre.
Carbolic acid	1 gram.
Alcohol	5 grams.

Dissolve the carbolic acid in the alcohol and mix together in the aqueous solution.

In order to remove the odor of the carbolic acid, which the laity always associates with hospitals, we may use in place of the above solution the following preserving fluid:

Thymol	1 gram.
Alcohol	4 grams.
Water	1 litre.

—Gaz. de Gynec.