

Quantitative Isolation of Alkaloids, A New Method Suitable for Analytical Use.

(C. Kippenberger. Zeits. anal. Chem., Jour. Soc. Chem. Ind.)—The method depends on the solubility of the alkaloid hydriodide periodides in acetone. On adding to this solution alkali, then acid, and sufficient thiosulphate to combine with the free iodine, a solution is obtained from which, after evaporation of the acetone and addition of alkali, the alkaloid can be extracted by chloroform. This process gave excellent results with weighed amounts of pure alkaloids. In the isolation of alkaloids from corpses, etc., they are usually obtained mixed with proteins, amines, amido acids, etc., which interfere with the ordinary alkaloid reactions. The author's method, which has been successfully applied to mixtures like those met with in practice, is as follows: The substance, isolated in any manner, and supposed to be an alkaloid, is dissolved in acidified water; the solution made neutral or feebly alkaline (under these conditions proteins remain in solution), is precipitated with an iodine solution saturated with potassium iodide, after standing the liquid is filtered through an asbestos filter, the precipitate washed with cold water and dissolved in pure acetone. The dark brown solution is made alkaline, and then acid, and mixed with water; it then contains the alkaloid as acid salt. The acetone is driven off by a gentle heat on the water-bath, the liquid decolorized by a few drops of thiosulphate, and after addition of sodium carbonate in excess, the alkaloid is extracted by shaking with chloroform. In the case of morphine and narceine the extraction is different (amyl alcohol or chloroform from an ammoniacal liquid, or chloroform containing alcohol from a sodium carbonate solution). Glucosides do not give a reaction with solution of iodine in potassium iodide. The method for obtaining alkaloids from plant extracts is quite similar, except that after acidifying the acetone solution of the periodide and adding water, it is immediately shaken with petroleum ether of boiling point 30° to 50° C.; this extracts most of the acetone and also impurities possibly present; this extraction is repeated, and the ether washed with a little acidified water. The alkaloid solution is then warmed on the water-bath, thiosulphate added, after cooling, and the extraction with chloroform takes place as before.

Generally, in heating to drive off the solvent before weighing, the alkaloid becomes brown; this is avoided in the presence of alkalis. The use of ammonia to precipitate the base is not advisable, for, though soluble in ether, it is volatile. The author adds ether which has been shaken with aqueous sodium carbonate (very slightly soluble in ether) to the solvent used; thus the browning is prevented, the error introduced is negligible in view of the varying amounts of water

of crystallization contained in the alkaloids.

The method of isolating pure alkaloids by addition of acid to their ethereal solutions is objectionable, generally because this will also precipitate salts of amide bases, and particularly objectionable when ammonia has been used to separate the free alkaloid.

A MORPHINE REACTION.—On addition of potassium iodide solution of iodine to an alkaline hydroxide morphine solution, there is obtained at first a yellow coloration, which, by a very gradual addition of iodine, turns to a grass green, the same coloration is given by bromine, but not chlorine. Apomorphine does not give this reaction, nor do codeine and other alkaloids; it is possibly due to an oxidizing action of iodine.—*Err.*

The Ointments of the B.P.

By E. W. LUCAS.

The directions for the preparation of several of the official ointments not yielding very satisfactory results, I was led during the autumn of last year to commence a few experiments with a view to their improvement. It is not proposed, however, in this short paper to deal with each ointment separately, except in one or two instances.

The ointments may be divided into two classes: (A) Those containing medicaments intended for absorption, such as aconitine; (B) those used as dressings for wounds or sores, of which boric acid ointment may be taken as a type.

Class A requires a basis having a melting point about 95° F., capable of being readily absorbed when rubbed into the skin, and, while having well marked preservative properties, free from any tendency to set up irritation.

Prepared lard containing 3 minims of oil of cloves to each ounce is suggested as fulfilling all the conditions enumerated. This basis, which might be called *adeps odoratus*, is a whiter preparation than the official benzoated lard, blander, and endowed with better keeping properties.

Class B also requires a non-irritant basis, the melting point of which should not be lower than 115° F., so as to avoid the inconvenience caused by the ointment softening and soaking into the bandages, and not higher than 120° F., on account of the difficulty experienced in spreading very hard ointments on lint, etc.

A mixture of solid hydrocarbons completely liquefying within the limits of temperature before mentioned would appear to be the most suitable for the purpose, and such a mixture might be known as *unguentum petrolei* or *unguentum simplex*. Following out this, the ointments might be classified as follows:

CLASS A.

	Per cent.
*Ung. Aconitinae.....	5
" " Atropinae.....	2
" " Belladonnae.....	10

" Chrysarobini.....	5
" " Gallae.....	20
" " " Opio.....	10
" " Iodi.....	3
" " Potassii Iodidi.....	15
" " Staphisagriae.....	33
" " Veratrinae.....	2

* Ung. Aconitinae, Ung. Atropinae, Ung. Veratrinae. These ointments should be made to contain 8 per cent. of oleic acid, in which the alkaloid may be dissolved by aid of gentle heat.

CLASS B.

	Per cent.
Ung. Acidi Borici.....	15
" " Acidi Carbonici.....	5
" " Acidi Salicylici.....	4
" " Cataplasma.....	10
" " Cantharidis.....	15
" " Eucalypti.....	10
" " Glyc. Plumbi Subis.....	10
" " Hydrarg. Ammon.....	10
" " " Iodidi.....	5
" " " Nit. Dil.....	33
" " " Ox. Rubri.....	10
" " " Subchlor.....	10
" " Iodoformi.....	10
" " Plumbi Subacetatis.....	5
" " " Carbonatis.....	10
" " " Iodidi.....	10
" " Sulphuris.....	10
" " " Iodidi.....	5
" " Zinci.....	15
" " Zinci Oleati.....	50

* Ung. Acidi Carbonici.—If an equivalent quantity of thiosulphate of soda, containing 10 per cent. of water is used, there is less tendency to crystallization on keeping. Glycerin would do, but requires a larger quantity for solution of the acid.

The ointments not included in the above list are those of spermaceti, mercury (simple and compound), mercuric nitrate, tar and resin. These may be prepared as follows:

UNGUENTUM CETACEI.

	Parts.
Take of—	
Spermaceti.....	1
Soft White Paraffin.....	4
Melt and stir until cold	

UNGUENTUM HYDRARGYRI.

	Parts.
Take —	
Mercury.....	1
A wondrous Wool Fat.....	1
Stir together until mercury globules are no longer visible to the naked eye.	
NOTE.—As this ointment is largely used forunction, the change would be found advantageous.	

UNGUENTUM HYDRARGYRI NITRATIS.

The directions for this ointment should read as follows:

Dissolve the mercury in the nitric acid without the aid of heat, agitating gently from time to time. Melt the lard in the oil and raise to a temperature of about 380° F. Pour into an earthenware vessel previously made hot, capable of holding ten times the quantity, and when the mixture has fallen to about 350° F. add by degrees the cold mercury solution, stirring briskly with a wooden spatula to promote disengagement of the fumes. Keep stirred until cold. If these directions are closely followed a pale, lemon-colored ointment will result, which only acquires a slight orange tint, even after keeping for several months.

Much controversy has taken place regarding the preparation of this ointment, but I feel emboldened to write with a certain amount of confidence on the matter, as the firm of John Bell & Co. have had a considerable reputation for its manufacture for several generations. In