

EDITORIAL NOTES

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ALKALOID ADSORPTION IN DRUGS AND ITS RÔLE IN PHARMACEUTICAL PRACTICE.

H. Palme, University Stockholm, *Arch. Pharm.*, 256, 223-48, 1918; through *Chemical Abstracts*. In continuation of the investigations of Palme and Winberg several series of experiments were instituted to prove in the most convincing manner the presence of adsorptive properties between alkaloids and other drug constituents, and to determine whether such phenomena are quite general or otherwise. To this end investigation was made of powdered nux vomica, whereby the distribution of alkaloids was studied partly in a system of the powdered drug and dilute hydrochloric acid, partly in a system of the powdered drug, aqueous alkali and chloroform-ether. In addition, the alkaloids of ipecac were extracted with dilute hydrochloric acid, and in the same manner the extraction of the cinchona alkaloids with alcohol was effected. In order finally to prove that those drugs which contain alkaloids are not the only ones capable of adsorbing the latter, powdered licorice was treated with a solution of atropine. As a result of the experiments it appears certain that when an alkaloid-bearing drug is treated with a liquid, in which the alkaloid in question is soluble, a certain amount always remains undissolved, which compared with the weight of drug involved increases with the concentration of the solution. It is further shown that an alkaloid-free drug is capable of attracting the dissolved alkaloidal principle in solution. These phenomena indicate the necessity of giving greater heed to the methods employed in alkaloidal determinations.

A NEW FORM OF CALOMEL.

A new method of preparing calomel in a bulky and therapeutically highly active form has been devised by Duret, and particulars of the new form are given in the *Annales de l'Institut Pasteur*, and reported in the *Chemist and Druggist* of June 7, 1919. In view of the importance attached to the use of calomel in the shape of an ointment and also of hypo-

dermic injections, his process and conclusions are of particular interest. The method is based on the following reactions: Sodium bicarbonate reacts with magnesium chloride to form sodium chloride and magnesium bicarbonate. Hydrochloric acid (liberated by the reduction of mercuric chloride) reacts with the magnesium bicarbonate thus formed to yield, again, magnesium chloride; simultaneously, the mercuric chloride present is reduced to mercurous chloride. The details are as follows: A solution of

Sodium bicarbonate.....	6 grammes
Pure glucose.....	10 grammes
Distilled water.....	80 grammes

is added to a solution of crystalline magnesium chloride, 7.5 grammes in 20 grammes of distilled water. This mixture is then added to the following solution, contained in a flask of 500 Cc. capacity:

Mercuric chloride.....	11.5 grammes
Hydrochloric acid (33.65 per cent).....	10 drops
Distilled water.....	100 grammes

Carbon dioxide is liberated, while mercurous chloride is precipitated in a very finely divided state. To complete the reaction, the flask is heated on a water bath, with constant agitation, until no more gas is evolved. It is then allowed to cool, filtered, and the precipitated mercurous chloride is washed with cold distilled water. This formula yields about 10 grammes of calomel, in a form three times bulkier than the ordinary preparation. The amounts given must be strictly adhered to, as an excess of magnesium bicarbonate would yield magnesium carbonate mixed with the calomel, while an insufficient amount of magnesium bicarbonate would result in leaving unchanged a portion of the mercuric chloride. Tests which were conducted by the author showed that the calomel obtained by this method is ionized in water to a greater extent than the ordinary product (tested with diphenylcarbazine and sodium monosulphide), and for this reason its therapeutic activity is also greater. Experiments showed that this finely divided calomel, in the presence of organic substances, was dissociated into metallic mercury in a state of extremely fine subdivision;

consequently by this method it is possible to employ mercury *in statu nascendi*, thus assuring its rapid absorption. For its application as calomel ointment the author gives the following formula:

Precipitated calomel (obtained by above process).....	10	grammes
Crystalline magnesium chloride.....	10	grammes
Sodium bicarbonate.....	7	grammes
Thymol.....	0.15	gramme
Camphor.....	0.35	gramme
Glycerin of starch.....	15	grammes
Arachis oil.....	15	grammes
Anhydrous lanolin.....	20	grammes
Distilled water.....	25	grammes

The magnesium chloride, sodium bicarbonate, and water are mixed in a mortar, the precipitated calomel added, and then the glycerin of starch. Melt by gentle heat the anhydrous lanolin in 10 grammes of arachis oil, add the thymol and camphor previously dissolved in 5 grammes of arachis oil, and while liquid add the whole to the first mixture, and heat until a homogeneous ointment is obtained.

For the hypodermic injection of calomel the following formula is given:

Mercuric chloride.....	5.75	grammes
Hydrochloric acid (33.65 percent).....	5	drops
Glucose.....	5	grammes
Sodium bicarbonate.....	3	grammes
Crystalline magnesium chloride.....	3.75	grammes
Distilled water.....	20	grammes
Syrup to.....	100	Cc.

Dissolve in a flask of 200 Cc. capacity the mercuric chloride, by warming, in the distilled water to which the hydrochloric acid has been added, then add the glucose. Mix in a porcelain capsule the sodium bicarbonate with about 50 grammes of syrup, add the magnesium chloride and mix. Now add the mixture to the contents of the flask. The capsule is repeatedly rinsed with small amounts of syrup, which are added to the flask. Shake and warm on a water bath until the evolution of gas has almost ceased; allow to cool, and add sufficient syrup to produce 100 Cc. This yields 5 grammes of calomel (1 Cc. = 0.05 gramme of calomel) in extremely fine subdivision, which keeps for a long time in suspension.

To avoid the pain which follows the injection of calomel, and which is due to the libera-

tion of free hydrochloric acid, the following modification is employed:

Mercuric chloride.....	6.775	grammes
Hydrochloric acid (33.65 percent).....	5	drops
Glucose.....	5	grammes
Sodium bicarbonate.....	8.65	grammes
Cryst. magnesium chloride.....	10.5	grammes
Distilled water.....	25	grammes
Syrup to.....	100	Cc.

Of the above 1 Cc. corresponds to 0.05 gramme of calomel.

Charles H. LaWall was awarded the degree of Doctor of Pharmacy by the University of Pittsburgh, June 15. The university celebrated its one hundredth anniversary at this commencement and the honorary degree of Doctor of Pharmacy awarded to Dean LaWall was the first award of its kind since 1914.

The degree of Master of Pharmacy, *Honoris Causa*, was conferred upon Harry Vin Army, William August Puckner and Heber Wilkinson Youngken by the Philadelphia College of Pharmacy, June 4.

A. B. Stevens, for many years dean of the College of Pharmacy, University of Michigan, has retired from active service and will make his home in California. Dr. Henry Kraemer succeeds as dean of the College. Dr. Stevens has been a member of the University faculty for thirty-three years. He was the guest of honor at a dinner on May 16, at the Detroit Athletic Club, given by friends of the retiring dean and professor.

William B. Day, General Secretary of the American Pharmaceutical Association, was presented by the Alumni of the Class 1894, Chicago College of Pharmacy, with a handsome watch and chain on the occasion of the recent Alumni banquet.

Dr. Edsel A. Ruddiman, has been elected Dean of Vanderbilt University School of Pharmacy vice Dr. J. T. McGill, resigned. While the latter has resigned the Deanship he will continue his connection with the School.

Journal de Pharmacie de Belgique is the name adopted for the Belgian Pharmaceutical Journal. The publication consolidates the former pharmaceutical journals of Belgium: The *Journal de Pharmacie d'Anvers*, the *Revue Internationale de Pharmacie*, the *Annales de Lowain*, the *Journal de Pharmacie de Liège*, the *Bulletin Pharmaceutique de Charleroi*, the *Revue Pharmaceutique de Flandres*, and the *Officine*.