DIGEST OF CRITICISMS

ON THE

UNITED STATES PHARMACOPŒIA

SEVENTH DECENNIAL REVISION (1890).

General Remarks.

1. *Criticisms.* A series of criticisms on the general features of a pharmacopœia, by Oldberg. (Bull. Ph. 96, 198 & 246).

2. *Pharmacopœial Requirements.* Lloyd thinks that several of the rather exacting descriptions and requirements should be qualified, and a scale of reasonable variations be affixed, else they might work hardship. He divides the substances and preparations into three classes:

I. Preparations which begin to change almost immediately, and continue to alter.

II. Preparations in which the qualities demanded are such as to render their production impractical or unnecessarily expensive.

III. Substances for which the demands of commerce, necessities of manufacture or of custom have established qualities different from the standard of the U. S. P. (A. J. Ph. 96, 297).

3. *Alkalimetry.* Reinbach proposes to start from sodium borate instead of sodium carbonate and to use $\frac{N}{10}$ solutions. (Ph. Centrlh. 93, 201. Ph. Rundsch., N. Y., 93, 111. Proc. 94, 997).

4. *Alkalies.* Reagent. Dissolve equal parts of tannin and iodine separately in absolute alcohol, and mix. This reagent gives a transient rose color to alkaline solutions, and is sensitive to 1 potassium carbonate in 1,000,000 water. Schweissinger (Ph. Era 92, 143. Proc. 93, 739, & 94, 999).

5. *Alkaloids.* Prescott points out that the liability of alkaloids to split off acids, of which they really are the ethereal salts, or split off other alkaloids of which they are the true ethers, should always be remembered in all manufacturing works in which alkaloids are involved. (Proc. 95, 211).

Schaer calls attention to the fact, that the color reactions of alkaloids, which are so much relied upon, are in comparatively few cases peculiar to the pure alkaloids, but in some cases are due to the

presence of hitherto unsuspected foreign substances or contaminations, and in many cases are merely group reactions.

He was led to these remarks by studying the behavior of acetanilid toward reagents (with chromated sulphuric acid strychnine-like reaction; with sulpho-nitric acid morphine-like reactions, etc.) (Arch. Ph. 94, 249. Proc. 95, 665).

Localization. Braemer. (Compt. Rend. cxvii., 753. Ph. J. & Tr. 94, Febr. 623. Proc. 94, 1096), and Clautriau (Ph. J. & Tr. 94, Nov. 355. Proc. 95, 980).

Melting point. Francis thinks that the difference in the melting points as given by different chemists is largely due to the fact that decomposition sets in before the melting temperature is reached, and also due to the longer or shorter time before fusion takes place. (Bull. Ph. 93, 541).

Volumetric estimation. Barthe finds that the following alkaloids are unaffected by phenolphtalein: Aconitine, brucine, cinchonine, cinchonidine, cocaine, codeine, duboisine, morphine, pilocarpine, quinidine, quinine, sparteine, strychnine, veratrine. He proposes to titrate them with $\frac{N}{10}$ sulphuric acid. (Ch. News 92, 223. A. J. Ph. 92, 368. Proc. 93, 817).

Indicators. Study of the most reliable. Kebler (A. J. Ph. 95, 499). And Comm. on Indicators, A. Ph. A. (Proc. 95, 185).

Furfurol test. Mix 5 drops of furfurol with 10 Cc. sulphuric acid, and add to 2 or 3 drops of this reagent a minute quantity of the alkaloid, stirring with a glass rod. Wender (Ch. Ztg. 93, 950. Proc. 94, 1094).

Ammonium sulpho-molybdate test. Loof (Ph. Post. 95, 435).

Behavior to a solution of sodium vanadate, acidulated with acetic acid. Jawarowski (Ph. Zts. Russ. 96, 326).

Behavior on evaporating with nitric acid, and subjecting the residue to the action of certain chemicals, chiefly ammonia and potassium cyanide. Formanek (Ph. Post. 95, 179. Proc. 95, 978).

Behavior to Valser's reagent. Tanret (J. Ph. & Ch. 93, 433, 490, & 94, 104. Proc. 94, 1092).

6. *Alligation in Pharmacy.* Its limitations. Reed (W. Dr. 94, 363. Proc. 94, 279).

7. *Ammonium Molybdate Test Solution.* Gigli recommends to keep the solution of ammonium molybdate separate from the dilute nitric acid (1, 185), and mix them when wanted. (Boll. Farm. Ch. 92, 235. A. J. Ph. 92, 572. Proc. 93, 739).

8. *Analysis.* Use of carbon disulphide as a means of separating small quantities of precipitates (sulphides) from aqueous suspension. Musset (Ph. Centrlh. 93, 737. Ph. Rdsch., N. Y., 94, 40. Proc. 94, 1021).

9. *Assay of Drugs.* (Of extracts, see "Extracta" and "Extracta Fluida.") Patch points out that results will vary according to whether the assay be made from samples selected from the whole drug, or from the whole batch powdered, and also according to the fineness of the powder. (Proc. 93, 88).

Comparison. Coblentz concludes that the gravimetric methods of Beckurts, Dunstan and Lyons, will give widely varying results due to unavoidable small deviations in the manipulation, whereby smaller or larger amounts of fat and extractive are brought into the final alkaloidal residue, which easily can be verified by comparing with the result of titration. He does not at present recommend titration, because its successful application requires more special training than the average pharmacist at present possesses. He recommends Lloyd's process as easily executed, and giving tolerably accordant results compared with titration. (Ph. Rdsch. 93, 160).

Chloroformic emulsions. Gunn breaks them up by filtering under pressure. This will admit of a thorough shaking, regardless of the formation of emulsion. It applies also to emulsions due to the presence of gummy or pectic matter. (Ch. & Dr. 94, Oct. 552. Proc. 95, 534).

Mayer's solution is unsatisfactory because in the hands of different experimenters it gives widely varying results. Hallberg (Proc. 94, 199).

By electrolysis. Beal (Am. Dr. 94, 137. Proc. 94, 555).

Titration. Caspari and Dohme recommend to assay alkaloidal drugs by titration with volumetric acids, contending—1) That it is the most reliable and trustworthy method of assaying known at present. 2) Gravimetric methods as heretofore used, give results in many cases very wide of the truth, and hence unreliable. 3) They admit, however, that some of the methods (Lyons, Lloyd, Beckurts, Thompson) are better adapted for some drugs than the other methods. (A. J. Ph. 93, 477. Proc. 93, 118).——See also Kebler on the same subject. (Am. Dr. 94, Sept. 178. Proc. 94, 193).—— These assertions are controverted by Farr & Wright (Ph. J. & Tr. 94, Aug. 126. Proc. 95, 622).

Keller extracts with ammoniated ether or ether-chloroform, shakes the separated ethereal liquid with acidulated water, separates the water and treats it with ammoniated ether or ether-chloroform (whichever is most suitable), and evaporates the ethereal liquid to dryness. (Schw. Woch. 94 . . . A. J. Ph. 94, 42. Proc. 94, 400, & 95, 536).——Beckurts finds that Keller's method gives good results except with hyoscyamus and conium. (Ph. Centrlh. 94, 566. Proc. 95, 535).

Schwickerath extracts with a dilute Prollius' liquid. An aliquot part of the filtrate is shaken with acidulated water, the alcohol and ether allowed to evaporate, and the aqueous liquid filtered into a "perforator," where it is washed with ether, and then "perforated" with ammoniated ether. Evaporate to dryness and titrate. He modifies the Prollius' liquid according to the drug by replacing the ether with a mixture of benzin and chloroform, which, besides being cheaper, has the advantage of not taking up water or glycerin, hence the drying will be finished in a few minutes. For other drugs he replaces the ether with benzin and the alcohol with water. (Ph. Rdsch., N. Y., 93, 282 & 94, 57 & 136. Dr. Bull. 93, 534, & 94, 246. Proc. 94, 533).

Van Ledden-Hulsebosch uses what he terms the "perforator" method, and gives the following advantages: 1) Ether is used for extraction. 2) The acidified solution can by preliminary treatment with ether be freed from impurities soluble in that liquid. 3) The alkaloids are completely extracted after being set free from their combinations with acids by means of alkalies. 4) Cinchona and strychnos alkaloids can be weighed in the pure state as such. 5) The possibilities of decomposition are reduced to a minimum. 6) The same apparatus can be used for other liquids (Ph. Weekbl. 93 . . . Am. Dr. 93, Mch. 180).——See also Liljenstroem (Ph. Ztg. 94, 56).——Dieterich finds that this method is neither expeditious nor very accurate; nevertheless he admits that it is worth trying to improve it. (Helf. Ann. 92 . . . .)

Vitali estimates certain metals and alkaloids by precipitating with hydrogen sulphide and titrating the liberated acid (Orosi. 93 . . . W. Dr. 94, 14).

10. *Bettendorf's Test.*. Hirsch says that the name should be spelled with one "f." (Ph. Rdsch. 93, 256.)

Tin-foil. It should be borne in mind that the presence of tin-foil is inadmissible in testing preparations of antimony and bismuth for arsenic, because metallic tin precipitates antimony and bismuth as well as arsenic. Curtman (A. J. Ph. 94, 389. Proc. 95, 935). ——Also Umney (Ph. J. & Tr. 93, Nov. 439. Proc. 94, 1012).

12. *Balsams and Resins.* Solubilities. Dieterich (Helf. Ann. 93, 30. Zeits. Anal. Ch. 93, 629. Proc. 94, 557).

13. *Diphenylamine* (U. S. P. 473) is to be dissolved in dilute sulphuric acid ; Nagelvoort states that the official dilute acid is not strong enough. (Apoth. 95, Nov. 54).

14. A *Dose* table is desired by many.

15. *Drops.* A table of drops, similar to one found in Remington's Pharmacy and in several European Pharmacopœias, is suggested.

16. *Drugs.* Moisture in air-dry drugs has been determined by Lieurance (Proc. 93, 480).

17. *Fats.* Weiss finds that the "critical" temperature of the solution in a mixture of alcohol and ether is sufficiently distinct to distinguish between the different fats. Dissolve at a higher temperature, and allow to cool. At a certain definite temperature (varying with the nature of the fat) the previously clear liquid becomes turbid (Ph. Ztg. 96, 268).

18. *Filtering Paper.* Salzer points out that some filtering papers contain starch, which will interfere with their use in special cases (Ch. Ztg. xvi. 421. Proc. 94, 490).——Andree has, besides starch, found quite frequently chlorine (Ap. Ztg. 94, 222 Am. Dr. 94, 45. Proc. 94, 490).

Gray filtering paper should never be employed, because it contains no inconsiderable amount of inorganic impurities. Lardier (Rep. Ph. 94. . . . Proc. 94, 490).

19. *Funnel.* Landis recommends a ground glass funnel for analytical work. The filter adheres so tightly that the upper edge can be washed without danger of loss (J. Am. Ch. Soc. xv. 480. Proc. 94, 489).

20. *Glass.* Action of acids on glass. Foerster (Berichte 93, 2915. Proc. 94, 497).

21. *Guaiacum Tincture* is highly recommended by Schaer as a reagent (Ph. Centrlh. 94, 565 & 599. Proc. 95, 921).

22. *Hair.* Microscopical examination of hairs on vegetable drugs. Ruddiman (Tenn. Proc. 94. . . . Proc. 94, 692).

23. *Hydrogen.* The addition of a few drops of a solution of either cobalt or nickel nitrate to the acid and zinc, accelerates enormously the evolution of the gas. Ball (Ph. J. & Tr. 93, Oct. 342. Proc. 94, 1026).

For Gutzeit's test Nagelvoort finds it advantageous to heat the dilute sulphuric acid to about 60° C. before adding it gradually to the zinc. (Ph. Rdsch. N. Y. 94, 109).

24. *Hydrogen Sulphide.* As a substitute Schiff and Tarugi propose ammonium thioacetate. (Orosi. 94. . . . Ph. Rdsch. N. Y. 95, 66. Proc. 95, 920.)——Objections will be found in W. Dr. 95, 284, (from Ch. News).

Test. Kral recommends the use of paper, moistened with solution of sodium nitroprusside to which a few drops of ammonia have been added. Purple color. (Oest. Zts. Ph. 96, 206. Ph. Rev. 96, 88).

25. *Indicators.* Iodeosin. Partheyl recommends an ethereal solution (2 Mgm. in a litre of ether). This is sufficiently sensitive to allow titration with $\frac{N}{1000}$ alkali. It will not do, however, for quinine (Ap. Ztg. 92, 435. A. J. Ph. 92, 522. Proc. 93, 403).

Litmus. (Tincture.) Exhaust litmus with hot distilled water,

filter, saturate with acetic acid, and evaporate to extract consistence. By treating this extract with alcohol, erythrolitmin and acetic acid will be taken up. Filter off, wash with alcohol, and dissolve residue in hot distilled water, and filter. (Boll. Ch. Farm. 93, 298. A. J. Ph. 93, 500. Proc. 94, 999).

Extract 100 Gm. litmus with warm distilled water, evaporate filtrate to 200 Cc., acidulate with 20 to 25 p. c. hydrochloric acid, and dialyse through parchment paper until all HCl is removed. Precipitate with alcohol, and dry. Luettke (Ap. Ztg. 91, 643. Proc. 93, 743).

Exhaust litmus with distilled water, evaporate to extract consistence, and macerate with alcohol, acidulated with HCl. Wash the precipitate with acidulated water, and dissolve in water containing a few drops of ammonia, add 10 p. c. of alcohol. Schaeffer (Ap. Ztg. 94, 839. Merck Rep. 95, 26. Proc. 95, 625).

Testing of the coloring power of litmus. Triturate 5 Gm. litmus with 80 Cc. of water, digest for 2 hours at 50°C., add sufficient water to 100 Cc., allow to settle, and filter. 100 Cc. of water tinted with 0.05 Cc. of this solution (0.0025 Gm. litmus) must appear distinctly tinted when looked at from above through a layer of 20 Cc. Dieterich (Ph. Rdsch. Prag. 94, 779).

Dieterich gives a table showing the limits of sensitiveness of the different test papers, manufactured by him, to HCl and KOH. He also calls attention to the fact that different batches of litmus tincture and litmus paper show varying degrees of sensitiveness. The same holds good for turmeric paper. (Ph. Post, 95, 3.)

Saltzer explains the apparent alkalinity of alcohol (which imparts a blue tint to a tincture of litmus that has been rendered as neutral as possible, and then has a wine-red color) by stating that the wine-red color is due to the presence of carbonic acid gas dissolved in the water, and dispelled on addition of alcohol. (One drop of such a solution to 2 or 3 Cc. of alcohol shows this plainly.) He refers to the familiar fact of alcohol dispelling air from water. (Ap. Ztg. 95, 48.)

Study, as applied to alkaloids. Kebler (A. J. Ph. 95, 499. Proc. 95, 185).

26. *Melting Point.* The Pharmacopœia should give specific directions for properly taking the melting point, since there will be a difference according to whether the temperature has been raised rapidly or gradually. Oldberg (Apoth. 95, Nov. 95).——Nagelvoort proposes that the melting point be taken in a dry capillary tube placed inside of an empty, strong test-tube immersed in sulphuric acid, paraffin, glycerin or water, according to the substance to be examined. The capillary tube will then always be in an air-bath.

The respective substance should be dried previously over sulphuric acid, or at 100°C., as the case may be. (Apoth. 95, July 1.)

27. *Nomenclature*, General. Biltz pleads for scientific accuracy tempered with common sense. The names should be:—1) As short as possible. 2) Not changing with every new theory. 3) Comprehensible. 4) Well-known and familiar, through usage. (A. J. Ph. 94, 26.)

Chemical. The termination "ol" should be limited to phenols and alcohols, but should not be used for aromatic hydrocarbons. (For instance, benzol and toluol should be "benzene" and "toluene".) The terms "hydrochlorate" and "hydrobromate" should be changed to "hydrochloride" and "hydrobromide." A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240.)——Beringer contends that names as "sodic chloride" and "potassic nitrate," etc., are more accurate than "sodium chloride" and "potassium nitrate," etc. (A. J. Ph. 93, 472).——Rice admits the general correctness of the proposition to invert the chemical terms at present in use, but shows that the adoption of this rule would lead to great inconvenience, and respecting compound salts this rule could not be consistently applied, being impracticable. (Circ. 166, p. 1007, 1011.)

The question of the nomenclature of salts of organic bases—morphine hydrochlorate *vs.* hydrochloride, etc.—has been much agitated, and there are strong reasons in favor of both methods. The present Committee believed that, if a change had to be made, the time for it had not come when the present Pharmacopœia was issued.

Botanical. Beringer queries, whether the adoption of the rules of the Botanic Club of the A. A. A. S., is not premature, in view of the unsettled state of botanical nomenclature. (A. J. Ph. 93, 513, and 95, 606.)

28. *Oxygen*. Preparation. On adding 4 Gm. of manganese dioxide to 50 Cc. of a 10 p. c. solution of hydrogen dioxide, one liter of oxygen will be obtained. Dott (Ph. J. & Tr. 93, Febr. 702. Merck, Report, 93, 40).

29. *Percolation*. Edel recommends intermittent percolation (Fairthorne's original idea, see Proc. 82, 115). (W. Dr. 93, 218. Proc. 94, 501.)——Ph. Helv continues the percolation of alkaloidal drugs until 10 Cc. of the percolate, to which 3 drops of diluted HCl has been added, evaporated to dryness, and the residue dissolved in water and filtered, is no longer rendered turbid by Mayer's reagent. (Ph. Rdsch. N. Y. 94, 84).——McPherson proposes to place the sponge or other filtering medium in a separate apparatus, connected with the percolator by an India rubber tube furnished with a pinchcock. In

case the sponge, etc., becomes clogged, it can be taken out and cleansed. (P. J. & Tr. 94, Mch. 783).——Coblentz recommends glass-wool instead of cotton for plugging, because it does not lose its spongy condition, nor ball together on being wetted. (Handbk. Pharm. 195.)——Vin Arny proposes to reduce the unavoidable loss of alcohol by the use of a closed percolator on the principle of Mohr's ether percolator. (Bull. Ph. 93, 100.)

30. *Repercolation.* Cripps thinks that repercolation might advantageously be employed for some drugs. He proposes two methods—1) Reserve a portion from each of the four percolators. 2) Reserve only from the first percolator, carrying the whole of the percolate through the three last percolators. (Ph. J. & Tr. 95, June, 1169. Merck Report, 95, 289. Proc. 95, 508.)

31. *Powders.* (Prel. Not., p. xl). "Not more than ¼ should pass through a sieve having 10 meshes more to the linear inch." This would necessitate two additional sieves, between Nos. 20 and 40, and Nos. 60 and 80. After "ten meshes to the linear inch" (p. xl), should be added: "4 meshes to the centimeter." (Ph. Ztg. 93, 524.)

32. *Purity.* Altschul recommends to determine the purity of chemicals by their "critical" temperature, contending that physical reactions are more sensitive than chemical reactions. (Ber. Phys. Ges. 94, 252. Ph. Rdsch., N. Y., 95, 41).——Squire states that the purity required should be as high as is compatible with first-class products made by the manufacturing chemist. (Ch. & Dr. 95, Mch. 386.)

33. *Reactions and Reagents.* Importance of moisture in chemical reactions. Baker (Ph. Ztg. 93, 739. Ph. Rdsch., N. Y., 94, 20).

Under "Arsenic Test, Bettendorff's" (page 466), after the words "together with a small piece of pure tin-foil," insert: "(except when testing preparations of antimony or bismuth)."

Under Mercurous Nitrate Test-Solution (page 476) read "and dissolve them in 10 Cc. of water."

34. *Refractometer.* Its application. Edwards (Proc. 93, 139, & 94, 295).

Abbe's universal refractometer is not only for liquids, but also for solids. (Bull. Ph. 92, 325. Proc. 93, 936.)

35. *Rotatory Power.* Influence of temperature. LeBel (Compt. Rend. cxviii. 916. Proc. 94, 494).

36. *Sodium Light.* Inexpensive wick. Edwards (Proc. 94, 296).

37. *Solutions.* Detrimental action of colloidal bodies on weak solutions. Beadle & Gore (Dr. Bull. 94, 272. Proc. 94, 489).——See also Gore (Proc. 94, 587).

38. *Solubilities* in water of so-called insoluble salts. Hollmann (Ph. Ztg. 93, 624. Ph. Rdsch., N. Y., 93, 262).

39. *Specific Gravity.* Dott pleads for a standard temperature of 20°

C. (Ph. J. & Tr. 94, Febr. 632. Proc. 94, 505).——Influence of temperature. Fletcher (Ch. & Dr. 93, 394. Proc. 94, 505).——Sp. gr. taken at other temperatures, referred to 15° C. Curtman (Ph. Rdsch., N. Y., 94, 108. Ph. Era 94, 392. Proc. 94, 506).

40. *Starch Solution.* Keeps better on addition of a little chloroform. Kral (Ph. Ztg. 94, 743. Proc. 95, 919).——For iodometric estimations. Meinecke advises not to use starch from grains (wheat, rice, etc.), because they give as end-reaction a violet or reddish-brown coloration, while arrowroot and potato starch give a pure blue. (Ch. Ztg. 94 . . . Proc. 94, 1034.)

Sterilization of pharmaceutical preparations. Degener (Ch. Ztg. 93, 1389. Proc. 94, 508).

41. *Sulphates.* Prothière recommends as indicator neutral (yellow) potassium chromate. Titrate with $\frac{N}{10}$ barium chloride. One drop of the solution added to one drop of chromate solution on a piece of white paper, will turn the golden-yellow color of the latter to yellowish-white when all the sulphates have been precipitated; but the golden color remains as long as sulphates are present. Dark colored liquids are tested on black paper. The drops then appear black, but the smallest excess of barium chromate produces a milky turbidity. (Union Ph. 95, 151. Ph. Rdsch., N. Y., 95, 190.)

42. *Thermometer.* The Fahrenheit equivalent should be left out. Beringer (A. J. Ph. 93, 468).

43. *Titles.* Some contend that the Pharmacopœia should indicate the part of the plant used even if only one part be officinal, for practical reasons.

Hallberg gives a scheme for a more scientific and uniform classification of preparations:—1) Tinctures and extracts should indicate the strength (Deture, vinture, centure; detract, vintract, quintract, etc.). 2) Waters is the proper term for solutions of volatile substances in water; and Solutions for solutions of non-volatile substances in water. 3) Spirits for solutions of volatile substances in alcohol; and Tinctures for solutions of extractive substances in alcohol. 4) Mixtures for aqueous liquids keeping in suspension insoluble substances for internal use. 5) Liniments for oily or alcoholic liquids holding in suspension or solution soap or resinous substance for external use. 6) Emulsions for aqueous liquids holding in suspension fatty or resinous substances for internal use. (W. Dr. 93, 388).

44. *Volume.* Change of volume when liquids of different densities are mixed. Scoville (W. Dr. 93, 434. Proc. 94, 379). See also Kahlenberg (A. J. Ph. 94, 329).

45. *Volumetric Solutions* (p. 483, first paragraph) . . . "are in practice frequently rounded off" . . . does not appear to harmonize

with the precautionary remark on p. 482, second paragraph, nor with the exacting chemical requirements of the pharmacopœial processes. Beringer (A. J. Ph. 94, 95).

46. *Weight.* Study of grain weight. Lloyd (Proc. 94, 137).—— Oldberg proposes a "fluigramme," the volume of 1 Gm. of pure water at 20° C. (Bull. Ph. 96, 3.)

Acacia.

Tests. The best test for pectic compounds is ruthenium red. Mangin (Am. Dr. 93, 361. Proc. 93, 795).

Guichard distinguishes between the various acacias by their rotatory power. (Ch. & Dr. 93, 1444. Proc. 94, 901.)

Dextrin. Heat a solution of acacia to boiling with aniline sulphate. Pure gum gives a straw color, presence of dextrin an orange or brownish-red. Pietro (Am. Dr. 94, 328. Proc. 94, 901). ——To a 20 p. c. solution of acacia add a solution of 15 drops of ferric chloride solution, 15 drops of a saturated solution of potassium ferrocyanide, and 5 drops of HCl (1.165), in 60 Cc. of water. If the gum was pure, the mixture will acquire a yellow color which does not alter within 8 to 10 hours; in presence of dextrin the color will become blue within 1 to 2 hours. (Ph. Post 94, 563. Proc. 95, 867.)

Acetanilidum.

Reactions. Color reactions with sulphuric acid and potassium bichromate, potassium ferrocyanide, manganese dioxide, potassium permanganate, ceric oxide, nitric acid, bismuth subnitrate. Schaer (Arch. Ph. 94, 253. Proc. 95, 665).

Schweitzer states that mixtures of acetanilid and phenacetin, no matter in what proportions, begin to melt at 92° C. and clear up at 106–134° C. (Ph. Era 95, xiv, 683. Am. Dr. 95, xxvii, 234.)

Ritsert gives the following distinctions from methacetin and exalgin: 0.1 Gm. of acetanilid dissolves, on shaking, in 1 Cc. HCl, but separates out after a few minutes as hydrochlorate, while methacetin and exalgin remain dissolved. (Ph. Ztg. 93, 598.)

Acetum Opii.

Assay. Kebler states that the method of assay is unpractical. Each 100 Cc. contains 20 Gm. of sugar, and after preparing for the assay, in addition 8 Gm. of calcium acetate and about 5 Gm. of extract of opium, a total of 33 Gm. of solids. The final evaporation has to continue to a weight of 14 Gm. He, therefore, proposes the following modification: 100 Cc. are rendered alkaline with strong ammonia (8 to 10 Cc.), and 2 Cc. ether added to prevent frothing. Shake vigorously for 10 minutes, and set aside for at least 6 hours.