

## Report on the Progress of Pharmacy

For the Year 1912

C. LEWIS DIEHL, Reporter.

(Third Installment.)

### *Benzoic Acid: Expeditious and Reliable Method of Determination in Food Products.*

—In his report to the German War Department, Sanitary Division, Staff-Apothecary Biernath recommends the method of A. Jonescu for the detection of benzoic acid in food products as being quite sensitive and expeditious, requiring with the aid of distillation not more than fifteen minutes. The reaction consists in the addition of one drop of 1% ferric chloride solution and 3 drops of a 1%  $H_2O_2$  solution to the distillate, and is available in the presence of 0.001 gm. of benzoic acid in the food under examination. The presence of mineral acids, volatile and fatty and other acids must be excluded. Salicylic acid is completely destroyed and excluded if after the distillation of the material under examination with 0.5 gm. of sulphuric acid and 20 cc. of water, the distillate is treated with alkaline potassium permanganate, then redistilled, and the distillate tested by Jonescu's reaction.—Pharm Ztg., LVII (1912), No. 18, 176.

*Nitric Acid: Difficulty to Obtain a Commercial Product Free from Chlorine.*—The technical production of chlorine-free nitric acid depends on the rectification of the commercial acid and rejecting the first portions of distillate, changing the receiver until the distillate, after dilution with water, fails to produce turbidity with silver nitrate solution. Dr. P. Bohrisch observes that when this simple process is conducted with care, there should be no difficulty for manufacturers to supply chlorine-free nitric acid; yet, he has found it very difficult to obtain nitric acid on the market, even from some of the most renowned manufacturers, that responds to the official (G. P.) requirement for the absence of chlorine. The absolute freedom of nitric

acid from the even traces of chlorine is particularly required when carrying out Sahli's reaction for the detection of chlorine in urine, which is modernly frequently depended on in urine examinations—the reagent consisting of 1/10 N. solution of silver nitrate in the official nitric acid and a certain proportion of solution of ferric sulphate.—Pharm. Ztg., LVII (1912), No. 19, 189.

*Scammony Resin: Applicability of Iodine for Microscopical Examination.*—L. Lutz points out the availability of iodine for the microscopic examination of scammony resin. If a drop of iodine water is added to the powdered resin a syrupy mixture is formed in which the contours of the resin particles become rounded and are only faintly discernible. In inferior sorts this formation of syrup does not occur, and starch if present becomes blued.—Pharm. Ztg., LVIII (1912), No. 23, 232; from Bull. des Scienc. Pharmacology, 1912, No. 2.

*Balsam of Peru: Improved Method of Examination.*—T. Delphin recommends the following improved method for the examination of balsam of Peru: About 2 gm. of the balsam are dissolved in a flask in an equal volume of ether and 20 cc. more of ether are then added. The solution is filtered into a separating funnel and the flask and filter are washed with ether until a few drops of the filtrate leave no residue on evaporation. To the united filtrate and washings 40 cc. of  $\frac{1}{2}$  N.KOH are added and the mixture is decomposed by careful shaking. The lower portion of the liquid in the separator is then run off and the residual ether-solution washed several times by shaking out with portions of 2 cc. of water. On then evaporating the ether-solution, the total cinnamoin is obtained in a pure condition and in reliably qualitative proportions. The neutralized re-

determination is then heated on a water bath sidual liquid remaining after the cinnaein to drive off any alcohol, transferred to a separator with the rinsings of a little water, and shaken out with ether twice. It is then diluted with water to 25 cc. and a few drops of calcium chloride solution are added. If the balsam is pure, only faint opalescence is produced, but if it contains fixed oil this is revealed by the copious precipitate formed.—Pharm. Ztg., LVII (1912), No. 20, 198; from Svensk. Farm. Tidskrift., No. 3, 1912.

*Alkaloids: Microchemical Identification.*—Comprehensive investigation made by Dr. A. Grutterink convince him that many of the natural as well as synthetic alkaloids may be identified with accuracy, rapidity and reliability by microchemical methods, depending on the formation of characteristic crystallizations with certain organic acids. The author mentions an extensive series of acids which he has found exceedingly useful, and believes that further study will determine other organic acids that will prove capable of forming characteristic crystalline compounds. Furthermore, the author has shown that potassium permanganate also supplies a valuable reagent for microchemical determinations, serving particularly well for the identification of hydrastine, tropacocaine, and cotarnine.—Pharm. Ztg., LVII (1912), No. 21, 210; from Ztschr. f. Analyt. Chem., 1912, 175-238.

*Quinine: Detection in the Presence of Pyramidon.*—C. Mannich and L. Schwedes, of The Pharmaceutical Institute, University of Goettingen, found that the thalleioquin reaction will develop a red instead of a green color, even in the presence of a very small quantity of pyramidon. In order to obtain a normal reaction the pyramidon must be removed, which can easily be done owing to its great solubility in water. The therapeutic reaction is also retarded in the presence of pyramidon, in which case more iodine solution must be used.—Apoth. Ztg., 1912, No. 37, 343.

O. R.

*Milk: Test of Freshness.*—The reagent is prepared by diluting 0.1 cc. of a saturated alcoholic solution of methylene blue with 70 cc. of distilled water. Of this solution 1 cc. is mixed with 50 cc. of milk, 30 cc. of alcohol are added, and the mixture is kept at about 37° C. and exposed to light. If the milk is

not fresh the color will be discharged within 30 minutes.—Sc. Am., 1912, No. 24, 531.

O. R.

*Oil of Mosla: Hydrocarbon Constituent.*—Y. Murayama and Y. Nara several years ago determined the presence of carvacrol and p-cymol in the oil of *Mosla Japonica* Maxim., and have now isolated d-pinene as another constituent.—J. Ph. Soc., 1912, No. 363, 457.

*Urine: Quantitative Determination of Indican.*—Dr. O. Sammet of the Technical High School at Zürich, explains the formation of indican or potassium indoxysulphate, which is contained in healthy urine from 0.006 to 0.02 percent, and in pathogenic urine up to 0.3 percent. He reviews the different methods of determining indican quantitatively, according to Obermeyer-Wang, Bouma, Strauss and especially according to Folin. The latter, which is extensively used in the United States, is a colorimetric method in which the color of the indigo-chloroform extract is compared with the one of Fehling's Volumetric Solution. Sammet enumerates the advantages and disadvantages of Folin's method and reaches the conclusion that for clinical purposes it is sufficiently accurate. For particulars the original article should be consulted.—Ph. Zhalle, 1912, No. 22, 585-589.

O. R.

*Manna-Fern (Lecanora esculenta).*—The "biblical" Manna.—In an article contributed by Ch. Rolland, he says that the "Manna-fern"—the "Manna of biblical history"—is used in Persia not only as a nutrient but also as an effective galactagogue, under the name of "Chirzadt," in daily doses of 150-200 gm., by women who are weakened by frequent childbirth or by malnutrition. This fern rapidly develops after heavy rains from dry structural condition to wart-shaped, light, white, internally mealy formations, which are consumed by man and animals as a welcome food. This development is so rapid, that the assumption of the wandering Israelite that the "Manna has fallen from Heaven" is easily explained. The nutrient value of this fern (*Lecanora esculenta*) is apparently due to a content of 20 to 25 per cent of lichenin. It is stated in Kerner von Marilaun's "Pflanzenleben" that the fern is distributed over an enormous territory in Asia, extending its area to southeastern Europe and northern Africa. It forms at first thick,

furrowed, warty incrustations upon rocks, preferably on small lime-stones, has superficially the color of a mixture of grey and ochre-yellow, the fracture showing a pure white resembling the interior of a crushed grain of wheat. By age the crusts become fissured, become detached from the rocks, and are carried off by wind and rain in the form of conglobate or warty aggregations of about the size of a filbert. When these find lodgement eventually, they are rejuvenated by rains and renew their growth. During years of famine the Manna-fern is a welcome substitute for grain and like this is consumed, after grinding, in form of bread.—Pharm. Ztg., LVII (1912), No. 23, 232; from Bull. Commerce, 1912, No. 1.

*Iron: Protection from Rust.*—Prof. H. J. Lohman's patented method to permanently protect ferric articles from corrosion makes it possible to apply to the surface of steel or iron a coating of any non-corrodible metal of the lead group or a combination of these metals. The thoroughly cleansed articles are immersed from one-half to two minutes in the so-called Lohmann bath containing the chemicals. During this period the pores of the metal are freed from oxygen and the amalgamating agent is deposited over the surface so that when it is dipped into the molten metal the pores are entirely filled and an integral union or chemical weld is made between the treated metal and the non-corrodible coating.—Sc. Am., 1912, No. 24, 554-555. O. R.

*Oil of Lavender: Phthalic Acid Ester an Adulterant.*—In 1908 T. Delphin called attention to cocos-ester as an adulterant for oil of lavender. He has now determined a new adulterant in lavender oil devised from southern France, which proved to be an ester of phthalic acid. This acid is now prepared and used industrially in the manufacture of colors and on account of its cheapness and the general character of its esters lends itself economically as an adulterant of volatile oils. Although the acid was positively identified as phthalic acid among the products of saponification of the lavender oil by its molecular weight, chemical reactions and constants, the small quantity of material prevented the

identification of its ester-component. The author, however, conjectures that the adulterant is probably the ethyl-ester of phthalic acid, the characters and constants of which, and particularly its faintly odorous properties, appear to adapt it to its fraudulent use.—Pharm. Ztg., LVII (1912), No. 27, 272; from Scensk. Farm. Tidskrift., 1912, No. 5.

*Rhubarb: Geographical Distribution, Cultivation, etc., with Particular Consideration of the Plant Yielding the Official Drug.*—Dr. C. Hosseus has published the results of a comprehensive study of the geographical distribution of rhubarb plants, touching first upon the historical facts regarding the introduction of the drug, and confirming, on the basis of his further investigations, his previously expressed opinion (see "Report" 1911), that only *Rheum palmatum*, L., can be regarded as being the parent plant of the official drug. Furthermore, he discusses the methods of its cultivation and preparation as described in the literature, and advances the opinion that the cultivation of the official drug in the calcareous soil of some portions of Germany and Austria promises to become very successful. Quoting from the studies of Maximowis and others, he says:

"The rules for the cultivation of rhubarb (*Rheum palmatum*, L.) are the following: A light, loose, black humus. Setting out the plants in such spaces that they may develop completely (about eight feet apart, so that the leaves may properly spread out). Providing shade by means of trees; sprinkling with regularity, (because of the moist climate prevailing in Kanzu, where the drug is most successfully cultivated), and selecting situations exposed to the south. Furthermore, inasmuch as the content of medicinally active substances in rhubarb goes hand in hand with its content of crystalline calcium oxalate, it is considered necessary for the proper development of the drug that the water-supply should consist of hard water containing an abundance of lime. Indeed, it seems probable that failure to provide such a supply has hitherto been responsible for the inferiority of rhubarb cultivated in Europe.—Pharm. Ztg., LVII (1912), No. 23, 232; from Oesterr. Bot. Ztschr., 1911, No. 12, and 1912, No. 1.