

Besides this base, the authors have ascertained the existence of a third, whose characters have, however, not yet been carefully determined.

The authors intended continuing their chemical investigations on these alkaloids, and examining their physiological and therapeutic action. They express their great obligations to the firm of Messrs. Macfarlane & Co., without whose generous aid the material for the investigation could not have been obtained by them.

Lard, and its Preparation for use in Pharmacy.*

BY MR. EDWARD SMITH, TORQUAY.

One of the subjects suggested for investigation by the Pharmaceutical Conference is "The Best Means of Preparing Lard," and this must be my apology for bringing under the notice of the Conference what may be thought a very unimportant, and perhaps uninteresting subject.

The different Pharmacopœias of this country and the Continent have from time to time given very varying instructions with regard to the preparation of lard, some ordering the flare to be first cut up into small pieces, others not to be cut at all, some recommending the flare to be first well washed, others ignoring the washing, and so on, with various and differing directions as to straining, etc.

The Austrian and Prussian Pharmacopœias order the flare to be cut into small pieces, then washed, next gently heated until it becomes white and opaque.

The Paris Codex directs the membrane and red pieces to be removed from the flare, cut into pieces, beaten in a marble mortar, and heated in a water-bath until the whole is melted and clear, then strained, and stirred gently until it becomes white and opaque.

The London Pharmacopœia of 1824 directed hog's fat to be melted over a slow fire, and strained through linen.

The Pharmacopœia, 1836, directed the lard of the shops to be washed.

The Pharmacopœia, 1851, gave no instructions for its preparation, but sapiently suggested that salted lard should not be used.

The British Pharmacopœia ordered the fat to be cut into small pieces, and liquefied in a water-bath at 212° F., strained through fine linen, and again heated in the same way, until it became clear, and entirely free from water.

The last (1867) British Pharmacopœia modifies the process of the P. B. 1864, by directing the membranes to be removed as much as possible, the fat cut into small pieces, and broken up with the hands while a current of water is running through it, then as much water as possible drained away, the fat heated to 212° F., and strained through flannel, the residue being pressed while hot, it is then put into a steampan, heated to a little above 212° F., stirring constantly until it becomes clear, and entirely free from water, finally, strain through flannel.

The immense difficulty, I might almost say impossibility, of purchasing really good lard, capable of being kept a reasonable time without becoming rancid, induced me, some few years ago, to take to making my own lard, and after repeated trials, with more or less

success, I find the following plan gives the best and most satisfactory results.

First cut the flare into pieces about the size of a walnut, allow it then to stand for half an hour covered with water, then work it well up with the hands in five or six successive portions of water, next, having drained off as much water as possible, place the whole in a water-bath, and as soon as melted, strain through fine linen. In the first straining it will be impossible to get rid of all the water, so that after cooling, and pouring away the separated water, it is necessary to remelt in a water-bath, and finally, carefully filter through paper in a warm closet.

Now, I do not know how much my plan may differ from those in ordinary use, but the three essential points to be remarked are:

- 1st. The repeated washings.
- 2d. The re-melting.
- 3d. The filtering.

I am not prepared to say if the washings remove any matter in a state of incipient decomposition, but this I do know, that if the washings be omitted, the lard will not keep good so long a time, as with the washings. With regard to the re-melting, the object of this is to get rid of the whole of the water, or if any of this be retained by the lard, it becomes a very fertile source of rancidity. Sometimes I have noticed a number of most beautifully colored mould patches, some scarlet, or blue, pink, green, and indeed nearly a dozen different tints. I prefer this method of removing the water to the P. B. process of heating to 212° F. until it is expelled, simply because it is most important that the temperature applied should be as low as possible, and as lard melts of 100° F., a few degrees above this is all that is required. There is no difficulty in removing the last traces of water, inasmuch as the fat being specifically lighter than water, floats on the surface, and when filtering, the last dregs, which contain all the water, should be rejected.

The last and most important point is the filtering. Although straining through fine linen or flannel or felt, may be sufficient, when the consumption of the lard is rapid, and not required for any very especial purposes, yet I cannot too strongly insist that if lard be required of first quality for such purposes as ointments, cold cream, pomades, and so on, it is absolutely essential that it should be filtered through paper, or some body that will effectually remove the numerous particles of membrane and tissue, which are always to be found in imperfectly prepared lard, and which are the main and often sole cause of the rancidity of solid animal fats. This membrane or tissue has an unfortunate tendency to change, to become oxidized, and to set up a decomposing action through the entire mass of fat, resulting in the generation of fatty acids and rancidity, the presence of water materially expedites this decomposition, hence the necessity of re-melting to remove the last particles of water.

By following the process above indicated, I have succeeded in preparing lard, which will keep perfectly sweet and good for many months, even when the jar is constantly opened in the regular course of business, and even after the lapse of a year, the lard has been much sweeter than nine-tenths of that to be had from the best makers, at the best prices.

There is here a specimen of the filtered lard, and also a specimen of filtered lard made

from flare in an active state of decomposition, and when in an extremely odorous condition; from which you will see that the process of preparation has nearly eliminated the rancidity, and it is in fact as good as a greater part of the best lards to be met with in commerce.

The germ of success lies in filtration. If we resorted to this much oftener than we usually do, not only as regards lard, but with many ointments and other analogous compounds, we should derive immense satisfaction from the great superiority of the results over mere straining through muslin, flannel or felt.

To strain in these cases is to invite inferiority, to filter is to secure superiority if not perfection.

In conclusion, I may say the cost of filtered lard varies from 10d. to 1s 3d. per pound, according to the time of year, but of course the price may be modified in different localities by local circumstances.

On Syrup of Iodide of Iron.

BY M. CARTEIGHE, F. C. S. *

The simple experiments recorded in this paper have been made with the view of clearing up, if possible, the discrepancies contained in communications on the preparation and preservation of this important and elegant medicine contributed to the 9th Volume, N. S., of the 'Pharmaceutical Journal.' The first, page 260, by W. A. Tilden, B. Sc., after alluding to the now obsolete custom of introducing a coil of iron wire, recommends for its preservation the covering of the syrup with a stratum of oil and storing in the dark. Mr. F. Baden Bengel, page 284, states that he had tried this plan "four or five years ago," but that "it failed to answer its purpose." In what way he does not say. He then mentions as his practice to make a solution of the iodide and add a suitable proportion to simple syrup, as required. Mr. T. B. Groves, page 421, finds that the best method is to add "half a fluid ounce of dilute phosphoric acid to each Pharmacopœia quantity (31 fluid ounces)." I did not hear Mr. Groves's paper read, but I understand that his proposal was considered highly improper. Mr. T. H. Holloway, of Sydenham, page 471, writes that syrup exposed in a window for a few hours daily to the direct light of the sun, keeps well, and that discoloured syrup may be restored to its normal condition by the same method.

In the discussion which followed the reading of the papers by Mr. Tilden and Mr. Groves, there was considerable difference of opinion as to how long the syrup would keep in the dark without becoming discoloured, but most of the speakers concurred in recommending small well-filled bottles and storing in the dark.

Pharmacists had long ago noticed that some discoloured syrups are restored by being heated in bottles in a water-bath for a short time. This observation led me, on the appearance of Mr. Holloway's letter, to try a few experiments based upon it.

Small white bottles, some filled and stoppered, others partly filled and covered with muslin, were exposed to diffused light inside a window, and to direct sunlight out side in a yard. The specimens exposed to diffused

* From the Pharmaceutical Journal, London.

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