BIBLIOGRAPHY

OF

URINE ANALYSIS

BY

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Introduction

With the rapid growth of organic chemistry in the recent past, processes of the body have become simplified to the physicians and physiologists. Discoveries leading to this remarkable advancement in medicine can be attributed mainly to urine analysis for the urine is the storehouse of waste products of the various organs of the body.

Simple tests, performed either by physician or pharmacist, indicate the condition of a particular organ of the body. So important is urine analysis to the physician that one may call it the foundation of diagnosis.

Body processes are studied by examination of their wastes deposited in the urine of normal healthy people. Disease is thus detected by comparison of the results of tests upon normal healthy humans with the results of tests performed upon unhealthy humans.

Many other disorders or conditions are either detected or diagnosed by examination, either qualitative or quantitative, of the urine.

Recently most of the work being done on urine analysis has been confined to the investigation of estrogenic hormones, especially in pregnancy, and determination of vitamin excretion. Besides this, work is constantly being done on old methods of detection and determination to improve and consequently make them more accurate.

Acetone

A microchemical reagent for the detection of acetone (in the urine).

Jeti, Francesco

Chim. ind. Agr. biol. 8, 419-20 (1932) (Abstr.)

The reagent in this test is sodium nitroprusside and NaOH. If acetone is present a red-lilac color forms which immediately turns brown.

Acetone

A simple microtest for Acetone in Urine.

Barrett, John F.

Biochem. J. 30, 888-9 (1936)

Approximately 0.2 ml. of urine and 1 ml. of acid is placed in an 8 x 1 in. monax test tube. A porcelain chip is added. The test tube is closed with the trap tube containing 0.5 ml. of diluted Nessler's reagent. The tube is placed on a sand-bath and heated until steam passes through Nessler's reagent. This is a test for acetoacetic acid as well as acetone since the former is converted upon heating. A creamy precipitate indicates the presence of acetone.

Acetone and Acetoacetic Acid

Acetone and acetoacetic acid in urine.

Fischer, Ph.

Pharm. Zentralhalle 75, 189-91 (1934; through Chem. Abs. 28, 3433.

The nitroprusside test for acetoacetic acid is and remains of all others, the most dependable. Nitroprusside can not be relied on as a reagent for acetone.

Acetone bodies

The determination of Acetone bodies in urine.

Trotykii, Yu. and Mendelson, R.

Ukrain. Biochem. J. 9, 157-61 (in German (162-3) (1936)

Acetone bodies are determined iodometrically by titration with sodium thiosulfate.

Acetone bodies

Micro method for the determination of Acetone bodies in the urine.

Cantoin, Oscar

Biochem. Z. 279, 201-2 (1935)

Fresh urine must be used in this test. First a qualitative test is made and then the sample is diluted accordingly. An 8% $CuSO_4$ and 5% $Ca(OH)_2$ are used.

Acetone bodies

A simple method for the determination of urinary acetone bodies for clinical use.

Macchia, E.

Diagnostica tec. lab. (Napoli) Riv. mensile 5, 908-18 (1934)

A simple application of the nitroprusside reaction is described.

Acetone bodies

Semimicro method for the simultaneous determination of different acetone bodies in urine and in blood.

Schmidt-Hebbel, H.

Rev. estud. farm. bioquim. (Buenos Airis) 25, 526-8 (1935); Chimie & Industrie 36, 288; through Chem. Abs. 30, 71374.

The acetone bodies are converted into Me_2CO; this is converted into CHI_3 by treatment with $NaOH^2$ and an excess of iodine; the excess iodine is titrated with sodium thiosulfate. Details are given.

"Acetone Bodies"

Van Slyke's method of determination of acetone bodies applied to small volumes of blood and urine.

Nanavutty, Sohrab Hoshangsha

Bioch. J. 26, 1391-6 (1932)

A detailed procedure is given for the determination of acetone bodies. The importance of this test is pointed out in connection with Betone bodies being an important factor in causing diabetic coma.

Acetone Compounds

Value of Gerhardt and Legal tests for determination of acetone compounds.

Escudiro, Adolfo

Rev. med. lat.-am. 14, 877 (1931); Anales Asoc. quim. Argentina 32, 211 B (1934); through Chem. Abs., 29, 4395.

The Legal reaction in urine is positive when the sum acetone and diacetic acid is greater than 0.25 G. per 1000 cc., and the Gerhardt reaction is positive when the quantity of diacetic acid is greater than 0.20 G. per 1000 cc.

Acetone Compounds

Sodium nitroprusside and Betosis.

Rourich, F.E.

Sas. Rev. Acad. Cienc. Madrid 31, 185-239 (1934); through Chem. Abs., 30, 7609.

To a solution containing 5 G. of $(NH_4)_2SO_4$, 0.1 G. of Bi_2O_3 and 0.1 G. of hexamethylenetetramine is added 5 cc. of urine containing 15 drops of concentrated H_2SO_4. The mixture is shaken vigorously for 1 min. and 2 cc. of concentrated ammonia is added. The mixture is shaken and filtered. To 5 cc. of this filtrate 4 drops of 5% Na nitroprusside is added and mixed by inverting the tube. The maximum color appears 10 minutes later.

Acetylsalicylic Acid

Conjugation of salicylic acid with glycine and its action on uric acid excretion.

Quick, Armond J.

J. Biol. Chem. 101, 475-85 (1933)

1. Pure salicyluric acid was isolated from human urine.
2. A method for determination of acetylsalicylic acid in urine is described.
3. The rate of salicylic acid excretion depends on its concentration in the body.
4. The action of salicylic acid on uric acid elimination is strikingly augmented by glycine or foods rich in glycine.
5. A theory based on the possibility that salicylic acid conjugated with glucuronic acid may act as a hapten is proposed as a possible explanation for some of the physical properties of salicylates.

Acidity

Direct determination of titrational urinary acidity introducing a correction corresponding to the amount of bicarbonate.

Martinson, E.E. and Borodin, N.G.

Biochem. Z. 254, 292-300 (1932)

A known amount of standard HCl is added to a measured quantity of urine and the CO_2 is removed by evacuation. The mixture is then titrated to a pH of 7.4.

To a solution containing 5 G. of $(NH_4)_2SO_4$, 0.1 G. of Bi_2O_3 and 0.1 G. of hexamethylenetetramine is added 5 cc. of urine containing 15 drops of concentrated H_2SO_4. The mixture is shaken vigorously for 1 min. and 2 cc. of concentrated ammonia is added. The mixture is shaken and filtered. To 5 cc. of this filtrate 4 drops of 5% Na nitroprusside is added and mixed by inverting the tube. The maximum color appears 10 minutes later.

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Acridine derivatives

Detection of acridine derivatives in the urine.

Ferrari, Giovanni

Diagnostica tec. lab. (Napoli) Riv. mensile 5, 928-32 (1934); through Chem. Abs. 29, 4395.

Fice cc. of urine is treated with 1-2 drops of a 20% solution of Na caffeine benzoate; this produces an intense greenish fluorescence or intensifies a fluorescence already present if the urine contains acridine derivatives.

Adrenalin

Adrenalinemia and adrenalinuria.

Viale, Gaetano

Rev. sudamericana endocrinol. inmunol. quimioterap. 16, 387-91 (1933) (Italian); through Chem. Abs. 27, 3963.

Adrenalin can be identified in physiological liquids by a red color produced by boiling after the addition of 1 drop each of the saturated solutions of $HgCl_2$, sulfanilic acid, and KIO_3.

Adrenalin

The chemical principles of the Viale reaction

Hess, Manfredo

Diagnostica tec. lab. (Napoli) Riv. mensile, 5, 655-66 (1934); through Chem. Abst., 29, 2988.

The Viale method is not specific for adrenalin and cannot serve for its determination in blood or urine. Human blood usually gives a negative reaction. The brownish positive color sometimes observed is probably due to tyrosine and tryptophan. A positive reaction in urine is due to phenols.

Adrenalin

The influence of emotional states on adrenalinuria (Viale's reaction).

Dominici, F.

Boll. soc. ital. biol. sper. 9, 911-12 (1934); through Chem. Abs., 29, 1870.

Under influence of painful and emotional stimuli, the concentration of adrenalin determined by Viale's reaction increased markedly in 60% of the cases and remained stationary in the other 40%.

Adrenalin

Adrenalinurea (Viale's Reaction) in physiological conditions.

Dominici, F.

Boll. soc. ital. biol. sper. 9, 908-10 (1934); through Chem. Abs. 29, 3363.

With the exception of 4-5% of the cases studied, normal urine when immediately tested gave a positive Viale reaction.The limit of physiological adrenaluria revealed by the Viale reaction is 1:300,000 to 1:500,000. Although in dilutions made with distilled water it is possible to detect adrenalin ina concentration of 1:100,000 after standing for 25 days; in urine it can not be detected after standing for 72 hours.

Adrenalin

Specificity of the Viale reaction in the study of adrenaline in the urine.

Dominici, F.

Boll. soc. ital. biol. sper. 10, 53-5 (1935); Through Chem. Abs. 29,3699..

This method described can not be used specifically for adrenalin since it is absorbed by animal charoal and vegetable charcoal during pruification and the test is interfered with by urinary phenols.

Albumin

Investigation of albuminuria (preliminary paper).

Sagastume, Carlos A. and Crespi Gherzi, Roberto A.

Rev. facultad. Crene quim. (Univ. La Plata) 9, 49-57, (1934); through Chem. Abs. 29, 3699.

Albumin in urine is detected by 1-3% sulfosalicylic acid equally as well as by 25% trichloracetic acid. Mucin, however, is better detected by acetic and trichloracetic acids. Nitric acid is not satisfactory for examination of albuminuria because it also precipitates some nonprotein substances.

Albumin

Practical Method for the detection of urinary albumin.

Balloni, Antonio

Minerva med. 1935, I, 259-60; through Chem. Abs. 29,2989..

A ring test is described in which 5% NH_4 molybdate solution, acidified with 5 drops of glacial acetic acid per 100 cc. of solution, is layered over urine which has been slightly acidified with 10% acetic acid. This test will detect albumin up to dilution of 1:35,000.

Albumin

Detection of Albumin in urine

Ganassini, D.

Arch. est biochim. ital. 6, 3-12 (1934); through Chem. Abs. 28, 61671.

Albumin in urine is determined rapidly by observing at the same temperature the specific-gravity of the urine both before and after coagulation of the albumin by heat, the specific gravity of coagulated albumin being taken as 1.315.

Albumin

New method of determining albumin by means of Xantho-protein.

Leikola, E.

IV Nordiske Hjemkermoote Oslo (June 27-30, 1932) 1933; 290-1; Chimie & industrie 32, 293; through Chem. Abs. 28, 6754.

The color of the yellow xanthoprotein precipitate produced by concentrated HNO_3 is proportional to the quantity of albumin present which permits of determining albumin in blood serum, Cerebrospinal fluid and urine.

Albumin

Can Albumin be determined in urine by means of polarimeters?

Suler,

Schweiz. Apoth. Ztg. 71, 264-5 (1933); through Chem. Abs. 27, 5362.

Only large quantities (1%) of albumin can be determined by the polarimeter.

Albumin

An improved multipipet for routine determination of albumin and sugar in urine.

Short, James J.

J. Lab. Clin. Med. 18, 1181-3 (1933).

The equipment used in this work was checked for every possible error and a high degree of accuracy is obtained.

Albumin

Colorimetric methods for determination of urinary protein, plasma protein, urinary and plasma albumin and for the serial salting out of these proteins.

Berglund, Hilding & Scrirea, Walter de M.

Acta Med. Scand. 86, 82-7 (1935); through Chem. Abs. 30, 1277.

Detailed instructions for laboratory experimentation are given.

Albumin

Tests for Albumin and pseudoalbumin in Urine.

Zotur, V.

Bull. biol. pharm. 54, 63 (1936)

A critical discussion of the methods is given.

Albumin

Estimation of albumin in urine.

Sagastume, Carlos,A. and Crespi Gherzi, Roberto A.

Rev. facultad. Cienc. Quim. (Univ. La Plata) 10, 7-10 (1935); through Chem. Abs. 30, 2596.

A comprehensive study is made of some of the older clinical methods.

Albumin and Globulin

The biuret method of estimating Albumin and Globulin in serum and urine.

Line, Joseph

Biochem. J. 29, 799-803 (1935)

1. A modification is described of the biuret method of estimating serum proteins.
2. $(NH_4)_2SO_4$ is used for the separation of globulin. The results of the albumin estimation do not correspond with those obtained when Na_2SO_4 is employed and are usually higher. This is important as it has been claimed that fractionation of the protein is the same with both.
3. Modifications required for urine are described.

Albumin and Glucose.

New rational methods for the determination of Albumin and Glucose in Urine.

Sachs, Erich

Deut. med. Wockschr. 60, 1923-4 (1934); through Chem. Abs. 29, 2191.

A filter paper saturated with sulfosalicylic acid serves for detecting albumin in the urine. Glucocord, a common preparation (Composition not given), is used for detecting sugar. The addition of a drop of urine to the powdered reaction causes a black discoloration if glucose is present.

Albumin and Sugar

Diathermy test for sugar and albumin in urine.

Kimble, H.E.

Arch. Phys. Therapy, X-Ray, Radium 14, 237 (1933).

An electrical diathermy machine is described which appears very accurate in testing for sugar and albumin in sugar.

Alcohol

The determination of ethyl alcohol.

Friedmann, Theodore, E. and Klaar, Rosalind

J. Biol. Chem. 115, 47-61 (1936)

A method for determining ethyl alcohol in biological materials has been outlined which consists, briefly, of distilling the alcohol from the sample, oxidizing with alkali potassium permanganate and determining the excess permanganate iodometrically.

Alcohol

A simple micro method for the determination of alcohol in biological material.

Harger, A.N.

J. Lab. Clin. Med. 20, 746-51 (1935)

A micromethod for the determination of alcohol in biological materials is described. It consists of a modified bichromate being titrated directly with a mixture of ferrous sulfate and methyl orange. The method employs simple apparatus, requires only a little time and may also be used for methanol.

Alcohol

The absorption, distribution and elimination of ethyl alcohol.

Haggard, Howard, W. and Granberg, Leon A.

J. Pharmacology 52, 137-49 (1934)

A stream of air is passed through the sample carrying the alcohol vapor through a tube of I_2O_5 at 180°C., the liberated I and HI being caught in water or KI solution and titrated.

Allantoin

Methods of determination of allantoin in urine.

Bergami, G., Baer, P. and Boeri, E.

Biochem. terap. sper. 23, 146-52 (1936); through Chem. Abs. 30, 6406.

Different methods are compared. The method of Ro-Kishum is preferred on account of accuracy and speed.

Amines

Detection of volatile amine in connection with the investigation of biological processes.

Warek, Anton and Löffler, Heinrich

Monatsh. 64, 161-6 (1934); through Chem. Abs. 28, 7284.

A micro method for determining amines, even in the presence of NH_3, is described. The reagent used in the cover-glass drops is dinitro - a- naphthol.

Aminobenzoic acid derivatives and procaine

The diazo reaction for detection of certain local anesthetics in urine and tissues.

Gibb, W.E. and Dahn, Wm.M.

J. Lab. Clin. Med. 19, 1018-19 (1934)

This test is quick and reliable for procaine and other aminobenzoic acid derivatives used as local anesthetics, when excreted in the urine or where present in the Cadaver. Procaine can be detected in the urine a few minutes after injection into the tissues.

Amino Acids

Application of the Boltz test to the Urine.

Kilduffe, R.A., Wilson, E.D. and Bernstein, H.

J. Med. Soc., New Jersey 30, 443-4 (1933)

The test is colorimetric. Bacterial growth, formaldehyde, or phenol destroy the reacting substance.

Amino N

Comparison of gasometric, colorimetric and titrimetric determinations of amino nitrogen in blood and urine.

Van Slyke, Donald D. and Kerls, Esben.

J. Biol. Chem. 102, 651-82 (1933).

The gasometric and the formaldehyde titration methods serve as approximate measures of amino acid nitrogen when unusual interfering substances are absent. In urine where economy of material isn't necessary, and where the gasometric method involves removal of large amounts of urea, the formaldehyde titration process has proved more convenient.

Ammonia

The action of Ammonia on phenols

Harrow, Benjamin, Chamelin, Q. M. and Wagreich, Harry.

Science 78, 514 (1933)

Ammonia is determined in urine by the phenol-NaClO color rection. Results compare with other methods quite favorably.

Ammonia

Gasometric determinations which can be carried out with a calcimeter type ureometer.

D'Este, G.

Boll. chim. farm. 71, 437-45, 717-28 (1932); through Chem. Abs. 27, 476.

The gasometric methods, depending on the oxidation of hydrazine to N_2 or the liberation of O_2 from H_2O_2 are applied to the determination of copper, mercury, bromate, iodate, bromite, chlorite, peroxides, cerium, nitrate, disulphate, permanganate and perborates.

Ammonia

Apparatus for the rapid determination of urinary ammonia by the Schloesingbell method.

Fleury, Paul

J. Pharm. Chim. 20, 319-26 (1934); through Chem. Abs. 29, 2568.

The apparatus consists of a modified dessicator. Directions for the test are also given.

Ammonia

Determination of Ammonia in urine and of triple phosphate in calculi, gasometrically.

D'este, G.

Boll. chim. farm. 73, 401-12 (1934); through Chem. Abs. 29, 4785.

Ammonia in urine is determined by precipitation in alkaline solution as $MgNH_4PO_4$, the N then being determined gasometrically with NaOBr.

$MgNH_4PO_4$ in calculi can be determined directly, also total phosphate by precipitation with MgO mixture.

Ammonia

Determination of Ammonia

Skramovsky, Stanislav

Casopis Ceskoslav. Lekarnictvo 14, 249-51 (1934); through Chem. Abs. 29, 4396.

A suitable apparatus and procedure for determining N in urine are described.

Ammonia

Determination of Ammonia in the urine by the "acidity-quotient" principle.

Sander, Frity

Z. Urol. 29, 43-51 (1935); through Chem. Abs. 29, 3701.

The concentration of the acid constituents of urine is determined by titration with 0.1 N. NaOH, phenolphthalein being used as the indicator. The concentration of basic constituents is determined by titration with 0.1 N. HCl, the indicator being a mixture of bromo-cresol green and methyl orange, a combination which gives a yellow color in the pH range 4.0 to 4.6. The ratio of the quantities of NaOH and HCl used, the acidity quotient, gives a value for the acidity of the urine which is independent of the amount or concentration of the urine.

Ammonia

Determination of urea and ammonia

Gibbs, Gordon E. and Kirk, Paul L.

Mikrochemie 16, 13-24 (1934); through Chem. Abs. 29, 82[illegible].

A simple apparatus and technic are described for determining 0.0015 - 0.0083 mg. og N from the NH_3 and urea in pure solutions, in blood and in urine.

Ammonia

A practical method for the determination of Ammonia in urine.

Rossi, A.

Boll. soc. ital. biol. sper. 7, 1418-21 (1932); through Chem. Abs. 27, 2170.

The test is bases on reaction of ammonia with hypobromites.

Ammonia

Determination of ammonia in urine.

Urbach, Carl

Biochem. Z. 259, 351-7 (1933)

Ammonia is absorbed by permutite and nesslerized after the addition of alkali. The color is examined in a step photometer.

Ammonia

Gasometric determination carried out with a ureometer of the calimeter type.

D'Este, G.

Boll. Chim. farm. 72, 601-14 (L933); through Chem. Abs. 28, 2740.

Discussion and determination of urea, ammonium salts, total nitrogen and the alkaline reserve of body fluids is given.

Ammonia

Urinary Ammonia

Mikaeloff, S.

Bull. Soc. chim (5), 3, 1048-52 (1936); through Chem. Abs. 30,6407.

The Sahli method for determination of urinary ammonia, which involves precipitation of the urine with $BaCl_2$ and NaOH and titration of portions of the filtrate with HCl before and after elimination of the NH_3 in vacuo, was compared with the methods of Folin and Schlosinger and found to be sufficiently accurate for clinical purposes. It has the advantages of being

relatively simple, taking a short time and not requiring the constant presence of the experimenter. This method was used to determine the increase of urinary ammonia after ingestion of NH_4OAc in certain pathological conditions of the liver. Persons with normal livers showed initially a lower urinary ammonia than those in whom liver function was impaired. In all cases only a small part of the ingested NH_3 was recovered, but a greater increase was found in the case of persons with normal livers.

Ammonia

"True" urinary ammonia; Comparison of the method of Ronchese' with the "micro" Scloesing method.

Balatre, P.

J. Pharm. Chim. 22, 107-12 (1935).

The accuracy of Fleury's "micro" Schloesing method for the determination of urinary ammonia (C.A. 29, 2568?) is verified. Its results are 9-34% lower than those by the Ronchese method of formol titration (cf. C.A. 2, 2663), in which total nitrogen, that is, including amino nitrogen is determined.

Antimony

Detection of Antimony in Urine.

Bey, M. Khalil

J. Egyptian Med. Assoc. 19, 285-305 ('36); through Chem. Abs. 30, 6814.

Individuals vary in the rapidity and degree of excretion of Sb and As after injections of complex organic compounds of these drugs. Therapeutic results correspond to this variation, slow excreters being liable to toxic manifestations. A simple test is given to determine the rate of excretion of Sb in the urine.

Antimony

Determination of Antimony in the urine.

Couilland, J.

Bull. soc. pharm. Bordeaux 83, 248 (1935)

Chlorides are reomoved by precipitation with $AgNO_3$; the organic matter is destroyed by HNO_3 and H_2SO_4; and the antimony is precipitated as the sulfide.

Arsenic

Determination of traces of arsenic by the method of Cribier. II. Application to complex solutions and in particular to the determination of arsenic in urine.

Griffon, Henri and Buisson, Maurice

Bull. soc. chim. (5), 1, 815-33 (1934; through the Chem. Abs. 28, 6653.

This method is based on the color of the stain on $HgCl_2$ paper intensified by treatment with KI solution.

Arsenic

Determination of traces of arsenic by the method of Cribier. I. Experimental study of the mechanism of the technic.

Griffon, Henri and Buisson, Maurice

J. pharm. chim. 18, 422-37 (1933); through Chem. Abs. 28, 3024.

The method is found to be reliable if a careful technic is observed.

Atebrin

Quantitative and Qualitative methods for detection of atebrin in urine.

Barbital

Studies on barbiturates II. Contributions to methods of barbital research.

Kappanji, Theodore; Dille, James M.; Murphy, Wm.S.; and Krop, Stephen

J. Am. pharm. Assoc., 23, 1074-9 (1934)

Improvements are discussed for the estimation of the various barbiturates, including selective solvents and specific tests.

Barbital

Estimation of Barbital in urine

Straub, Janos and Mihalovits, Eugen

Pharm. Zentralhalle 75, 226-8 (1934); through Chem. Abs. 28, 4089.

Several methods of extracting barbital from urine are discussed.

Barbital

Studies on barbiturates.

Kappanyi, Theodore; Murphy, Wm.S.; and Krop, Stephen

Arch. intern. pharmacodynamie, 46, 76-96 (1933); through Chem. Abs. 28, 826.

Colorimetric and gravimetric determinations are discussed.

Barbiturates

Barbiturates XI. Further Contributions to methods of barbital research.

Linegar, Charles, R.; Dille, James M.; and Kappanyi, Theodore

J. Am. Pharm. Assoc. 24, 847-52 (1935).

1. Two practical methods for clearing highly colored urines for the purpose of quantitative estimations are described.

2. The urine has a limited buffering capacity manifested in the conversion of sodium barbital into the acid form even in alkaline urines. The amount of barbital so converted is inversely proportional to the amount of sodium barbital originally added to the urine.

Barbituric acid derivatives.

Detection, determination and identification of barbituric acid principles in urine and their elimination.

Paget and Desodt

J. Pharm. Chim. 18, 207 - 14 (1933); through Chem. Abs. 27, 5362.

The barbituric acid derivatives are extracted from urine with $(C_2H_5)_2O$ and are purified with charcoal. Identification tests are given.

Barbituric Acid Derivatives.

Toxicological proof of soporifics of the barbituric acid series.

Mohrschuly, Wilhelm

Munch med. Wochschr. 81, 677-3 (1934); through Chem. Abs. 28, 4760.

Fifteen - 20 cc. of urine is boiled with 0.2 G. Merck's Carbon and centrifuged hot. After separation 3-4 cc. of absolute alcohol and 7 cc. of $CHCl_3$ are added to the carbon, warmed and filtered. To the filtrate is added 20 drops of 1% $CO(NO_3)_2$ in absolute alcohol and then 1% alcoholic KOH dropwise. A deep blue indicates a barbituric acid derivative.

Barbituric derivatives.

Practical characterization of barbituric derivatives in urine.

Fouchet

J. Pharm. Chim. 20, 403-6 (1934); through Chem. Abs. 29, 4040.

A method is given for detection of various derivatives of barbituric acid which are in use quite generally.

Barbituric acids and Strychnine.

Strychnine and barbituric acids

Kergonon, E.

Bull. Soc. Pharm. Bordeaux, 73, 53-61 (1935); through Chem. Abs. 30, 6775.

Methods for the determination of these substances in urine are described.

Bases

The determination of total base in blood and other biological fluids by the electrodialysis method of Adaire and Keys.

Keys, Ancel

J. Biol. Chem. 114, 449-59 (1936).

The electrodialysis method of Adair and Keys for total base gives results accurate to within 1% when samples of 0.2 cc. of biological fluids are used. By this method at least twenty-four determinations may be made within the course of a day.

Details of apparatus, procedures and results are given.

Benzene

Benzene determination with the pulfrich step-photometer.

Szecsenyi-Nagy, Ladislaus V.

Biochem. Z. 281, 178-80 (1935)

Estimation is accomplished by the formation of the dinitro derivatives.

B- hydroxybutyric acid

Qualitative test for B-hydroxybutyric acid in urine and other biological liquids.

Khouri, J.

Compt. rend. soc. biol. 111, 370-1 (1932); through Chem. Abs. 27, 319.

The sample is boiled to remove $(C_2H_5)_2CO$, cooled, treated with a little Na_2O_2 and tested with Frommer's reagent. Glucose may interfere if a sufficient amount is present.

Bile acids

Bile Acid content of the urine.

Ranyoli, Guiseppe

Boll. Chim. farm. 73, 81-3 (1934); through Chem. Abs. 28, 4443.

This method depends on a color reaction with $BaCl_2$.

Bile acids

A new colorimetric method for the determination of biliary acids in body fluids: with a note on their alleged presence in normal blood.

Scott, L.D.

J. Lab. Clin. Med. 19, 523-39 (1934)

This test depends upon precipitation of bile salts from solution by HCl and $(NH_4)_2SO_4$ and the color reaction produced in the usual way, i.e., no production of color in the cold but gradual development of color on heating on a water bath.

Bile Pigments

Foemmers Reactions for the identification of Bile pigments in urine.

Severi, Lucio

Biochim. terap. sper. 21, 146-7 (1934); through Chem. Abs. 28, 5486.

The method consists in evaporation of the urine to one tenth, addition of HCl, and precipitation with BaO_2. Bile pigments confer upon the precipitate formed a green color. The reaction is reliable only if non-evaporated urine is used.

Bile pigments

Detection of Biliary pigments in urine by means of methylene blue.

Balatre, P.

J. Pharm. Chem. 22, 166-8 (1935); through Chem. Abs. 30, 41913.

The green color is shown to be due to the mere superposition of the yellow color of the urine and the blue color of the dye, not to any chemical interaction between bile pigments and the reagent.

Bilirubin

Clinical tests for bilirubin in urine.

Godfried, Emanuel G.

Biochem. J. 28, 2056-60 (1934)

1. A new and simple qualitative test for bilirubinuria is described, which should be useful clinically.
2. Hunter's diazo-test is modified to yield quantitative results.
3. The minimum quantities of bilirubin detectable by the several methods are determined.

Bilirubin

Extraction method for determination of bilirubin in different body fluids.

Kerppola, Wm.

Acta. Med. Scand. Suppl. L, 277-80 (1932); through Chem. Abs. 28, 2026.

Free bilirubin is extracted with $CHCl_3$ and the water-soluble alkaline bilirubin is first converted to bilirubin by acid and then extracted with $CHCl_3$. The quantitative test is a color reaction.

Bilirubin

Determination of bilirubin in urine.

Laemmer, Maral and Beck, J.

Compt. rend. soc. biol. 113, 166-9 (1933); through Chem. Abs. 27, 3962.

Bilirubin is precipitated as a barium salt, taken up by alcoholic KOH, treated with diazotized sulfanilic acid and determined photometrically.

Bilirubin

Determination of bilirubin in urine by the methylene blue method.

Fellinger, K. and Menkes, K.

Wiener Clin. Wochschr. 46, 133-4 (1933); through Chem. Abs. 27, 2703.

In the absence of bilirubin an intensive blue color develops. In icterus urines a green color develops first and so the number of drops necessary to develop the blue color is an indication of the concentration of bilirubin.

Bilirubin

A new qualitative and quantitative method for bilirubin in urine using Daddis diazo reagent.

Greco, Aldo

Diagnostica tec. lab. (Napoli) Riv. mensile, 2, 925-32 (1931); through Chem. Abs. 27, 1022.

Bile pigments are precipitated with $BaCl_2$, the precipitate is shaken with alcoholic KOH, and a few drops of Daddi's reagent are added, a purple coloration indicates a positive test.

Bilirubin

The methylene blue reaction for the detection of bilirubin in the urine.

Lanza, Giovanni

Diagnostica tec. lab. (Napoli) Riv. mensile 3, 989-93 (1932); through Chem. Abs. 27, 4262.

If blood, anthroquinone derivatives and trypoflavine are absent, the methylene blue reaction is specific for bilirubin.

Bilirubin

A simple and sensitive reaction for bilirubin in the urine.

Hoitink, A.W.J.

Nederland Tydschr. Genecokunde 79, 2928-30 (1935); through Chem. Abs. 29, 8033.

Five cc. of 10% $BaCl_2$ solution is added to 10 cc. of the slightly acidified urine to produce a precipitate; the precipitate is spread on a milk-glass plate and a drop of Fouchet's reagent (a $FeCl_3$ solution with some CCl_3CO_2H added) is added. The appearance of a blue color after 5 minutes indicates the presence of bilirubin.

Bismuth

Resorption Conditions for bismuth and its value in oral therapy of syphilis.

Serefis, S.

Arch. Dermatol. Syphilis 171, 1-98 (1934)

Oral administration of $BiCl_3$ in glycerol solution cured dogs in doses 10 times that used for injection but no improvement was obtained in 5 cases of humans. Methods are given for estimation of bismuth in urine.

Blood

An approved test for occult blood, especially in the urine.

Stone, Willard J. and Burke, Geo. T.

J. Am. Med. Assoc. 102, 1549-50(1934)

After centrifuging the sample of urine, the sediment is treated with 2 drops of a 1% o-tolidine in methyl alcohol solution and three drops of a mixture of acetic acid and HgO_2. A green-blue color develops.

Blood

Organic ether

Stratton, A.J.

Pharm. J. 133, 679 (1934)

This reagent and tincture of guaiac are used to detect blood in urine.

Blood

New technic in the chemical determination of blood in urine, and feces.

Jones, A.

Ing. Chim. 17, 243-4 (1933); through Chem. Abs. 28, 3754.

By the use of the benzidine reaction, blood is detected in urine and feces in quantities of 1 part in 10,000 and 16 parts in 10,000 respectively, when $CHCl_3$ is used instead of ether to extract the blood.

Blood

A new source of error in the benzidine test.

Jacchia, Luigi

Diagnostica tec. lab.(Napoli) Riv. mensile 2, 857-64 (1931); through Chem. Abs. 27, 1022.

The benzidine test (Adler) can appear positive even in the absence of blood in the urine and feces if the subjects have received iodine or iodine compounds.

Blood

An improved and simplified benzidine test for blood in urine and other clinical material.

Ingham, John

Biochem. J. 26, 1124-6 (1932)

"Hyperol", a dry stable powder, containing 25% of hydrogen peroxide, is used as the oxidizing agent in the benzidine test for blood in clinical laboratory practice.

This test is found to be inexpensive and very reliable.

Bromides

An absorption apparatus for the microdetermination of certain volatile substances. V. The microdetermination of bromide, with application to blood and urine and observations on the normal human subject.

Conway, Edward J. and Flood, John C.

Biochem. J. 30, 716-27 (1936)

Special apparatus is described for the determination of bromide by its oxidation to free bromine by acid dichromate. The Br is then dissolved in 20% KI and the free iodine determined by use of sodium thiosulfate solution.

Bromine

Determination of minute quantities of bromine in body fluids.

Leipert, Th. and Watzlawek, O.

Z. Physiol. Chem. 226, 108-15 (1934).

The experiment is based on wet incineration with Ag_2SO_4-CrO_3-H_2SO_4 and absorption of liberated Cl_2 and Br_2 in NaOH. Addition of NaCl oxidizes any HBr or HOBr to $HBrO_3$ which is then determined iodometrically.

Bromine

A method for the determination of small amounts of bromine in body fluids and organs.

Stoll, A. and Brenken, B.

Biochem. Z. 268, 229-46 (1934).

This determination is based upon ashing the sample and upon iodometric methods.

Caffeine

Determination of Caffeine in biological fluids and tissues.

Kunz, Alfred F.

Biochem. Z. 275, 270-85 (1935); through Chem. Abs. 29, 2567.

A detailed experiment is given for the laboratory determination of caffeine and its isomer, theobromine, or both.

Calcium

A method for the determination of Calcium balance.

Buliere, W.L.

Rev. belge sci. med. 6, 787-96 (1934); through Chem. Abs. 29, 7367.

A volumetric method for the determination of Ca in biological materials is described.

Calcium

Improvements in the methods for Calcium determination in biological material.

Chi. Che Wang

J. Biol. Chem. 111, 443-53 (1935)

A new washing solution for calcium oxalate precipitation of 2% ammonia in equal parts of alcohol, ether, and water prevents flotation and permits washing of the precipitate without appreciable loss of calcium.

The treatment of urine with trichloracetic acid and carbon allows direct calcium determination in urine.

Calcium

Method for determining Calcium in urine.

Gerrity, Harold and Knott, J.C.

Wash. Agr. Expt. Sta. 42 nd. Ann. Rept. (Bull 275) 28-9 (1932)

The method described here is a modification of the standard oxalate method.

Carbohydrates.

Modification of the Copper-lime technic for the separation and recovery of carbohydrates from biological fluids.

Archibald, Reginald Macg.

Trans. Roy.Soc. Can. 29, Sect V 97-105 (1935)

A modification of Van Slyke's Cu-lime technic enables the complete serparation of minute amounts of carbohydrates from the interfering substances and the nitrogenous materials which appear in urine. Hexoses, pentoses and disaccharides could be removed almost completely from aqueous solutions containing 10 mg. of sugar per 100 cc.

Carbon

A micro-method for the determination of Carbon in biological fluids. II. Gasometric methods.

Claudatus, Ioan and Petrea, Damian

Bull. soc. chim. Romania 15, 107-10 (1933); through Chem. Abs. 28, 3436.

This method has the advantages over other methods in that it is more rapid.

Carbon

The determination of total carbon in urine. Modification of Dennstedt's method.

Insua, Norberto E.

Rev. sudamericana endocrinol. inmunol. quinioterap. 18, 609-17 (1935)

Drying in vacuo over H_2SO_4 causes a loss of C of about 10%, at 37°C. of 15%. Drying at 57-60° causes evaporation of the total Me_2CO but because of the short time required (2-4 hrs.) no other loss occurs. Determination of Me_2CO in the original sample and of C in the dried residue gives accurate results.

Carbon

Determination of the nonprotein Carbon in biological fluids.

Kocholaty, Walter

Biochem. Z. 286, 186-92 (1936)

A description is given of a combustion train where CO_2 is directly determined by titration.

Carotenoids

The determination of the carotenoid content s of blood, tissues and fluids in daily clinical practise.

Ratchevsky, P.

Bull. soc. Chim. biol. 17, 1187-93 (1935).

Bile, urine and spinal fluid are concentrated by evaporation and treated as blood. Tissues are ground with a little sand and KOH solution and then extracted with EtOH.

Catalase

The determination of Catalase in stools, urine and gastric juice.

Kretz, J. and Pellegrini, A.T.

Wiener klin. Wochenschr. 47, 389-91 (1934); through Chem. Abs. 28, 6749.

The test consists of adding 3% H_2O_2 solution to an equal volume of sample to be tested and observing the height of the foam.

Chloral Hydrate

Determination of Chloral Hydrate in Blood and Urine.

Freidman, Max M. and Calderone, Frank A.

J. Lab. Clin. med. 19, 1332-4 (1934)

This method makes use of the process for the quantitative determination of small amounts of chloroform in tissues. The final step is a pyridine color reaction with chloroform. This color change is produced not only by chloroform but by all R-C-halogen compounds. This procedure is altered but very litt.e

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Chlorides

The Colorimetric estimation of chlorides in blood and urine.

Westfall, B.B.

Am. J. Med. Sci. 185, 148 (1933)

This test is based upon the formation of AgCl and alkali chromate from Ag_2CrO_4 when in stoichiometric proportion when suspended in an alkaline chloride solution.

Chlorides

Note on the use of tartrazine in the determination of chlorides in biological material.

Fearon, Wm.R. and Gillespie, Wm.A.

Biochem. J. 28, 1629-30 (1934)

Tartrazine (also known as tartar yellow or tartrazole yellow) is found to be particularly useful as an absorptive indicator for determining the end-point in the titration of halides by silver nitrate in biological secretions and extracts.

Chlorides

A note on Friend's method for the estimation of Chlorides.

Hearn, John E.

J. Lab. Clin. Med. 20, 302-3 (1934)

Friend's method consists of direct titration. The author gives sources of error and advised changes.

One cc. of urine in approximately 25 cc. of distilled water is titrated without filtering. The number of cc. of standard $AgNO_3$ required corresponds to the chloride content in Gm. of NaCl per liter.

Chlorides

The determination of urine chlorides with mercuric nitrate

Holdridge, E.E. and Carett, J.W.

J. Lab. Clin. Med. 20, 303 (1934)

The chloride method of Votecek, using mercuric nitrate to titrate chloride solutions with sodium nitroprusside as an indicator, was applied to determination of blood plasma chlorides and found so successful that it has been applied to urine chlorides.

Chlorides

A colorimetric microdetermination of chlorides in blood and urine.

Letonoff, L.V.

J. Lab. Clin. Med. 20, 1293-6 (1935)

A simplified microprocedure for colormetric determination of chloride in blood, plasma, and urine is described. The chloride content of 0.1 cc. of blood or 0.05 cc. of urine may be determined.

Powdered zinc borate is an effective precipitant of blood proteins that does not absorb chloride.

Chlorides

Determination of chlorides in biological materials.

Collier, Vines Jr.

J. Biol. Chem. 115, 239-45 (1936)

The method proposed for the determination of chlorides in biological materials is shorter and simpler than the older silver nitrate- thiocyanate procedures and is more accurate since no filtration processes are used and only one standard solution.

Chlorides

Determination of chlorides in biological fluids by the use of adsorption indicators. The use of diphenylamine blue for volumetric microdetermination of chlorides in urine and blood filtrates.

Saifer, Abraham and Korblum, Morris

J. Biol. Chem. 114, 551-5 (1936).

A rapid, accurate method for the determination of chlorides in blood filtrates and urine by direct titration with silver nitrate is described in which diphenylamine blue is used as an adsorption indicator. Quantities in the range of 1 mg. sodium chloride can be determined with a maximum deviation of 2%.

Chlorides

The determination of chloride in body fluids by direct titration.

Rose, Charles, F.M.

Biochem. J. 30, 1140-6 (1936)

A quantitative method is described for the accurate estimation of chloride by direct titration, using absorptive indicators, in all body fluids not containing protein in excess of 3%. A method is also given to remove excess protein so that the body fluid may be tested for chloride by this method.

Chlorides

An Absorption apparatus for the microdetermination of certain volatile substances III. The microdetermination of chloride with application to blood, urine and tissue.

Conway, Edward, J.

Biochem. J. 29, 2221-35 (1935)

A method is discussed by which the chloride is converted to chlorine and its equivalent of iodine determined by use of $Na_2S_2O_3$.

Chlorides

The determination of chlorides, hypochlorites and chlorates in muxtures.

Foucry, J.

Bull. sci. pharmacol. 39, 675-6 (1932)

Three successive titrations are run on the same sample. The Cl_2 is set free from the Cl^- by H_2SO_4 and titrated with Hg^{++}; the Cl_2 is set free from ClO^- by As_2O_3 and again titrated and lastly the Cl_2 is set free from ClO_3^- by $NaNO_2$ and again titrated with Hg^{++}.

Chlorides and Glucose

Determination of glucose and chlorides in urine containing sodium formaldehydesulfozylate.

Hug, E. and DeMeio, R.H.

Rev. soc. argentine biol. 11; 595-8(1935); Compt. rend. soc. biol. 121, 370-2 (1936); through Chem. Abs. 30, 2596.

Sodium formaldehydesulfoxylate (I) is eliminated in the urine after administration. It reduces all the common glucose reagents; hence the glucose in urine containing I must be determined polarimetrically or the I must be removed. The only suitable method of removal is defecation with $HgSO_4$ by the method of West and Peterson (C.A. 27, 2479). Since I reduces silver compounds it must be destroyed by oxidation with $KMnO_4$ before the chlorides are determined.

Chlorides, starch indicator for

A stable starch indicator for the iodometric estimation of chlorides in blood and urine.

Shapiro, C.A.

J. Lab. Clin. Med. 20, 195-8 (1934)

A stable starch indicator is prepared with the use of acetylsalicylic acid and hexamethylenetetramine as preservative. It can be safely used in iodometric methods for chlorides in blood and urine.

Chlorine

Determination of urinary chlorine.

Glomaud, G. and Bon-Bernatits, Mlle.G.

J. Pharm. Chim. 19, 437-42 (1934); through Chem. Abs. 28, 4445.

Two methods are given, one a mercurimetric method and the other a precipitation method using $AgNO_3$. The results are compared and discussed.

Cholesterol

A method for the colorimetric determination of the urinary cholesterol.

Mirsky, Arthur

J. Lab. Clin. Med. 18, 1068-7 (1933)

Cholesterol is extracted from the urine with some lipoid solvent and then determined wither gravimetrically by the digitonide method or colorimetrically. Criticism of the latter has centered on pigmentation and occasional turbidity of the extracted solution which renders the final color indistinct. This is overcome by a procedure whereby the lipoids are extracted and not the pigments.

Chrysanthemummonocarboxylic acid.

Color test for Chrysanthemum mono carboxylic acid and its detection in urines after ingestion of pyrethrins.

Audiffren

J. Pharm. Chim. 19, 535-6 (1934); through Chem. Abs. 28, 7287.

The test depends upon a color reaction with acid mercuric sulfate in acid solution.

Citric Acid

A method to determine small amounts of citric acid in biological material.

Pucher, George, W., Sherman, Caroline C., and Vickery, Hubert, B.

J. Biol. Chem. 113, 235-45 (1936)

Quantities of citric acid of the order 0.1 to 1.0 mg. can be determined with accuracy by oxidation to pentabromoacetone and conversion of this substance by means of sodium sulfide to a colored material suitable for estimation in the pulfrich spectrophotmeter.

Clinical analysis

Recent methods of clinical value in biochemical analysis.

Harrison, G.A.

Pharm. J. 135, 183-5 (1935)

Recent methods of clinical urinary examination and blood analyses are reviewed.

Cocaine

The excretion of Cocaine

Oelkers, H.A. and Vincke, E.

Arch. exptl. path.pharmakol. 179, 3418 (1935); through Chem. Abs. 30, 3079.

A method is described for the determination of cocaine in urine. It was found that the ordinary excretion of cocaine was comparatively slight, and depends on the volume and pH of the urine. If the urine is quite acid and diuresis is pronounced, it may amount to 16% of the quantity injected. The bladder mucosa reabsorbs cocaine but only to an insignificant extent from the dilute solution represented by urine. The determination of cocaine by its mydriatic effect in white mice is inexact.

Color reactions

Some oxidative reactions related to tryptophan

Guerra, G. Del.

Arch. farmacol. sper. 59, 86-92 (1935); through Chem. Abs. 29, 2886.

Alkaloids containing a tryptophan nucleus such as strychnine and brucine, give many color reactions with oxidants which are also given by tryptophane alone. A number of alkaloids were treated with 1 cc. of 1% $K_2Cr_2O_7$ and 1 drop of concentrated HCl. Positive reactions (red in cold, becoming intense on heating) were given by eserine, strychnine, brucine, yohimbine, aspidospermine (a toad venom), ergotin, calycanthine, tryptophan and indole. Normal human urine gives an intense red color, resulting from the indole and phenolic constituents.

Creatine

The determination of Creatine in urine.

Langley, Wilson, O., Rosenbaum, Maurice M. and Rosenbaum, Myron, G.

J. Lab. Clin. Med. 20, 972-4 (1935)

A simple method for the analysis of Creatin of urine by use of H_2SO_4 is described. Extraneous red color, such as occurs in certain other procedures, is not formed, and creatine which has been added to urine may be accounted for quantitatively.

Creatine and Creatinine

The determination of Creatine and Creatinine in Urine.

Eggs, Franz and Vanoli, Gerhart

Klin. Wochschr. 14, 204-5 (1935); through Chem.Abs. 29, 5140.

After addition of HCl, the urine is evaporated to dryness, the temperature being kept below 60°C., and the dry material redissolved for the determination of total creatinine. Volume changes and errors introduced by overneutralization are thus avoided.

Creatinine

Sources of error in the colorimetric determination of Creatinine by the Folin method.

Linneweh, Fr. and Linneweh, W.

Klin. Wochschr. 13, 1581-2 (1934); through Chem.Abs.29,1116.

Various sources of error in creatinine determination by this method are pointed out.

Creatinine

Creatine and Creatinine metabolism.I.Method of Creatinine determination in urine and blood.

Lieb, H. and Zacherl, M.K.

Z. physiol. Chem. 223, 169-79 (1934); through Chem. Abs. 28, 3093.

For determination of Creatinine by the Jaffe color reaction, the measurement of the extinction Coefficient by means of the pulfrich photometer with green filter S53 is reliable than the usual colorimetric method.

Creatinine

Sources of error in the colorimetric determination of creatine by Folin Method.

Linneweh, Fr. and Linneweh, W.

Klin. Wochschr. 13, 589-91 (1934); through Chem. Abs. 28, 6750.

The acid treatment of urine of a patient with muscular pystrophy, used to convert creatine to creatinine preparatory to testing with picric acid, also caused the liberation of certain ether-soluble "pseudocreatine" substances which gave the same color reaction as creatinine.

Creatinine

The determination of Creatinine with sodium 3,5 dinitrobenzoate.

Langley, Wilson D. and Evans, Margaret

J. Biol. Chem. 115, 333-41 (1936)

Procedures are described for the determination of creatinine of urine and of blood with sodium 3,5-dinitrobenzoate and alkali. With this reagent the extraneous color is negligible when amounts of creatinine greater than 0.02 mg. per 10 cc. are determined. The reagent is more specific toward creatinine than the picrate reagent.

Creatine

Some applications of a new color reaction for creatinine.

Benedict, Stanley R. and Behre, Jeanette A.

J. Biol. Chem. 114, 515-32 (1936)

A new color reaction for creatinine with 3,5-dinitrobenzoic acid in presence of alkali is described. Results obtained by the application of this reaction to various creatinine derivatives, to glycocyamidine and hydrantoin, and to urine and blood filtrates are described. A method for the determination of urinary creatinine by the new reagent is described.

Creatinine

Creatinine determination in urine and blood.

Lieb, H. and Zacherl, M.K.

Wien. Klin. Wochschr. 47, 1512-3 (1934); through Chem. Abs. 29, 2988.

Nothing given.

Creatinine

Urine Creatinine determination by the step photometer.

Bühler, Fritz

Z. ges. Exptl. Med. 93, 613-8 (1934); through Chem. Abs. 28, 4761.

No information.

Cystine

The iodometric determination of cystine in the urine.

Virtue, Robert, W. and Lewis, Howard, B.

J. Biol. Chem. 104, 415-21 (1934).

A modification of the Okuda iodometric titration method for the determination of cystine and disulfides in urine is presented. The optimal conditions for reaction between - SH groups and iodine have been found to be (1) low temperature (0°), (2) acid reaction (2% HCl), and (3) avoidance of amounts of iodine in any considerable excess of those required for the reaction. This method has been used successfully with rabbit and human urine (normal and cystinuric).

Cystine

Sulfur metabolism II. Determination of Cystine in nomral urine.

Medes, Grace

Biochem. J. 30, 1293-7 (1936)

The cystine content of normal urine is determined by the cuprous chloride precipitation method followed by recovery of cystine as cysteine by decomposition of the mercaptides with H_2S and subsequent estimation of the cysteine with phospho-18-tungstic acid. The results of this method give values approximately in agreement with other methods.

Cystine

Sulfur metabolism I. The precipitation of cystine from solutions by mercuric and cuprous chlorides and its recovery, as preliminary to its determination in urine.

Medes, Grace and Padis, Kively W.

Biochem. J. 30, 941-7 (1936)

A study is made of cystine and cysteine precipitation from solutions of $HgCl_2$ and CuCl and their recovery as cysteine in sodium acetate-acetic acid buffer solutions suitable for subsequent use in quantitative determination by phospho-18-tungstic acid. The results of recovery by various methods are compared and discussed.

Diagnosis

Scientific urinary diagnosis.

Weiss, M.

Pharm. Monatsh. 15, 153-8 (1934); through Chem. Abs. 28, 58441.

A discussion.

Diastase

The necessity of using buffer solutions in the Wohlgemuth method for urinary diastase.

D'Ignazio, C.

Diagnostica tec. lab. (Napoli), Riv. mensile 4, 1017-34 (1934); through Chem. Abs. 28, 7281.

Methods and reasons for use of a buffer are discussed.

Dinitrophenol

Detection of 2,4-dinitrophenol and its elimination products in urine.

Meyer, A. and Drutel, H.

Bull. soc. Chim. biol. 17, 1455-61 (1935); through Chem. Abs. 30, 10815.

The dinitrophenol is determined by a color test which responds to as little as one part in 50,000 of urine. Other tests are discussed.

Estrin

The determination of urinary estrin.

Smith, Geo. Van. S. and Smith, Watkins O.

Am. J. Physiol. 112, 340-50 (1935)

Variations of older methods are discussed and a new method adopted by which a quantitative test can be applied to a high degree of accuracy.

Estrin

Colorimetric estimation of estrin in the urine of non-pregnant women.

Marrian. G.F. and Cohen, S. L.

Nature 135, 1072 (1935)

This test seems to be sensitive only when quite large amounts of estrin are present.

Estrin (theelin and theelol)

The chemical diagnosis of pregnancy by detection of estrin in urine.

Schmulovity, M.J. and Wylie, Boyd H.

J. Lab. Clin. Med. 21, 210-16 (1935)

A method is described for the chemical detection of theelin and theelol in urine of pregnant women. Results obtained with this method in 89 urinalyses of 56 patients suggest that it may be used for chemical daignosis of pregnancy.

Estrogenic hormone

Detection of the estrogenic hormone in the urine of pregnant women by the fluorescence spectrum of a reaction product.

Bierry, Henry and Gouzon, Bernard.

Compt. rend. soc. biol. 122, 147-9 (1936); through Chem. Abs. 30, 52475.

This process is referred to in the previous reference on estrogenic hormone.

Estrogenic hormone

Detection of estrogenic hormone in the urine of pregnant women by spectrophotometry.

Chevallier, A; Cornil, L. and Verdollin, J.

Bull. Acad. med. 114, 171-3 (1935)

The estrogenic substance is concentrated by alkaline hydrolysis and passage through NaOH solutions. The solution gives a characteristic absorption spectrum in ultraviolet light.

Estrogenic hormones

The spectral detection of the estrogenic hormone in the urine of the pregnant woman.

Bierry, Henri and Gouzon, Bernard

Compt. rend. 202, 686-7 (1936); through Chem. Abs. 30, 38507.

The hormone is removed from the urine by adsorption and elution and freed from pigments by chromographic selectivity. The hormone is dissolved in $CHCl_3$ and H_2SO_4, and its bands are compared with those of a known hormone.

Fat

Technic of urinalysis in fat metabolism. Clinical and experimental study.

Jirka, Frank J. and Scuderi, Carlo S.

J. Lab. Clin. Med. 20, 631-3 (1935)

Results of this experiment:-

1. Unless the bladder is completely emptied in the sitting or erect posture, examination of the urine for fat is worthless.
2. All intracystic fat is found in the last few drops of urine due to the physicial phenomenon of floatation.
3. Direct quantitative readings of the amount of fat present in urine are obtained by placing a specimen in a Babcock tube, and Centrifuging for fifteen minutes.

Ferrocyanide

The microdetermination of ferrocyanide in muscle and urine.

Edwards, K. Graham and Langley, Wilson D.

J. Biol. Chem. 112, 469-75 (1936).

A method is presented by means of which soluble ferrocyanide in amounts from 1 to 40 mg. can be determined in pure solutions and in urine or minced muscle.

Flavins

Determination and excretion of flavins in normal human urine.

Emmerie, A.

Nature 138, 164 (1936); through Chem. Abs. 30, 71938; Acta Brevia Neerland Physiol. Pharmacol., Microbiol. 6, 108-9 (1936)

The content of flavins in urine was determined by adsorption iwth PbS, elution with a mixture of H_2O, pyridine and ACOH(8-2-0.2), oxidation with $KMnO_4$ in ACOH solution, and determination of the resulting color with a step photometer (S 47). An increased excretion of flavins occurred in urine after eating cooked ox liver.

Flavins

Determination and excretion of flavins in normal human urine.

Emmerie, A.

Nature 138, 164 (1936)

Flavins are determined by adsorption with PbS, elution with H_2O, pyridine, and acetic acid, oxidation with $KMnO_4$, and determination of the resulting color with a step photometer.

Fructose

A colorimetric method for the determination of fructose in blood and urine.

Roe, Joseph H.

J. Biol. Chem. 107, 15-22 (1934)

Urine pigments and cellular debris are removed from the urine by means of an acid-washed, reactivated, decolorized charcoal.

The color reagent is resorcinol since it gives a greater depth of color than diphenylamine under like conditions of this test.

Fructose, pentose and glucuronates

A critical comparison of color tests for fructose, pentoses and glucuronates in urine.

White, F.D. and Green, A.C.

Trans. Roy. Soc. Can. Sect. V, 26, 145-57 (1932)

Criticism of the methods with detailed proposed changes are given.

Galactose

The galactosuria test of Filssinger; Application of the method of Fleury and Marque to the determination of galactose in urine.

Hayard, A., Herbain, M. and Vaile, C.

J. Pharm. Chem. 21, 61-71 (1935); through Chem.Abs. 29, 5874.

This method is recommended above others since it is speedy and dependable. It is based upon galactose excretion in the urine under regulated conditions.

Galactose

Studies in the galactose test.

Geill, Torben

Acta Med. Scand. 81, 31-62 (1934); through Chem. Abs. 28, 2742.

To obtain the correct galactose values in urine, the latter is shaken with animal charcoal and acetic acid in a 1-10 ratio. In hepatitis cases the galactose test is generally positive. In acute cases negative results were found in very mild attacks. In cases of stagnation icterus all the tests were negative. Positive tests were frequently obtained in Basedow patients, and are attributed to a thyrevotoxic liver effect.

Glucosamine

Biochemical studies on Carbohydrates. III. Micro method for the determination of glucosamine in blood, tissue, and urine.

Kawabe, Kinji

J. Biochem. (Japan) 19, 319-27 (1934)

Micromethods for determination of glucosamine in tissue, blood and urine have been described accompanied by charts and tables to illustrate results.

Glucose

Modification of the qualitative Fehlings test for dextrose in urine.

Plattner, E.

Schweiz. Apoth. Ztg. 71, 499-500 (1933); through Chem. Abs. 27, 5770.

The usual CuO reduction test is used with modifications to rid the sample of albumins.

Glucose

Detection and determination of small quantities of urinary glucose.

Delon, James

Bull. biol. Pharm. 1934, 291-200; through Chem. Abs. 29, 1117.

This test and determination are basically the Fehling method.

Glucose

Determination of urinary glucose

Castilla, Abel.

Bol. soc. quim. peru, 1, 49-50 (1934); through Chem. Abs. 29, 1117.

A modified Fehling's method is described.

Glucose and Lactose

The osazone reaction in glucosuria and lactosuria.

Forti, Guggero

Boll. chim. farm. 72, 802-4 (1933); through Chem. Abs. 28, 2740.

Glucose and lactose are detected in concentrations of 0.02 and 0.05%, respectively, in urine (20 cc. sample) by the Quagliarello and Caponetto method modified by using $PhNHNH_2$-HCl instead of $PhNHNH_2$. The mixed osazones are separated by dissolving out the lactosazone with hot water.

Glucose and Lactose

The identification of glucose (and lactose) with the osazone reaction.

Rossi, A.

Arch. sci. biol. (Italy) 19, 320-6 (1933)

The osazone reaction is very sensitive, 1: 40,000. In biologic fluids such as blood and urine definite results may be obtained in concentrations of 1:20,000.

Glucose and Nitric acid in alcaptonuric urine.

The determination of glucose and uric acid in alcaptonuric urines.

Cassata, Corrado

Diagnostica tec.lab. (Napoli) Riv. mensile 4, 394-6 (1933); through Chem. Abs. 28, 2380.

The homogentisic and trihydroxyphenylpropionic acids present in alcaptonuric urines are extracted with ether before applying the usual quantitative procedures for glucose and uric acid.

Glucose and H_3PO_4

Execution of Certain physiological chemical determinations by means of the color and luminescence Comparator via Rojahns-Heinrice.

Seifert. Rudolf.

Apoth. Ztg. 50, 1079-81 (1935); through Chem. Abs. 29,7365.

The results obtained in the estimation of glucose and H_3PO_4 in urine and blood dyestuff are reported.

Glucuronides

The application to urine of Follen's naphthoresorcinal test for conjugated glucuronides.

Satt, Harold B.

Biochem. J. 29, 2705-9 (1935)

Methods are discussed for the application to urine of Folbus' naphthoresorcinol test for conjugated glucuronides. An improved technic for the urine test is described. It is suggested that the test might be used to indicate increased absorption of intestinal putrefaction products. Using aspirin as a glucuronogenic drug, a method of testing the detoxicatory efficiency of the liver is given.

Gonadotropic substance

The determination of small amounts of Gonadotropic material.

Katzman, Philip A. and Doisy, Edward A.

J. Biol. Chem. 106, 125-39 (1934)

Two methods for the quantitative estimation of small amounts of qonadotropic substances from either urine of pregnancy or gland extracts are described. One is based on tungstic acid precipitation and removal of the tungstate by means of barium or brucine, the other on benzoic acid adsorption.

Glycogen.

New Experiments on the detection and estimation of glycogen in urine.

Cappenberg, Heinrich.

Arch. Pharm. 272, 559-61 (1934)

This test depends upon the reaction of Fehling's solution with glycogen.

Gonadotropic hormone.

A method for detecting small quantities of gonadotropic hormone in the urine of normal persons.

Thomsen, Oluf and Pederson-Bjergaard, Kaj.

Compt. rend. soc. biol. 120, 1143-7 (1935)

One liter of urine is acidified to about pH 4.7 with acetic acid and tannic acid added. After standing overnight at 0° the sediment is collected by centrifuging, then washed with methyl acetate to remove estrin, dried, dissolved in 45 cc. of distilled water, made alkaline to pH 9.5 with borate buffer, and assayed for gonadotropic hormone by injecting different quantities into a series of rats in the usual way.

Histidine

Chemical proof of pregnancy.

Hecksteden, Wilhelm

Deut. Z. ges. Gericht. med. 24, 253-7 (1935); through Chem. Abs. 29, 6263.

The morning urine, after being filtered, is tested for histidine. Results are based upon a color reaction.

Histidine

Bromine water reaction in the study of Histidine. Observations and modifications.

Iojo, Gennaro Dello

Diagnostic tec. lab. (Napoli) Riv. mensile 7, 8-17 (1936); through Chem. Abs. 30, 7605.

The Kapeller- Adler method (C.A. 27, 5360; 28, 54875) is modified from the urine with $MgCl_2$ in alkaline solution with an increase in sensitivity of the test to 1;90,000. The influences of other substances on this test are discussed.

Histidine

A new pregnancy test. Demonstrating the presence of histidine in the urine of pregnant women.

Renton, H.

S. African Med. J. 9, 441-3 (1935); through Chem. Abs. 29, 7438.

This test depends upon a special color reaction with histidine. Histidine is not a regular constituent of urine during early pregnancy.

Hormones of Hypophysis

Determination of the hormones of the hypophysis in human urine and its significance as a function test for some endocrine glands.

Aron, Max

Bull. Acad. Med. 111, 273-83 (1934); through Chem. Abs. 28, 5486.

The thyroid-stimulating hormone is found by injecting for 3 days 5 cc. of urine in guinea pigs of 150-200 Gm. wt. The histological examination of the thyroid on the fourth day shows the stimulating effect.

Hydroxyphenylpyruvic acid

Deamination of amino acids in the animal organisms.

Kotake Y. Sr., Kotake, Y. Jr. and Laniguchi, I.

J. Biochem. (Japan) 18, 395-415 (1933); through Chem. Abs. 28, 795[1].

Feeding experiments with tyrosine show that under physiological conditions this substance is converted in the organism chiefly to hydrophenyllactic acid, so the the deamination is partly hydrolytic and partly oxidative.

Imidazoles

Determination of imidazoles in urine, feces and serum.

Loeper, M., Lesure, A. and Thomas, A.

Bull. soc. Chim. Biol. 16, 1385-1409 (1934); through Chem. Abs. 29, 1117.

A colorimetric method based on Pauly's reaction is described. Histidine, histamine and their degradation products are determined as a group and expressed as equivalent to that number of mg. of histamine-HCl per liter producing the same color. The method will not detect less than 6 mg. per liter.

Indican

Colorimetric determination of urinary indican by means of ninhydrin.

Kumon, Teki

J. Physiol. Chem. 231, 205-7 (1935); through Chem. Abs. 29, 2988.

When indoxyl and ninhydrin are warmed in the presence of dilute HCl, they condense to form a deep red dye, soluble in most organic solvents but insoluble in cold H_2O. This reaction may be used for the determination of urinary indican.

Indican

Indican Determination in Urine

Szajna, Mieczslaw

Munch. Med. Wochschr. 82,1795 (1935); through Chem. Abs. 30, 4187.

Ten cc. of urine was mixed with 10 cc. of concentrated HCl. From 2 to 3 cc. of 3% H_2O_2 was added dropwise. After swinging the tube gently, in pendulum motion, until there was a 2-3cc. zone of mixed reagents, a blue color appeared when indican was present.

Indican, urorosein, phenols, etc.

The demonstration of decay substances (indican, urorosein, substance giving the Thormahlen reaction, phenols, etc.) in the urine.

Weiss, M.

Wochschr. Klin. 13, 1654-6 (1934); through Chem. Abs. 29, 1117.

A review of the methods available for the detection in the urine of the products of protein decay in the intestine.

Indoxyl

The "indoxymeter" and its use in the laboratory.

Gregant, A.

Bull. biol. pharm. 1935, 146, 149-52.

The indoxymeter consists of a set of cells containing permanent color standards. It is used in determining indoxylemia and indoxyluria.

Iodine

Detection of iodine in urine.

Mattis, H. and Mandrysch, E.

Arch. Pharm. 271, 174-7 (1933)

No distinction is made between organic and inorganic iodine compounds but rather between those yielding I_2 by the action of oxidizing agents and those unaffected by the same.

Iodine

Blood Iodine Tests III. A simple reservoir buret for making microtitrations.

Phillips, Francis J. and Curtis, Geo. M.

J. Lab. Clin. Med. 19, 896-8 (1934)

The buret described has been in use in the iodine laboratory for several months and measurements of 0.002 cc. have been accurately and conveniently carried out.

Iron (Fe)

The determination of iron in biological materials

Klumpp, Theodore G.

J. Biol. Chem. 107, 213-23 (1934)

A procedure for the determination of iron in blood, food, feces and urine is given. The method of Knecht and Hibbert for the determination of iron by means of oxidation-reduction titration with titanium trichloride or sulfate is modified and adapted to biological materials.

Lactose

Test for lactose in urine.

Gootz, R. and Lunger, H.

J. Physiol. Chem. 217, 28-32 (1933)

The sample is tested for reducing power before and after incubation with $KMnO_4$. The increase in reducing power is due to hydrolysis of lactose.

Lactose

Identification of lactose in urine, either alone or associated with glucose.

Martin, F. Moreno and Sebastian, Ana.

Anales soc. espan. fis. quim. 33, 931-6 (1935); through Chem. Abs. 30, 3456.

Lactose in urine is identified by the color which it gives when heated with ammonia. To separate lactose from glucose, the lactose is absorbed with animal charcoal, and the glucose is determined in the filtrate by Fehling's solution.

Lead

Dithizone methods for the determination of lead.

Clifford, P.A. and Wichmann, H.J.

J. Assoc. Official Agr. Chem. 19, 130-56 (1936).

1. Some physical properties of dithizone are presented, and the mechanism of the lead dithizone reaction is discussed.

2. Dithizone methods are classified and certain inherent errors are indicated.

3. The "mixed color" dithizone method, previously applied to the determination of lead as spray residue on fruits only, is modified to make it more generally applicable.

4. A photometric method of measuring the color, which increases the sensitivity and accuracy of dithizone methods for lead, is presented.

Lead

The Approach to spectroscopic Analysis.

Dick, James

Can. Chem. Met. 20, 247-9 (1936)

The necessary apparatus, general methods, preparation and use of an internal standard are outlined. Determination of lead in urine and in tin alloys containing lead, and applications of spectroscopic analysis in analyxing for minor impurities are indicated.

Lead

Application of Diphenylthiocarbazone (Dithizone) to the estimation of lead in urine.

Morton, F.

Analyst 61, 465-71 (1936)

Results of experimentation are tabulated to show the consistency attainable.

Examination of the recorded recovery experiments discloses that there is a loss of Pb during the process except when the amount of lead added is small. It also appears that the magnitude of the error increases as the amount of lead to be removed increases. It's very probable that incomplete precipitation of lead with phosphate at the first stage of the procedure and some loss of Pb by volatilization during ashing, are the chief factors responsible for these errors.

Lead (Pb)

Spectrographic determination of lead in urine

Cholak, Jacob

J. Am. Chem. soc. 57, 104-7 (1935)

This method is applied when chemical methods fail because of such minute quantities. Lead in such dilute solutions as 1 to 100 million can easily be detected.

Lead (Pb)

The determination of lead in excreta and tissues

Kehoe, Robert A.

Am. J. Clin. Path. 5, 13-20 (1935)

A discussion of the extraction, collecting, and ashing are given. Spectrographic analysis is recommended for determination of Pb in tissues.

Lead (Pb)

Normal absorption and excretion of lead.

Kehoe, Robert A., Thamann, Frederick, and Cholak, Jacob.

J. Am. Med. Assoc. 104,90-2 (1935)

Figures are given from experimentation on a group of medical students.

Lead (Pb)

The electrolytic determination of minute quantities of lead in lead poisoning.

Schmidt, P., Necke, Albert, and Miller, Hubert.

Angew. Chem. 48, 259-61 (1935); through Chem. Abs. 29, 5385.

The Pb is anodically precipitated and determined colorimetrically.

Lead Pb

A new method for the detection and estimation of minute amounts of lead in biological materials.

Ross, John R. and Lucas, Colin C.

Can. Med. Assoc. J. 29, 649-50 (1933)

Details are given for the extraction and colorimetric determination of Pb.

Lead (Pb)

Spectrographic determination of lead in biological materials.

Cholak, Jacob

Ind. Eng. Chem. Anal. Ed. 7, 287-90 (1935); through Chem. Abs. 29, 7366.

New developments of a previously used method are described.

Lead

Lead poisoning and lead detection.

Bohmenkamp, H. and Linneweh, W.

Deut. Arch. Clin. Med. 175, 157-69 (1933); through Chem. Abs. 27, 5680.

Improvements are described in the diphenylthiocarbazone method for the detection of lead.

Lead

Normal absorption and excretion of Lead (Lead absorption and excretion in primitive life.)

Kehoe, Robert A., Thamann, Frederick, and Cholak, Jacob

J. Ind. Hyg. 15, 257-272 (1933); through Chem. Abs. 28, 2376.

II. Lead absorption and lead excretion in Modern Amer. life. Ibid. 273-288.

III. The Sources of normal lead absorption. Ibid. 290-300.

IV. Lead absorption and excretion in infants and children. Ibid. 301-5.

Explanations and results of experiments performed in Mexico are given.

Lead (Pb)

A Method for the determination of minute amounts of lead in urine.

Ross, John R. and Lucas Colin C.

J. Biol. Chem. 111, 285-97 (1935)

A microcolorimetric method is reported for the determination of small amounts of lead in urine.

The method is applicable for use in a clinical laboratory, since the time required for a determination is reduced to three hours.

The procedure may be readily applied to the urine of young children where only small samples are available.

Lead (Pb)

The lead content of human tissues and excreta

Tompsett, Sidney L. and Anderson, Alan B.

Biochem. J. 29, 1851-64 (1935)

1. An accurate method is described for the estimation of lead in human tissues, blood and excreta. After ashing, the lead is extracted with ether as a complex with sodium diethyldithiocarbonate. The lead in the ether extract, after destruction of the organic material is determined colorimetrically with diphenyl-thiocarbazone.

2. The mean daily excretion of lead by ten patients was 0.05 mg. for urine and 0.22 mg. for feces.

Lead (Pb)

Determination of lead in the urine of healthy and lead-poisoned individuals with the use of diphenylthiocarbazone.

Behrens, B. and Laeger, H.

Z. ges. exptl. Med. 96, 282-303 (1935); through Chem. Abs. 29, 6912.

In a modification of a method of Sielkopf and Laeger diphenylthiocarbazone is used in determinations of lead in urine.

L-Xyloketose

A simple method for the detection and estimation of l-xyloketose in urine.

Lasker, Margaret and Enblewitz, Morris

J. Biol. Chem. 101, 289-94 (1933)

A simple test for l-xyloketose in urine is developed from a study of several cases of pentosuria where carroborative chemical tests have proved the sugar to be l-xyloketose. Where very small amounts of pentose are suspected or where doubt exists, an increased elimination of pentose can be brought about by pyramidon medication.

Magnesium (Mg)

A note on a closed titration flask for use in the bromometric determination of magnesium with 8-hydroxyquinoline. Application to the estimation of magnesium in tissues and urine.

Greenberg, David M., Anderson, Carl and Tufts, Elma V.

J. Biol. Chem. 111, 561-5 (1935)

Apparatus is illustrated and the details of this test are carefully explained.

Magnesium

A new rapid micromethod for the determination of magnesium in urine, without preliminary removal of calcium.

Shun- Ichi Yoshimatsu and Mitsuria Hasegawa

Tohoku J. Exptl. Med. 22, 463-6 (1934); through Chem. Abs. 28, 7283.

The test consists of a color reaction with magnesium in which the calcium present does not react.

Male sex hormones

Preparation of nontoxic urine fractions for assay of male hormone by the female bitterling test.

Kleiner, Irael S., Weisman, Abner I. and Meshkind, Daniel I.

Science 84, 142 (1936)

In testing urines for hormones by means of the female bitterling, it was found that certain urines were toxic to the fish. The toxic factor is removed by dialysis.

Manganese (Mn)

The diagnosis of industrial poisoning by manganese.

Lerlerq. J.

Arch. Gewerbepath. Gewerbehyg. 5, 340-4 (1935) in Fr.; through Chem. Abs. 29, 6260.

Persons working with large amounts of Mn may be poisoned by the ingestion or inhalation of Mn. The clinical and pathological symptoms are described. The Mn can be determined in the urine by oxidation of the ash with K persulfate in the presence of silver nitrate.

Meconic Acid

Determination of meconic acid in the urine of opium addicts.

Somei To and Keiho Yo

Japan J. Med. Sci. IV. pharmacol. 7, No.1; Proc. Japan Pharmacol. Soc. 6-9 (1933); through Chem. Abs. 29, 6915.

Meconic acid serves as a test for opium addicts since it is eliminated in the urine. Meconic acid is precipitated from urine by $CaCl_2$ and produces a blood-red color with $FeCl_3$.

Mercury

Determination of mercury in air and urine.

Fraser, A.M.

J. Ind. Hyg. 16, 67-77 (1934); through Chem. Abs. 28, 2643.

The acid extract of urine ash is treated with H_2S, the precipitate dissolved in aqua regia, and the Hg precipitated on Fe wire from a solution containing $CuSO_4$ and KCl. The Hg is volatilized in a capillary tube and the diameter of the condensed droplet measured.

Mercury

A new chemical method for the detection of traces of mercury.

Biacalani, G.

Boll. soc. ital. biol. sper. 7, 1421-3 (1932); through Chem. Abs. 27, 2170.

The test is bases upon the reaction of Hg salts with CuI_2 and the formation of the blood-red complex $HgI_2.Cu_2I_2$.

Milk

Determination of urine in milk

Bururiana, Lascar

Lait, 16, 698-705 (1936)

While no case of dilution of milk with urine has been reported, it is thought that this may be due to the difficulty in detecting such dilution. The density and index of refraction of milk containing as much as 30% of urine are not changed. The best test developed is the determination of creatinine since urine contains about 120 times as much as does milk and even a 1% dilution of urine in milk can be detected.

Morphine

Extraction apparatus for opium alkaloids.

Somei To and Keiho Yo

Japan J. Med. Sci, IV, Pharmacol. 8, No. 1, Proc. Japan Pharmacol. Soc. 51-2 (1934); through Chem. Abs. 29, 5516.

A modified extraction apparatus for the recovery of 0.01 mg. of morphine from 200 cc. of urine is described. The apparatus may also be used for the extraction of morphine from solid material.

Morphine

A new technically simple, rapid procedure for the determination of minute quantities of morphine in urine, blood and other biological substances.

Deckert, W.

Arch. exptl. pharmakol. 180, 656-71 (1936); through Chem. Abs. 30, 6404.

The morphine is extracted by means of ethyl acetate and a morphine vanadate molybdium compound is formed which develops a gradual opalescence on precipitation.

Morphine

The determination of morphine in the urine of opium and morphine addicts and the practical application of the reaction.

Somei To.

Japan J. Med. Sci. IV Pharmacol. 8, 93-115 (1935); through Chem. Abs. 29, 6266.

Suspected addicts are readily detected by applying this test to the urine of the suspect.

Morphine

The determination of morphine in the urine of opium and morphine addicts and the practical application of the reaction.

Somei To and Asho Rin

Japan J. Med. Sci. IV. Pharmacol. 7, No. 2-3 Proc. Japan. Pharmacol. Soc. 11-15 (1933); through Chem. Abs. 29, 6915.

Besides other features this test distinguishes morphine addicts from opium addicts.

Nitrites

Urine infection and proof of nitrite in the urine.

Machold, K.

Med. Klin. 33, 1097-8 (1934); through Chem. Abs. 29, 2593.

The appearance of nitrite in fresh urine is a definite evidence of bacterial infection.

Nitrites

Nitrites in the urine and their importance in the diagnosis of urinary Escherichia Coli infections.

Joeggy, E.

Schweiz Med. Wochschr. 65, 363-6 (1935); through Chem. Abs. 29, 6299.

A reagnet for detecting nitrites in urine is given. Six and 2 tenths grams of a napthylamine, 1 gram of sulfanilic acid and 25 grams of citric acid are ground in a mortar and dried. This powder will detect nitrites in a concentration of 1:5,000,000. The presence of nitrite indicates escherichia Coli infection.

Nitrite reaction

The urine color change in the nitrite reaction.

Keller, A.

Schweiz. med. Wochschr. 65, 786-7 (1935); through Chem. Abs. 30, 2192.

One cc. of urine was mixed with 1cc. M/3 KH_2PO_4 and 1 cc. 2% $NaNO_2$. In a control H_2O was used in place of $NaNO_3$, photometric examination with L50, L47 and L53 filters was made, and the extinction coefficient in relation to the L53 was determined. The color increment in normal urine was small, and no new color was formed.

Nitrogen

Comparison of total nitrogen analyses of urine for one and four day periods.

Kunerth, Bermre L.

Trans. Kansas Acad. Sci. 36, 157-8 (1933).

It is shown that unless it is necessary to know the daily fluctuations in the urinary N, analysis of a composite sample may be used to calculate the daily N. excretion.

Nitrogen (Nitrate-nitrite)

Determination of nitrate-nitrite nitrogen in urine.

Gootz, A. and Lunger, H.

J. Physiol. Chem. 233, 67-74 (1935); through Chem. Abs. 29, 4395.

A gasometric method is described in which 20-50 cc. of urine is placed in the reaction flask, acidified with 80% H_2SO_4 and the air expelled by CO_2 from a Kipp generator. Addition of metallic Hg and vigorous shaking reduce the oxidized N to N_2 which is passed through a heated combustion tube, containing CuO and a Cu Spiral, and collected over 50% KOH in a nitrometer. Uric acid and creatinine do not react and NH_3 from NH_4 salts and amides is retained by the acid.

Opiates

A new method for the demonstration of opiates in the urine of addicts, which is easily applicable clinically.

Panse, F.

Deut. Med. Wochschr. 58, 1444 (1932); through Chem. Abs. 27, 3196.

Details of the operation are omitted.

Oxalic Acid

Serial determinations of oxalic acid in urine.

Koch, Käte

Biochem. Z. 283, 422-32 (1936)

Oxalic acid is determined colorimetrically.

Peptidase

Comparative studies of the determination of peptidase in the urine of human and animal organisms.

Buadze, Severian

Fermentforschung 14, 143-74 (1934); through Chem. Abs. 28, 5480.

Along with pepsin and trypsin, human urine contains peptidases in normal, pathological or experimental conditions.

Percaine

Detection and determination of percaine in urine.

Möller, Knud. O.

Biochem. Z. 259, 458-64 (1933)

Percaine is extracted with water, followed by ether, and is then titrated, after evaporation, with 0.01 N $Na_2B_4O_7$ using methylene red and methylene blue as indicators.

Phenol

Determination of phenol added to blood and urine by reaction with diazotized paranitroanaline.

Barac, G.

Compt. rend. soc. biol. 117, 259-61 (1934); through Chem. Abs. 30,2599.

The following method is applicable to urine: to 20 cc. of urine is added 0.5-2 cc. of aqueous phenol of known titer. To this is added 5 cc. of saturated $Pb(OAC)_2$ solution and 3 cc. of 0.1 N NaOH. The mixture is filtered. An aliquot protion of the filtrate and an equal volume of a saturated aqueous solution of Na_2HPO_4 are combined and filtered. The filtrate is acidified with concentrated HCl and a known volume is extracted 3 times with ether. The ether extract is brought to volume, dried, and examined with the spectrograph.

Phenol (added)

Determination of phenol added to blood and urine by reaction with diazotized paranitroaniline.

Barac, G.

Compt. rend. soc. biol. 117, 259-61 (1934); through Chem. Abs. 29, 1117.

A modification of theis and Benedict's method is described.

Phenolic Compounds

Quantitative Studies on the Absorption and excretion of certain resorcinols and cresols in dogs and man.

Robbins, Benjamin H.

J. Pharmacol. 52, 54-60 (1934)

Phenolic compounds are determined in urine by acidification with H_3PO_4, steam distillation, acidification of the distillate, and extraction with ether and computed colorimetrically.

Phenols

Phenols or imidazoles of the urine.

Marenzi, A.D. and Banfi, R.F.

Anales Farm. bioquim. (Buenos Aires), 7, 3-10 (1936); through Chem. Abs. 30, 6775.

In the colorimetric determination based on coupling with diazotized p-nitroanaline, histidine and other imidazole derivatives give a color similar to that produced by phenols but much weaker. The color obtained with urine is due principally to phenols. Shaking urine with permutit removes all histidine without affecting the phenol content.

Phenols

Determination of Phenols in Blood and urine.

Bonfi, R.D. and Marenzi, A.D.

Anales farm. bioquim. 6, 78-89 (1935); through Chem. Abs. 29, 2192.

Effects of slight variations in the technic of the Theis and Benedict method as modified by Marenzi (C.A. 26, 2479) are discussed.

Phenols

Remarks on the determination of phenols in blood and urine.

Banfi, R. D. and Marenzi, A.D.

Rev. Soc. Argentina Biol. 11, 509-18 (1935); Compt. rend. soc. biol. 120, 812-14 (1935); through Chem. Abs. 30, 2217.

Effects of slight variations in the technic of the Theis and Benedict method as modified by Marenzi (C.A. 26, 2479) are discussed.

Phenols and histidine and its derivatives.

A histidine diazo reaction.

Barac, G.

Compt. rend. soc. biol. 118, 198-200 (1935); through Chem. Abs. 29, 2989.

The diazotized p-nitroanaline reaction for phenols in blood and urine previously described also gives a similar color with histidine and its derivatives under the same conditions; hence its use is limited.

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pH

Method for the photometric measurement of urinary pH.

Reding, Rene

Compt. rend. soc. biol. 114, 187-9 (1933); through Chem. Abs., 28, 499.

No information.

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pH

Determining pH with the glass electrode

Wolfers, D.

Bull. soc. Chim. biol. 17, 1559-72 (1935); through Chem. Abs. 30, 1639.

The Mortontype glass electrode gives excellent results with all concentrations of HCl and HNO_3 less than 2 N. With undiluted human urine the glass electrode gives values 0.1 - 0.2 pH unit lower than those determined with the quinhydrone electrode. When urine is diluted with 3 volumes of redistilled water the pHincreases 0.1 - 0.3 unit as determined by the glass electrode or 0.1-0.24 unit as determined by the quinhydrone electrode.

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pH of glomerular urine

A microquinhydrone electrode; its application to the determination of the pH of glomerular urine of Necturus.

Pierce, J.A. and Montgomery, High

J. Biol. Chem. 110, 763-75 (1935)

A microquinhydrone electrode has been constructed with which reliable determinations of pH can be made with 0.1 c mm. of fluid or less. It can be inserted through or into tissues without contamination, and escape of CO_2 from the fluid which is brought into contact with it is prevented. Its accuracy is of the same order as that of the ordinary quinhydrone electrode.

It finds usefulness in the pH determination of glomerular urine.

Phosphoric Acid

Gasometric microdetermination of phosphoric acid.

Kirk, Esben

J. Biol. Chem. 106, 191-201 (1934)

Phosphoric acid is determined by precipitation with strychnine molybdate and wet combustion of the precipitate by gasometric methods. The phosphorus content is calculated from the carbon content of the sample. The method is applicable to analyses of samples containing 0.005 to 0.02 mg. of phosphorus.

Phosphorus

Note on the determination of the total phosphorus as well as the organic and inorganic phosphorus by means of the Fulfrich step photometer.

Urbach, Carl

Biochem. Z. 268, 457-60 (1934)

Corrections are given for this test which give better results.

Phosphorus

The microdetermination of phosphorus (inorganic, acid-soluble, lipoid and total) in the blood and excretions.

Ferranti, F. and Grannetti, O.

Diagnostica tec. lab.(Napoli) Riv. mensile 4, 664-82 (1933); through Chem. Abs. 28, 2380.

The Bell and Cloisy test is modified to decrease the qunatity of acid present in the liquid after destruction of the organic matter. This is accomplished by adding 5 cc. of a 45% aqueous solution of sodium acetate for each cc. This modification makes it unnecessary, in the determination of total and lipoid phosphorus to convert the sample into ash by the dry method, thus permitting the use of the Neumann wet method.

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Urbach, Carl

Biochem. Z. 268, 457-60 (1934)

Corrections are given for this test which give better results.

Phosphorus

The microdetermination of phosphorus (inorganic, acid-soluble, lipoid and total) in the blood and excretions.

Ferranti, F. and Grannetti, O.

Diagnostica tec. lab.(Napoli) Riv. mensile 4, 664-82 (1933); through Chem. Abs. 28, 2380.

The Bell and Cloisy test is modified to decrease the qunatity of acid present in the liquid after destruction of the organic matter. This is accomplished by adding 5 cc. of a 45% aqueous solution of sodium acetate for each cc. This modification makes it unnecessary, in the determination of total and lipoid phosphorus to convert the sample into ash by the dry method, thus permitting the use of the Neumann wet method.

Phosphorus (P)

A rapid method of preparing biological materials for phosphorus determinations.

Gerrity, H.W.

Ind. Eng. Chem. Anal. Ed. 7, 116-18 (1935); through Chem. Abs. 29, 3362.

The addition of $HClO_4$ during the wet ashing of 25 cc. of urine or 2 Gm. of feed reduces the digestion time from 1 to 2 hours to 15 minutes. Phosphorus can be determined on the digest volumetrically, gravimetrically, or colorimetrically without interference or loss in accuracy.

Photodynamic substance

Method for detection of photodynamic substances in urine.

Perutz, A. and Lustig, B.

Wien. Klin. "ochschr. 46, 1579-80 (1933); through Chem. Abs. 29, 3362.

Nothing given.

Porphyrius

Analysis of feces for blood degradation products in diseases of the gastrointestinal tract.

Boas, C.

Arch. Verdanungs-Krankh. 58, 249-67 (1935); through Chem. Abs. 30, 4526.

Porphyrius are determined in urine by conversion to the iron porphyratins, extraction with $ChCl_3$, oxidation of the evaporated extract with $KClO_3$ and HCl, and colorimetric determination of the resulting ferric iron as the thiocyanate.

Porphrins

Clinical studies on porphysin excretion with a quantitative spectroscopic method.

Lageder, Karl

Arch. Verdanungskrankl. 56, 237-56 (1934); through Chem. Abs. 29, 5505.

The daily urinary excretion of Coproporphyrin by human beings is 0.01 - 0.06 mg. Increased secretion was found in liver Cirrhosis, icterus, lead poisoning and febrile cases of pulmonary tuberculosis. There was no increase in cases of hemolytic jaundice or Addison's disease.

Porphyrins

Quantitative spectrophotometric methods for the determination of porphyrius.

Vigliani, Enrico

Diagnostic tec. lab. (Napoli) Riv. Mensile 5, 624-54 (1934); through Chem. Abs. 29, 2988.

Existing methods are critically reviewed. Solutions of porphyrins in HCl were examined. Coporporphyrine and protoporphyrin were very unstable in HCl. A differential spectrophotometric method for urinary porphyrins is described, and this is compared with the fluorometric method reported previously.

Porphyrins

Qualitative test for porphyrin in urine.

Brugsch, Joachim F

Munch. med. Wochschr. 81, 1546-7 (1934); through Chem. Abs. 29, 1120.

Ten cc. of urine and 2 cc. of glacial acetic acid are extracted with 20 cc. of diethyl ether. The ether layer is extracted with 5 cc. of 5% HCl. A red fluorescence of the acid extract in ultra-violet light is a positive test for porphyrin.

Porphyrin

Detection and determination of urine porphyrin content

Thiel, Wolfgang

Klin. Wochschr. 13, 700-3 (1934); through Chem. Abs. 28, 6750.

The determination is carried out by means of a color reaction in ultra-violet light.

Potassium (K)

Methods for determining potassium in body fluids.

Jendrassik L. and Lalsaca, F.

Biochem. Z. 274, 194-9 (1934); through Chem. Abs. 29, 1124.

Detailed methods are described by which potassium may be determined colorimetrically, gravimetrically and volumetrically.

Protective Enzymes

Simplication of the proof of protective Enzymes in urine.

Abderholder, Emil.

Fermenlforschung 15, 93-120 (1936); through Chem. Abs. 30, 7606.

The digest of substrate and specific enzyme is heated in an oven at 100°C. with ninhydrin and observed through a glass door. Other technical details are given for carrying out the Abderholder reaction.

Berglund Hilding and Scriver, Walter deM.

Acta Med. Scand. 86, 85-7 (1935); through Chem. Abs. 30, 127.

Detailed directions for laboratory experimentation are given.

Protein

A New protein test in human urine.

Hirohata, Ryazo; Shimakawo, Hachiwo and Kamizawa Osamu

Biochem. Z. 264, 126-30 (1933); through Chem. Abs. 27, 5360.

This test depends upon the precipitation of the protein with flavianic acid which causes a yellowish flocculent precipitate, the quantity depending on the concentration of protein in the sample.

Protein

Testing urine for protein with sulfosalicylic acid paper.

Wahl, F.A.

Münch. Med. Wochschr. 81, 1090 -1 (1934); through Chem. Abs. 28, 6167.

Strips of filter paper soaked in 20% sulfosalicylic acid and dried produce a precipitate in urines containing proteins.

Protein

A test for protein in urine.

Lipp

Münch. med. Wochschr. 81, 1469 (1934); through Chem. Abs. 29, 1120.

Powdered m-dihydroxybenzene is used to produce a turbidity in urines containing protein.

Protein (heat soluble)

The so-called Bence-Jones heat-soluble proteins.

Truhout, Rene

J. Pharm. Chim. 21, 75-86, 119-36, 159-70 (1935); through Chem. Abs. 29, 7361.

Heat soluble urinary proteins are coagulated at 50-60°C. are redissolved by further heat, and reprecipitated on cooling. The literature of the reaction is reviewed and conditions influencing the reaction are discussed.

Pyruvic Acid

Determination of pyruvic acid in urine.

Sufier, A. pi. and Farran, M.

Biochem. Z. 287, 113-14 (1936); through Chem. Abs. 30, 8280.

Pyruvic acid is precipitated from urine by means of dinitrophenylhydrazine-HCl.

Quinic Acid

Estimation of Quinic Acid.

Meissiner-Klebermass, Luise, Kretschmayer, Richard and Molnac, Stefan.

Scientia pharm. 7, 58 (1936); through Chem. Abs. 30, 5364.

A method is suggested for the determination of quinic acid both for the pure solution and for urine as the solvent medium.

Quinine

Detection of Quinine in urine by the erythroquinine reaction.

Monnet, R.

J. Pharm. Chim. 18, 94-6 (1933); through Chem. Abs. 27, 5362.

Quinine

Use of Mayer's reagent for the detection of quinine in alkaline urine.

Field, J.W. and Kandiah, M.

Trans. Roy. Soc. Trop. Med. Hyg. 28, 385-90 (1935); through Chem. Abs. 29, 4036.

Mayer's reagent is modified by the addition of acetic acid, which insures the precipitation of albumin and quinine in clinically significant amounts, since the reagent as ordinarily used may fail to detect quinine in alkaline urine.

Recording Results of

Formulary for urine analysis.

Becker, Karl

Apoth. Ztg. 29, 573-6 (1934); through Chem. Abs. 28, 4760.

A formulary is suggested for recording the results obtained in the examination of urine, in connection with the apparatus employed for the purpose.

Renal disorders

A rapid quantitative method for examining the urine in renal disorders.

Gibbons, Henry, III.

Arch. Internal. Med. 54, 758-63 (1934); through Chem. Abs. 29, 1445.

The method can be applied "without bothering with numerical values and calculations".

Salicylates

Enteric Coatings II. Excretion studies with sodium salicylate tablets.

Wruble, Milton

J. Am. Pharm. Assoc. 24, 1074-7 (1935).

1. Several modifications of the Thoburn-Hanzlik method for the determination of salicylates in urine are outlined.

2. The results indicate a close agreement between the quantities of salicylate excreted in the coated and uncoated tablets. Since no gastric irritation was reported, this is an indication of the effectiveness of the enteric coating.

3. The average recovery following the ingestion of 15 grains of salicylate appears to be approximately 30%.

Salicylates

A clinical method for the determination of salicylates in body fluids.

Ontaneda, Luis, E. and Ferloni, Angel V.J.

Rev. Soc. Argentina Biol. 11, 474-81 (1935); Compt. rend. soc. biol. 120, 820-2 (1935); through Chem. Abs. 30, 22174.

The method described is the diazotized p-nitro-analine method of Theis and Benedict as modified by Marenzi (C.A. 26, 2479). One per cent of a mg. of sodium salicylate in blood or urine can be determined. Where small amounts of sodium salicylate were added to blood, 70-85% of the amount added was found on analysis. Some other methods are briefly discussed.

Selenium

Determination of selenium. Determination on animal matter and clinical test in urine.

Dudley, H.C. and Byers, H.G.

Ind. Eng. Chem. Anal. Ed. 7, 3-4 (1935); through Chem. Abs. 29, 1358.

Details are given for application of various methods.

Silica

The presence of silica in tissues.

King, Carl J., Stantial, Helen and Dolan, Margery

Biochem. J. 27, 1002-6;

A considerable excretion of silicate occurs through the kidneys. The silicate level of the urine of herbivora is much higher than that of carnivora. The amount of silica appearing in the urine is markedly influenced by diet.

Sodium

A micromethod for the determination of sodium.

Weinbach, Ancel P.

J. Biol. Chem. 110, 95-9 (1935);

A micromethod for the determination of sodium in body fluids and urine is described.

The method is based on the precipitation of sodium in alcoholic medium, as the triple salt, uranyl zinc sodium acetate; subsequently, the precipitate, which is entirely soluble in water, is titrated with NaOH, the reaction depending on the formation of the amphoteric hydroxides of uranium and zinc.

Sodium

A simple sedimentary determination of sodium in urine for practical nutrition questions with man and beast.

Brouwer, E.

J. Physiol. Chem. 241, 135-41 (1936).

The urine is freed from phosphates by means of CaO and the sodium is precipitated with the uranyl zinc acetate reagent.

Sodium Nitroprusside and Acetonuria.

Same.

Sas, Raurich, F.E.

Anales Soc. espan. fis quim. 32, 185-232 (1934); through Chem. Abs. 28, 4095.

A modification of the Engfeldt method is described.

Soporifics

The determination of soporifics in urine, particularly in cases of their misuse.

Oettel, H.

Deut. med. Wochschr. 62, 1457-62 (1936); through Chem. Abs. 30, 2595.

It is difficult to determine exact amounts of barbituric acid derivatives in the urine, and if determination were perfected, it would give no indication of barbital intoxication since the barbiturates are so widely used.

Strychnine

Detection and estimation of strychnine in urine.

Noetzel, O.

Pharm. Zentralhalle 74, 205-11 (1933).

A shortened procedure for the detection of strychnine in urine is described and its accuracy checked by titrimetric estimations.

Sugar

A new simplified method for sugar determination in urine (without heating).

Oefelein,

Med. Klin. 48, 1600 (1934); through Chem. Abs. 29, 2565.

Glycocord, a new Bi reagent for sugar determination, is chemically very complicated. A drop of urine and a drop of reagent are mixed by means of capillary tubes and the presence of sugar is demonstrated by the rapid appearance of an intensive black color in the reagents.

Sugar

A simple and rapid Nylander test.

Scheringa, K.

Pharm. Weekblad. 72, 194 (1935); through Chem. Abs. 29, 2988.

The Nylander test for sugar is more delicate when the reagent is precipitated with 50% instead of 10% NaOH and the KNa tartrate omitted. The test is then performed by warming 1 drop of urine with a few drops of the reagent and is positive with 0.1% sugar.

Sugar

Rapid determination of glucosuria.

Lang, Stefana

Minerva Med. 1935, I, 260 - 2; through Chem. Abs. 29, 3025.

The faults of the Lang modification of the Fehling test are pointed out and a new test given. A mixture of 1 cc. of concentrated H_2SO_4 and 0.5 cc. of 5% acoholic solution of gallic acid is shaken for 30 seconds, added to 1 cc. of urine and again shaken 30 seconds. To this brownish-red solution is added 7 cc. of freshly prepared $KMnO_4$ solution and the final color is golden yellow. The time required for the formation of the color is an indication of the amount of glucose present.

Sugar

Application of the iodo-thiocyanate procedure in the estimation of sugar in urine.

Tchirch, E. and Kruger, D.

Pharm. Ztg. 80, 695-6 (1935); through Chem. Abs. 29, 6261.

The chemistry of the procedure is discussed in connection with its execution and observations on its accuracy.

Sugar

The Cole process for determining urinary sugar; its application to the determination of galactose to prove induced galactosuria.

Kayser, F. and Masius, N.

J. Pharm. Chim. 20, 257-63 (1934); through Chem.Abs. 29, 3702.

The Cole method and Cole's empirical formula for calculating the glucose content in urine are modified in order to render the method sensitive to 10,5 and even 1 Gm. per liter. By this method no reoxidation need be feared as in cupric reduction methods. The method is also exact for galactose added to urine, and is superior to the polarimetric method.

Sugar

Detection of sugar in urine by a dry color reaction. An improvement in the qualitative method.

Grossman, Walter

Z. Urol. 29, 41-2 (1935) through Chem. Abs. 29, 3701.

A drop of urine is added to a small particle of the reagent, Glucocord, which is a powder containing an alkali, a bismuth salt, an absorptive compound, and a catalyst. A black coloration indicated the presence of sugar.

Sugar

Determination of urine sugar by calorimetric means.

Lanz, Werner.

Schweiz. med. Wochschr. 63, 1289-91 (1933); through Chem. Abs. 28, 3096.

The increase in temperature on mixing the sugar solution with powdered Na_2CO_3 and $KMnO_4$ is compared with a control with water. The difference in temperature is proportional to the sugar concentration.

Sugar

Use of Benedict's solution for the micro detection of sugar in urine and other solutions.

Lauber, Henry

Mikrochemie, 14, 169-70 (1934); through Chem. Abs. 28, 2645.

Clear or filtered urine is placed in a tiny test tube and 0.5 cc. of Benedict's solution added. As little as 0.1% glucose is detected in a sample of 0.05 cc.

Sugar

Determination of Sugar in urine.

Kinpin, L.

Med. Klin. 27, 1793-4 (1932); through Chem. Abs. 28, 4087.

Five cc. of urine, diluted if necessary, is boiled with 1 cc. of Nylander's reagent until blackening is complete, the time taken being determined and the % of glucose read from a diagram.

Sugar

Reagent for detecting sugar in urine.

Leti, Francesco.

Ger. 567, 116, April 29, 1931; through Chem. Abs. 27, 1376.

$Bi(NO_3)_3$ is dissolved in fused NaOH 100 parts, and the product is powdered or made into tablets. The product is used in the powder form in the cold, and gives a black color with urine containing sugar.

Sugar

A potentiometric adaptation of the Shaffer- Hartmann sugar method.

Ney, Luman F. and West, Edward, S.

J. Biol. Chem. 114, 547-50 (1936).

A potentiometric adaptation of the Shaffer-Hartmann sugar method is developed. It is applicable to pure sugar solutions, iron and zinc filtrates of blood, and ferric sulfate- Lloyd's reagent filtrates of urine.

Sugar

Analytical uses of Nessler's reagent. Detection of aldehydes. Determination of glucose.

Goswami, I.M., Das-Grysta, H.N. and Ray, K.L.

J. Indian Chem. Soc. 12, 714-18 (1935); through Chem. Abs. 30, 2132.

In general, ketones do not reduce Nessler's reagent but most aldehydes do. Hydroxy aldehydes do not cause reduction unless the OH group is protected, but hydroxy ketones, like benzoin and fructose, do. The extent of the reduction of K_2HgI_4 is influenced by the concentration of OH ions and by the temperature. In 10% NaOH and at boiling temperature the oxidation of glucose and fructose corresponds to the absorption of 5 atoms of oxygen. In 10% Na_2CO_3 solution glucose absorbs 2 atoms of oxygen but the oxidation of fructose proceeds further. This method of analysis can be used for determining glucose in urine.

Sugar

A new rapid and precise method for the determination of reducing sugars.

Solomos, G.I.

Bull. soc. Chim. biol. 17, 1465-9 (1935); through Chem. Abs. 30, 1081.

A measured quantity of standard $K_3Fe(CN)_6$ solution is made alkaline with NaOH, then heated to boiling and the sugar solution (blood, spinal fluid, urine or milk, suitable defecated and diluted) added dropwise from a buret until the $K_3Fe(CN)_6$ is just completely decolorized by reduction to $K_4Fe(CN)_6$. The $K_3Fe(CN)_6$ solution is checked against a standard solution of pure glucose.

Sugar

The determination of the sugar content of urine.

Materna, Gerhard, F.

Med. Klin. 29, 259-60 (1933); through Chem. Abs. 28, 2743.

No information.

Sugar, Apparatus for

Apparatus for estimation of the sugar content of urine and other liquids by fermentation.

Hoffmann, Felix and Strebinger, Robert.

Austrian 139, 609, Nov. 26, 1934; through Chem. Abs. 29, 2568.

The apparatus for experimentation is described and illustrated.

Sugar, Apparatus for

Device for detecting sugar in urine.

Formet, Walter

Ger. 295, 923, Feb. 19, 1934 (Cl. 42 l. 3.54); through Chem. Abs. 28, 3437.

A substance giving out O and heat, such as a mixture of NaOh and Bi_2O_3, is enclosed in a capsule which is perforated by a needle and inserted into the urine. The presence of sugar is indicated by a black discoloration of the white Bi_2O_3-NaOH powder at the perforation.

Sulfate

A colorimetric method for the determination of inorganic sulfate in serum and urine.

Letonoff, L.V. and Reinhold, John G.

J. Biol. Chem. 114, 147-56 (1936).

A convenient colorimetric procedure for the determination of sulfate in serum and urine, based on the color producing reaction between benzidine sulfate and sodium b-naphthoquinone-4-sulfonate, is described. Phosphate and proteins are removed preliminary to analysis by the use of uranium acetate solution.

Sulfate

An improved colorimetric method for determining sulfate in serum and urine adaptable to the determination of sulfate clearance.

Letonoff, T.V. and Reinhold, J.G.

Am. J. Med. Sci. 188, 142 (1934).

Sodium betanaphthoquinone-4-sulfonate develops an intense stable color with benzidine. This is used in reacting benzidine sulfate with this reagent in the presence of Na_3BO_3-NaOH buffer.

Sulfates

Indirect colorimetric semimicrodetermination of the sulfate anion.

Goin, F.A.

Anales farm. bioquim. (Buenos Aires) 5, 61-8 (1934); through Chem.Abs. 30, 6775.

The color reaction between benzidine and AcOH-$NaNO_2$ in EtOH is applied to the determination of the sulfate anion (SO_4^{--}) in urine.

Sulfates

A plant study of sulfate determination in urine as a measure of benzene exposure.

Yant, W. P., Schrenk, H.H. and Patty, F.A.

J. Ind. Hyg. Toxicol. 18, 349-56 (1936);

A decrease in the % of inorganic SO_4^{--} in the urine of persons exposed to benzene vapor was found. This finding is similar to that previously observed in animal experiments. The sulfate response occurs in advance of anemia and leucopenia or other manifestations of poisoning, and also tends to parallel the benzene concentration in the air.

Sulfates

Setermination of Sulfate. A study of the conditions necessary for the precipitation of benzidine sulfate, with special referrence to the estimation of sulfates in urine.

Owen, Edwin C. -

Biochem. J. 30, 352-60 (1936).

In aqueous medium benzidine sulfate, has a minimum solubility at pH 2.75 ± 0.3. It is therefore desirable to obtain this pH when working on precipation of benzidine sulfate. The interference of phosphates and chlorides to this analysis is discussed.

Sulfur (S)

Simplification of the gravimetric determination of neutral sulfur in urine.

Friedrich, A. and Mandl, F.

Z. Physiol. Chem. 235, 174-80 (1935).

Further experience with the Friedrich and Bauer method shows that the neutral sulfur determination was not reliable. The difficulties are overcome by use of dilute HCl for hydrolysis and the use of wood charcoal to remove certain impurities.

Sulfur (neutral)

The neutral sulfur of urine. Criticism of the iodometric titration of diethyl sulfide.

Medes, Grade, Evangelides, Kively, and Shinohara, Kamenosuke.

Proc. Soc. Exptl. Biol. Med. 32, 156-7 (1934); through Chem. Abs. 29, 1845.

The amount of iodine taken up at a constant temperature by diethyl sulfide is the function of the concentrations of iodine, iodine ion, and H ion, in addition to the amount of diethyl sulfide added. There is no such chemical relation under the experimental conditions as expressed by the equation: $Et_2S + I_2 = Et_2SI_2$. The analytical method based on this erroneous principle is unreliable.

Sulfur (total and neutral)

Determination of total sulfur and neutral sulfur in urine.

Friederick, A. and Bauer, E.

J. Physiol. Chem. 228, 61-76 (1934); through Chem. Abs. 29, 1115.

The procedure for total S consists essentially in oxidation of the urine (1 cc.) by Br and HNO_3, precipitation of the sulfate with benzine-HCl salt, and titration of the precipitate to methyl red after boiling with KI.

For determination of neutral S, the urine (10 cc.) is evaporated with NaOh, the residue boiled with HCl and the sulfate removed by precipitation with $BaCl_2$. Determination of total S in the filtrate by the above method gives the neutral S.

Teaching

Teaching urinalysis to students of pharmacy.

Greene, Antoine E.

J. Am. Pharm. Assoc. 24, 414-17 (1935).

A general discussion is given with arguments pro and con.

Thiocyanate

Evaluation of the Rupp-Schied-Thiel method as a test for thiocyanate in the urine.

Sullivan, M.X. and Hess, W.C.

J. Wash. Acad. Sci. 23, 419-25 (1933).

A thorough discussion of the method is given with corrections in the procedure to obtain more accurate results.

Thiocyanate

The estimation of thiocyanate in urine.

Baumann, Emil J. , Sprinson, David B., and Metzger, Nannette.

J. Biol. Chem. 105, 269-77 (1934).

Inorganic thiocyanate in urine is estimated by its reaction with chromic acid whereby hydrocyanic acid is formed. The HCN is removed by aeration, trapped in alkali, and titrated with $AgNO_3$.

Thiocyanate

Cancer: Application of the Rupp-Schied-Thiel thiocyanate reaction to the urine.

Sullivan, M.X. and Hess, W.C.

J. Wash. Acad. Sci. 23, 378-80 (1933).

Connection between the excretion of thiocyanate and related compounds and cancer are discussed.

Thiosulfate

The elimination of thiosulfate and its determination in urine.

Zorkendorfer, Walter.

Biochem. J. 278, 191-4 (1935).

Details for laboratory determination of thiosulfate in urine are given by titration with standard iodine solution.

Thyrotropic hormone

Assay of blood and urine for thyreotropic hormone in thyrotoxicosis and myxedema.

Hertz, Saul and Oastler, Eric G.

Endocrinology, 20, 520-5 (1936).

This method makes use of the pituitectomized rat as the test object, and histological examination of the thyroid glands of the rats is a means of reading the test.

Trimethylamine

Microdetermination of trimethylamine in the urine.

Monasterio, G.

Diagnostica tec. lab. (Napoli) Riv. mensile 6, 564-71 (1935); through Chem. Abs. 29, 8035.

A new method is based on the reaction of other alkylamines with CH_2O and the distillation of trimethylamine into 0.02 N. H_2SO_4 and iodometric titration.

Trimethylammonium bases

Studies on the trimethylammonium bases: III. Trimethylammonium bases in urine.

Lintzel, W.

Biochem. J. 273, 243-61 (1934).

Methods for the determination of total trimethylammonium bases, trimethylasmine and trimethylamine oxide are given.

The reaction is based on converting trimethylammonium bases into trimethylamine and then determining the latter by titration.

Tyrosine

The demonstration and significance of tyrosine in urine.

Weiss, M.

Klin. Wochschr. 15, 521-2 (1936); Through Chem. Abs. 30, 6404.

Tyrosine is precipitated from urine with absolute ethyl alcohol. Interference of urinal proteins is considered.

Urea

A simple and rapid clinical micromethod for the determination of urine urea in one-tenth cc. or smaller amounts.

Asano, Junkichi and Sato, Tatsuo.

Tohoku J. Exptl. Med. 28, 299-303 (1936); through Chem. Abs. 30, 5600.

To one ml of urine is added 1 ml. of 20% sulfosalicylic acid solution. The solution is filtered and 1.2 ml of xanthydrol solution is added to the filtrate. The thickness of the floating precipitate is compared to a standard.

Urea

Determination of urea and ammonia.

Gibbs, Gordon E. and Kirk, Paul L.

Mikrochemie 16, 13-24 (1934); through Chem. Abs. 29, 82.

A simple apparatus and technic are described for the determination of 0.0015- 0.0083 mg. of N. from NH_3 and urea in pure solutions, in blood and in urine.

Urea

Urea determination with Calcium Chloride and bromide.

Gross, Martin

Schweiz. med. Wochschr. 65, 502-3 (1935); through Chem. Abs. 29, 6261.

Urea in protein- free serum or urine can be determined gasometrically in a calibrated Luer syringe. $CaCl_2$ and KBr, which are drawn into the chamber containing the sample, form a hypobromite salt which reacts with urea to form N_2.

Urea

The determination of urea in the urine, with a photo-electric densitometer and a new technic.

Obermer, E. and Milton, R.

Diagnostic tec. lab. (Napoli) Ric. Mensile, 5, 741-52 (1934); through Chem. Abs. 29, 2988.

Furfuraldehyde, $SnCl_2$, and HCl are boiled together and produce a blue color. This color is not produced at 0°C. The addition of urea at 0°C. gives the blue color, the intensity of which is proportional to the concentration of urea.

The densitometer used is described.

Urea

Microdetermination of urea nitrogen in blood serum and urine.

Negro, Georgetto

Diagnostica tec. lab. (Napoli), Riv. Mensile 6, 306-14 (1935); through Chem. Abs. 29, 6263.

A new apparatus consisting of a graduated 1-cc glass capillary tube enlarged at the bottom and there joined to a side tube and also to a rubber tube filled with Hg to maintain the level is used for the determination of N by the Knop hypobromite method.

Urea

Determination of organic substances in the urine. Urea.

Bertanasco, Eraldo

Georn. farm. chim. 84, 76-83 (1935); through Chem. Abs. 29, 6912.

The details of several standard methods are given.

Urea

Microdetermination of urea nitrogen

Zappacosta, Mario

Diagnostica tec. lab. (Napoli) Riv.Mensile 6, 388-96 (1935); through Chem. Abs. 29, 7366.

A colorimetric method is described in which urea can be determined in 0.2 cc. of deproteinized blood, urine or cerebrospinal fluid through the reaction of dixanthydrylurea and phloroglucinol in the presence of trichloracetic acid.

Urea

Micromethod for the determination of urea in blood or urine.

Levinson

Bull. soc. Chem. biol. 17, 1157-62 (1935); through Chem. Abs. 30, 499.

Blood is deproteinized with $ZnSO_4$ and NaOH. A known quantity of NaOBr is added to the blood filtrate or urine and the excess remaining after reaction with the urea determined iodometrically.

Uric Acid

New Volumetric microdetermination of uric acid in urine and blood.

Rusznyats, Istvan and Haty, Ella

Orvosi Hetilap 77, 200-2 (1933); through Chem. Abs. 28, 4089.

Uric acid is precipitated form urine by Ag lactate solution, centrifuged, filtered and the precipitate is dissolved in NaCN solution, the tube being washed with sodium carbonate solution. Five cc. of phosphotungstic acid solution is added. An aliquot part of the mixture is tested with 10% NaOH solution and titrated with 0.01 N $K_3Fe(CN)_6$.

Uric Acid

Method for the simultaneous determination of uric acid in blood and urine.

Thomas, Pierre and Bulgaru-Puscarin, Maria.

Compt. rend. soc. biol. 115, 902-4 (1934); through Chem. Abs. 28, 3434,

An improved method is described based on the method of Flatow.

Uric Acid

Determination of uric acid in urine.

Balatre, P.

J. Pharm. Chim. 22, 120-3 (1935); through Chem. Abs. 30, 4187.

The method of determining uric acid by adding urine to I-Ki solution containing carbon disulfide until the iodine is reduced is liable to serious errors on account of the presence of other reducing substances.

Urobilin

Determination of urinary urobilin by the Terwen method.

Christophe

J. Pharm. Chim. 19, 105-11 (1934); through Chem. Abs. 28, 5092.

The Terwen method gives consistant results and the maximum error is very low.

Urobilin

Urobilin: A practical modification of the technic of the Schlesinger reaction in urine analysis.

Migliaccio, O.M.

Dia. med. 6, 224 (1933); Anales Assoc. Quim Argentina 10 B (1935); through Chem.Abs. 30, 129.

The sample is placed in a centrifuge tube, an equal quantity of 10% solution of alcoholic $Zn(OAc)_2$ is added and the mixture is centrifuged. In the clear portion of the liquid there is a fluorescence when urobilin is present.

Urobilin

Studies on Urobilin. I. Introduction to a series of articles.

Dominico, Georgio and Oliva Guiseppe

Arch. Sci. Med. 29, 553-64 (1935)

Discussion is given on methods of determining, and substances interfering in tests for urobilin.

Urobilin and urobilinogen

Bile pigments I. A study of Ehrlick's test for urobilinogen and Schlesinger's reaction for urobilin.

Naumann, Hans N.

Biochem. J. 30, 347-51 (1936).

The Ehrlich test is discussed as to conditions and interferring substances and a proper technic is presented for its practical use.

A suitable technic is presented so that the Jaffe-Schlesinger test may be used on normal urine.

Urobilin and urobilinogen

Bile pigments III. The determination of urobilin and urobilinogen in urine and feces.

Naumann, Hans N.

Biochem. J. 30, 1021-5 (1936).

The quantitative determination of urobilin and urobilinogen by the method of Terwen is examined and comments as to errors and corrections are given.

Urobilin and urobilinogen

Bile pigments II. A new test for bilirubin in the urine and its use for the detection of bilirubin in normal urine.

Naumann, Hans N.

Biochem.J. 30, 762-4 (1936).

A new test for bilirubin in urine has been described which permits for the first time the detection of bilirubin in normal urine. The test consists of adsorption of urinary pigments on a layer of talc and the production of blue bilicyanin by oxidation with a drop of Fouche's reagent or 10% HNO_3.

Urobilinogen?

The Interference of nitrates in the detection and estimation of urobilinogen in urine.

Bensley, E.K.

J. Lab. Clin. Med. 21-1195-7 (1936).

Attention is drawn to the interferance of nitrites in urine with Ehrlick's reaction for the detection and estimation of urobilinogen. With no infection present, the amount of nitrites is usually so small as not to interfere but with infection due to organisms which can produce nitrites the test is of no value.

In urines containing bile and nitrites a green color is produced upon addition of Ehrlick's reagent.

Uroscopic medicine.

Diagnosis and prognosis during the period of uroscopic medicine.

Weiss, M.

Suddent. Apoth. Ztg., 75, 876-9 (1935); through Chem. Abs. 30, 569.

No material.

Vitamin A

Metabolism of Vitamin A

Przezdyiecka, A.

Wiadomosci Farm. 62, 201-3 (1935); through Chem. Abs. 29, 7413.

A method is given whereby vitamin A is determined in the urine by a color reaction.

Vitamin B.

The B vitamins in human urine.

Roscoe, Margaret H.

Biochem. J. 30, 1053-63 (1936).

Vitamins B_1 and B_2 are estimated in the urine of four subjects, three normal controls and one case of "alcoholic"polyneuritis. Variations of amount of vitamin fed to the amount secreted are estimated. The urine of the subjects during this period was concentrated and fed to rats, the vitamin B_1 activity was estimated by the power of the urines to cure neuritis and the vitamin B_2 activity was estimated by the power to promote growth. Detailed experiments given.

Vitamin B_1.

Vitamins in human nutrition. The excretion of Vitamin B_1 in human urine and its dependence on the dietary intake.

Harris, Leslie J. and Leong, P.C.

Lancet 1936, I, 886-94.

The urinary output of vitamin B_1 is reduced or increased in proportion to the dietary intake.

Vitamin C.

VII. Application of the modified phospho-18-tungstic acid method for the determination of cystine, cysteine and ascorbic acid in urine.

Shinohara, Kamenosuke

J. Biolchem. 112, 709-21 (1936).

This method for differential determinations of cysteine, cystine, and ascorbic acid was tested for its applicability to urinalysis. Good recovery of the three substances added to oxidized urine was obtained.

Vitamin C.

The Chemical nature of Vitamins

Verda, A.

Pharm. Acta. Helv., 2, 168-74, 175-9 (1927); through Chem. Abs. 22, 2194.

A survey of recent work on Vitamins and discussion of the use of Beyssonov's colorimetric reagant for the detection of vitamin C. and the nature of the reaction involved.

Vitamin C.

The determination of the vitamin C content of the urine.

Bezssonoff, N.

Klin. Wochschr. 14, 1364-5 (1935); through Chem. Abs. 30, 3006.

Monomolybdophosphoric acid gives a violet color with vitamin C which is used as a quantitative measure of the latter. The reaction is specific for the vitamin and is due to its dienol grouping.

Vitamin C

Comments on the methods for the determination of ascorbic acid in urine.

Widenbauer, Franz

Klin. Wochschr. 15, 94-5 (1936); through Chem. Abs. 30, 3007.

Nome of the available methods is reliable, as shown by the results obtained in children receiving varying amounts of the vitamin and various diets.

Vitamin C

The chemical nature of vitamins.

Verda, A.

Pharm. Acta Helv. 10, 185094 (1935); through Chem. Abs. 30, 3483.

Recent progress on the chemical nature of vitamins D and C is reviewed. The colorimetric method for determining ascorbic acid in urine by the use of Bezssonov's reagent and hydroquinone in the color standard is given in detail.

Vitamin C.

The determination of ascorbic acid in urine.

Jezler, A. and Niederberger, W.

Klin. Wochschr. 15, 710-11 (1936); through Chem. Abs. 30, 6404.

Ten cc. of urine is acidified with 1 cc. glacial acetic acid, diluted with 100 cc. H_2O, and directly titrated with a solution of dichlorophenolindophenol so prepared that 1 cc. corresponds to 1 mg. of ascorbic acid.

Vitamin C

The Chemical identification of ascorbic acid in urine.

Klodt, W.

Med. Klin. 32, 421-5 (1936). ; through Chem. Abs. 30, 6028.

The iodine titration method is not suitable for clinical purposes. Tellman's colorimetric method, when properly used, is suitable; but none of the present methods is specific for ascorbic acid alone.

Vitamin C

The demonstration of Vitamin C in the urine.

Emmerie, A. and Van Eckelen, M.

Klin. Wochschr. 15, 348-9 (1936); through Chem. Abs. 30, 6804.

Papers by Ammon and Hinsberg are discussed.

Vitamin C

Technic for the determination of vitamin C by the method of Bezssonoff.

Bezssonoff, N. and Stoerr, E.

Z. Vitaminforsch 5, 193-221 (1936); through Chem. Abs. 30, 7606.

Vitamin C in acid solution reduces MoO_3. 17 $WO_3.P_2O_5.24H_2O$ with the production of a permanent violet color characterized by absorption of 575 m u and due to the -COH = COH- group. Reductone, hydroquinone and quinhydrone also give a positive reaction; skatol gives a yellow color, then a precipitate and a violet color, uric acid gives a violet with an impure reagent. Tannins yield a yellow-brown, passing through mauvre to violet. The

step colorimeter or standard colored solutions are used for the determination.

Vitamin C

Methods for the determination of Vitamin C in urine.

Ammon, E.and Hinsberg, K.

Klin. Wochschr. 15, 85-8 (1936); through Chem. Abs. 30, 3007.

The iodine method is unreliable since cevitaminic acid is not the only reducing substance; the indophenol method gives too low results. The method of choice at the present time is the methylene blue technic of Martini and Bonsignore in which the total amount of methylene blue reduced by a sulfosalicylic acid urine filtrate is the index of the content of ascorbic acid.

Vitamin C

Investigation into the pathogenesis of scorbutic dystrophy.

Rohmer, P. and Bezssonoff, N.

Arch. Disease Childhood 10, 319-26 (1935);

Vitamin C can be synthesized in the body of a normal infant up to the age of 11 months. In the scorbutic child the synthesis seems to be inhibited by some pathological condition. A colorimetric method for determining vitamin C in the urine is described.

Vitamin C

Determination of Ascorbic acid.

Zerrari, R. and Buogo, G.

Arch. fisiol. 35, 125-36 (1935); through Chem. Abs. 30, 4887.

Twenty cc. of urine is diluted 5 times with water; ten cc. of 20% $Hg(OAc)_2$ solution is added. The mixture is shaken and filtered. To the filtrate is added 2 or 3 Gms. of powdered Zn. It is allowed to stand for 3 hrs. One cc. of the filtrate liquid is tested with KI for Hg. If Hg is still present, more Zn is added. The ascorbic acid is titrated in an aliquot part, using 0.005N. iodine solution. One cc. of solution corresponds to 0.44 mg. of ascorbic acid.

Vitamin C

Determination of ascorbic acid in urine by titration.

Euler, Hans V. and Burström, Dagmar

Biochem. Z. 283, 153-7 (1935).

The ascorbic acid is given a comparative study by titration with 2,6-dichlorphenol-indophenol indicator and the Bezssonoff reagent.

Vitamin C.

Progress in clinical Urinology.

Mitchell, Clifford

Clin. Med. Surg. 43, 19-23 (1936).

A discussion and review are given of qualitative urine tests with emphasis on the excreted residues of medicines.

Vitamin D

Calcium and phosphorus metabolism in diseases of the thyroparathyroid apparatus. II. Mode of action of vitamin D.

Hansmann, F.S.

Med. J. Australia 1934, I 81-95.

It is suggested that vitamin D does not increase calcium absorption from the intestinal tract but renders calcium more available for tissue metabolism.

Volatile substances.

An absorption apparatus for the determination of certain volatile substances. I. The microdetermination of ammonia.

Conway, Edward J. and Byrne, Alfred

Biochem. J. 27, 419-29 (1933).

A very simple apparatus is described for the micro estimation of certain volatile substances by simple diffusion, no aeration or distillation processes being involved. The estimation of ammonia is described.

An advantage of this method is that a large number of estimations can be carried out simultaneously.

Volatile substances

II. The determination of urea and ammonia in body fluids.

Conway, Edward J.

Biochem. J. 27, 430-4 (1933).

Urea is converted into equivalent quantities of ammonia by the action of urease obtained from the jack bean as a glycerol extract.

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