

A BIBLIOGRAPHY OF LIQUOR MAGNESIAE CITRATIS

By

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A Thesis Submitted for the Degree of
BACHELOR OF SCIENCE
(Pharmacy)

UNIVERSITY OF WISCONSIN

1944

This thesis was started under
the direction of Professor W. O.
Richtmann and completed with the
help of Dr. A. Uhl. I hereby
express my appreciation.

Procter, W.

1847

Pharmaceutical Notices.

Am. Journ. Pharm., v. 19, p. 259.

Among other topics, discusses the formulae of other pharmacists for the preparation of Solution of Citrate of Magnesia.

Roge, M. D.

1847

Notice sur le Citrate de magnésie et sur ure nouvelle eau purgative dont ce sel fait la base.

Am. Journ. Pharm., v. 19, p. 218. (Ph. Journ., v. 7, p. 17; Journ. de Pharm. et ch., v. 44, p. 431.)

Gives a formula for preparing "citrate of magnesia" and proposes this administration of citrate of magnesia.

(Editor).

1848

(Citrate of Magnesia in an Editorial).

Am. Journ. Pharm., v. 20, p. 254.

Gives a formula for the preparation of Solution of Citrate of Magnesia.

Wood, G. B. & Bache, F.

1851

Liquor Magnesia Citratis U.S.

Dispens. U.S.A., 9 ed., p. 1072; *ibid.*, 10 ed., p. 1071; *ibid.*, 11 ed., p. 1133; *ibid.*, 12 ed., p. 1207; *ibid.*, 13 ed., p. 1259; *ibid.*, 14 ed., p. 1299; *ibid.*, 15 ed., p. 881; *ibid.*, 16 ed., p. 912; *ibid.*, 17 ed., p. 812; *ibid.*, 18 ed., p. 810; *ibid.*, 19 ed., p. 725; *ibid.*, 20 ed., p. 647; *ibid.*, 21 ed., p. 643; *ibid.*, 22 ed., p. 626.

Gives the U.S.P. process, history, physical properties and therapeutic preparation with references.

Parrish, E. & Smith, A.

1852

Report on Soluble Citrate of Magnesia.

Am. Journ. Pharm., v. 24, p. 113. (Disp. U.S.A., 10 ed., p. 1073.)

Discusses the preparation of Solid Citrate of Magnesia and mentions its advantages over the solution.

Robiquet, E.

1852

Remarques sur la preparation des limonades au Citrate de magnesie.

Journ. de Pharm., v. 48, p. 293. (Disp. U.S.A., 10 ed., p. 1073.)

Comments on Roge's method of using citric acid to disguise the taste of salts of magnesia and he suggests a formula for preparing a "lemonade" of Citrate of Magnesia.

Ellis, C.

1854

On Prepared Citrate of Magnesia.

Am. Journ. Pharm., v. 26, p. 306. (Disp. U.S.A., 11 ed., p. 1134.)

Suggests a formula, with directions in detail, for the preparation of a Soluble Citrate of Magnesia.

Procter, W. Jr.

1854

On Solution of Citrate of Magnesia.

Am. Journ. Pharm., v. 19, p. 259. (Disp. U.S.A., 10 ed., p. 1072.)

Suggests various methods for preventing the formation of a precipitate in Solution of Citrate of Magnesia and comments on the results obtained.

Robiquet, E.

1855

Procéde Pour Preparer Le Citrate De Magnesie
Soluble.

Journ. des Conn. Med., _____, p. _____. (Journ. de Chimie
Medicale, S. 4, v. 1, p. 336; Am. Journ. Pharm., v. 27,
p. 317; Disp. U.S.A., 11 ed., p. 1134.)

Suggests a formula, with directions in detail, for the
preparation of a soluble citrate of magnesia.

Robiquet, E.

1855

Soluble Citrate of Magnesia.

Am. Journ. Pharm., v. 27, p. 317. (The Am. Disp., 6 ed.,
p. 1165).

Suggests a formula for the preparation of Soluble Citrate
of Magnesia.

Simonin, M.

1857

(Rendering Insoluble Citrate of Magnesia Soluble).

Am. de Therap., v. ____, p. 124. (Disp. U.S.A., 11 ed., p.
1134.)

Discusses the method in which an insoluble citrate of
magnesia may be restored to solubility in boiling water.

(Editor)

1858

Citrate of Magnesia.

Drug. Circ., v. 2, p. 4.

In answer to an inquiry concerning citrate of magnesia,
discusses a recipe for its preparation and mentions the
difficulties encountered in preparing the solution.

(Editor)

1858

Citrate of Magnesia.

Drug. Circ., v. 2, p. 64.

In answer to an inquiry of "L" gives a formula for the preparation of Citrate of Magnesia Solution.

Steams, F.

1858

A New Method of Preparing Solution of Citrate of Magnesia.

Drug. Circ., v. 2, p. 5.

Discusses a method for the preparation of Solution of Citrate of Magnesia.

(Editor)

1859

Report on the Revision of the Pharmacopoeia
Magnesia
Liquor Magnesia Citratis.

Am. Pharm. Assoc. Proc., v. 8, p. 232.

Gives a formula for the manufacture of Solution of Magnesium Citrate.

(Editor)

1859

Effervescing Citrate of Magnesia.

Drug. Circ., v. 3, p. 276.

In answer to an inquiry of "W.A.M." gives a satisfactory formula for the preparation of Citrate of Magnesian.

Jefferson, C. L. 1859

(Solution of Citrate of Magnesia.)

Drug. Circ., v. 3, p. 181.

Discusses a formula for the preparation of Solution of Citrate of Magnesia.

Draper, A. N. 1860

The Analysis and Preparation of Granular
Citrate of Magnesia

Drug. Circ., v. 4, p. 93.

Gives a report showing the results obtained upon the analysis of Granular Citrate of Magnesia and discusses other formulae for its preparation.

McQuillan, Dr. 1860

Materia Medica
Magnesiae Citras, in Periodontitis.

Am. Pharm. Assoc. Proc., v. 9, p. 88.

Discusses a case in the dental cosmos.

Vuaflant, Dalpiaz & Tefort 1860

(Effervescent Solution of Citrate of Magnesia).

Drug. Circ., v. 4, p. 92.

Discusses Solution of Citrate of Magnesia of five different strengths.

De Letter, M. H.

1862

Preparation Du Citrate De Magnesie.

Bull. soc. ph. Bruxelles,, v. ____, p. ____. (Rep. de Pharmacie, v. 19, p. 145; Drug. Circ., v. 7, p. 109.)

Discusses the preparation of Soluble Citrate of Magnesia.

(Editor).

1862

Citrate of Magnesia

Drug. Circ., v. 6, p. 104.

In answer to an inquiry of "N.K." gives a formula (Watsor's formula) for the preparation of Citrate of Magnesia Solution.

(Editor).

1862

Pharmacy

Solutions

(1) In Water and Syrup

Liquor Magnesiae Citratis.

Am. Pharm. Assoc. Proc., v. 10, p. 69.

Gives William Watsor's procedure for the manufacture of Solution of Magnesium Citrate.

(Editor)

1863

(Solution of Citrate of Magnesia).

Drug. Circ., v. 7, p. 74.

In answer to an inquiry offers a suggestion for obtaining a soluble citrate.

(Editor) 1864

Solution of Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 12, p. 77.

Among several subjects discusses Parisel's procedure for the manufacture of Solution of Citrate of Magnesia.

(Editor) 1864

Prepared Citrate of Magnesia.

Drug. Circ., v. 8, p. 167.

In answer to an inquiry of "G.H.T." proposes a formula for the preparation of Solution of Magnesium Citrate.

King, J. 1864

Liquor Magnesia Citratis.

Solution of Citrate of Magnesia.

The Am. Disp., 6 ed., p. 1165; *ibid.*, 8 ed., p. 1059; *ibid.*, 10 ed., p. 1059; *ibid.*, 18 ed., p. 1173.

Gives formulae for the preparation of Solution of Citrate of Magnesia and discusses the proportion and therapeutic uses of the solution.

Parisel, M. 1864

(Citrate of Magnesia).

Bull. Gen. de Therap. v. ____, p. ____. (Drug. Circ., v. 8, p. 163.)

Gives a formula for the preparation of Solution of Citrate of Magnesia.

(Editor)

1865

Chemistry

Inorganic Chemistry

2. Metallic Elements

(A.) Metals of the Alkalies and Earths

Magnesium

Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 13, p. 122.

Suggests a method for the preparation of Solution of Magnesium Citrate.

Ebert, A. E.

1866

Minutes of the Fourteenth Annual Meeting

(Citrate of Magnesia).

Am. Pharm. Assoc. Proc., v. 14, p. 45.

Suggests a process for preparing Granular Citrate of Magnesia, which can be dissolved in water to make the proper effervescent mixture.

(Editor)

1866

Report on the Progress of Pharmacy

Soluble Citrate of Magnesia.

Am. Pharm. Assoc., Proc., v. 14, p. 149.

Suggests M. Morelli's formula for the preparation of Soluble Citrate of Magnesia.

(Editor)

1866

(Liquor Magnesii Citratis).

Drug. Circ., v. 10, p. 249.

In answer to an inquiry of a druggist, suggests a method for obtaining a clear solution of Citrate of Magnesia.

Mill, J. W.

1866

On Granular Effervescent Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 14, p. 222.

Gives several formulae for the preparation of Granular Effervescent Citrate of Magnesia and their advantages.

Parrish, E.

1866

Minutes of the Fourteenth Annual Meeting

(Citrate of Magnesia).

Am. Pharm. Assoc. Proc., v. 14, p. 51.

Discusses Citrate of Magnesia and its formula and mentions why other methods for preparing the solution have been suggested.

Procter, W.

1866

Minutes of the Fourteenth Annual Meeting

(Citrate of Magnesia).

Am. Pharm. Assoc. Proc., v. 14, p. 51.

Discusses the validity of the different methods of the preparation of Solution of Magnesium Citrate.

Squibb, E. R.

1866

Minutes of the Fourteenth Annual Meeting
(Citrate of Magnesia).

Am. Pharm. Assoc. Proc., v. 14, p. 52.

Discusses Maisch's preparation of Citrate of Magnesia in relation to the formula suggested by the U.S.P.

(Editor)

1867

Organic Chemistry

Organic Acids

Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 15, p. 233.

Suggests the preparation of an ammonia-citrate of magnesia as prepared by Frederking.

Maisch, J. M.

1867

Pharmacy

Solution of Citrate of Magnesia.

Am. Pharm. Assoc. Proc. v. 15, p. 163. (Am. Journ. Pharm., v. 139, p. 50.)

Suggests a formula for the preparation of Solution of Magnesium Citrate and its advantage over the formula of the U.S.P.

Maisch, J. M.

1867

On Liquor Magnesiae Citratis.

Am. Journ. Pharm., v. 39, p. 1. (Disp. U.S.A., 13 ed., p. 1260.)

Discusses a procedure used to obtain a stable product of Solution of Magnesium Citrate.

Atkinson, W. D.

1868

Pharmacy

Solution of Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 16, p. 165. (Am. Journ. Pharm., v. 40, p. 16.)

Suggests a formula for the preparation of Solution of Citrate of Magnesia and its advantages.

Clayton, F. C.

1868

Granular Citrate of Magnesia.

Drug. Circ., v. 12, p. 336.

Suggests a formula for the manufacture of granular citrate of magnesia and discusses its advantages and disadvantages.

Dymond, G.

1868

Pharmacy

Saccharated Effervescent Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 16, p. 164.

Among several topics discusses a Saccharated Effervescent Citrate of Magnesia.

Werner, Wm. R.

1868

Solution of Citrate of Magnesia Containing
Sulphate.

Am. Pharm. Assoc. Proc., v. 16, p. 165. (Am. Journ. Pharm.,
v. 39, p. 397.)

Suggests a formula for the manufacture of a Solution of
Magnesia containing Sulphate.

(Editor)

1870

Solution of Citrate of Magnesia.

Drug. Circ., v. 14, p. 104.

In answer to an inquiry of "L.V." gives a formula for
Solution of Citrate of Magnesia.

(Editor)

1870

Solution of Citrate of Magnesia.

Drug. Circ., v. 14, p. 181.

In answer to an inquiry of "G.E.B." gives three formulas
for preparing Solution of Magnesium Citrate.

(Editor)

1870

Citrate of Magnesia.

Drug. Circ., v. 14, p. 133.

In answer to an inquiry suggests a method for the preser-
vation of Solution of Citrate of Magnesium.

(Editor)

1870

Effervescing Citrate of Magnesia.

Drug. Circ., v. 14, p. 174.

Suggests a formula for the preparation of Effervescing Citrate of Magnesia.

Rother, R.

1870

Solution of Citrate of Magnesia.

Drug. Circ., v. 14, p. 112.

Discusses the ingredients and reactions of Solution of Citrate of Magnesia, and proposes a formula for its preparation.

Diehl, A.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 106.

Discusses the economy involved in his preparation of Citrate of Magnesia Solution.

Diehl, A.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Gives a formula and procedure for the preparation of Citrate of Magnesia Solution.

Diehl, A.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Discusses the Carbonate of Magnesia used in the preparation of the above.

Ebert, A. E.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Questions the use of Carbonate of Magnesia in place of calcined magnesia.

Ebert, A. E.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Discusses his procedure in preparing Citrate of Magnesia Solution.

Ebert, A. E.

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 104.

Discusses Citrate of Magnesia Solution.

(Editor) 1871

Citrate of Magnesia.

Drug. Circ., v. 15, p. 84.

Suggests various procedures in the manufacture of Solution of Citrate of Magnesia.

(Editor) 1871

Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 19, p. 347.

Discusses the real Citrate of Magnesia and the Solution of Tartrate of Soda which is sold to represent Citrate of Magnesia Solution.

(Editor) 1871

Granular Citrate of Magnesia.

Drug. Circ., v. 15, p. 29.

In answer to an inquiry gives formula for the preparation of granular citrate of magnesia.

(Editor) 1871

Citrate of Magnesia.

Drug. Circ., v. 15, p. 60.

Suggests a formula for Citrate of Magnesia.

Ellis, C. 1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 106.

Describes his procedure for preparing Citrate of Magnesia Solution.

Markoe, F. H. 1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 103.

Discusses his observations on Citrate of Magnesia.

Markoe, F. H. 1871

On The Amount of Magnesia and Citric Acid Contained in Some Commercial Solutions of Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 19, p. 532.

In an answer to a query, the author discusses the disadvantages of the officinal formula for Solution of Magnesium Citrate and suggests a modification of the formula; also he discusses the chemistry of Solution of Citrate of Magnesia and reports the results obtained by analyzing several solutions of the above which were prepared by various manufacturers.

Parrish, E. 1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 104.

Discusses the preparation of Magnesium Citrate Solution.

(The President) 1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Discusses a method of preparing Solution of Magnesium Citrate.

Sargent, E. H. 1871

(Citrate of Magnesia).

Am. Pharm. Assoc. Proc., v. 19, p. 104.

Discusses Citrate of Magnesia.

Sargent, E. H. 1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Discusses the profit he makes by using the formula of the U.S.P. and selling that product.

Sargent, E. H. 1871

On Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 19, p. 530.

In answer to a query, suggests the officinal formula for the preparation of Citrate of Magnesia Solution; discusses the use of Tartrate of Soda as being sold under the title of Citrate of Magnesia and proposes his own formula for the preparation of the above and its advantages over that of the officinal formula.

(The Secretary)

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 106.

Discusses the calcined magnesia used in preparing the above.

(The Secretary)

1871

(Citrate of Magnesia Solution).

Am. Pharm. Assoc. Proc., v. 19, p. 105.

Questions Mr. Diehl's preparation of Citrate of Magnesia Solution.

(Editor)

1872

(Solution of Citrate of Magnesia).

Drug. Circ., v. 16, p. 143.

In answer to an inquiry suggests a remedy for obtaining a preparation which is clear and bright and not syrupy.

Bend, H. T.

1873

(Magnesium Citrate Solution).

Drug. Circ., v. 17, p. 176. (Am. Journ. Pharm., v. 47, p. 38.)

Suggests using simple syrup in place of syrup of citric acid in preparation of Liquor Magnesia citratis.

(Editor)

1873

Magnesium Citrate (Solution).

Am. Pharm. Assoc. Proc., v. 21, p. 495. (Am. Journ. Pharm., v. 45, p. 289.)

Discusses the use of Tartaric Acid in place of Citric Acid in the manufacture of Magnesium Citrate Solution and its advantages.

(Editor)

1873

Granular Citrate of Magnesia.

Drug. Circ., v. 17, p. 175.

In answer to an inquiry of "P.H." suggests a formula for preparing granular citrate of magnesia.

(Editor)

1873

Liq. Manges. Citratis.

Drug. Circ., v. 17, p. 176.

Suggests methods of preparing and storing the above solution.

(Editor)

1873

A Solution of Citrate of Magnesia That Will not Change.

Drug. Circ., v. 17, p. 190.

Among the Notes, suggests a formula for the preparation of a Solution of Magnesium Citrate that will not change as suggested by E.E.M.

Polk, G. C.

1873

Solution of the Magnesium Citrate.

Drug. Circ., v. 17, p. 41.

Gives several formulas for the preparation of Solution of Magnesium Citrate.

Polk, G. C.

1873

Solution of Citrate of Magnesia.

Am. Pharm. Assoc. Proc., v. 21, p. 182.

Proposes a formula for the manufacture of citrate of Magnesia Solution.

(Editor)

1874

Solution of The Citrate of Magnesium.

Am. Journ. Pharm., v. 46, p. 213.

Disagrees with Dr. Polk about the strength of the Solution of Magnesium Citrate.

(Editor)

1874

Citrate of Magnesium.

Am. Pharm. Assoc. Proc., v. 22, p. 314.

Cites an example in which a druggist was fined for selling adulterated Citrate of Magnesium.

(Editor)

1874

Granular Citrate of Magnesia.

Drug. Circ., v. 18, p. 81.

In answer to an inquiry, proposes a formula for the preparation of Granular Citrate of Magnesia.

Polk, C. G.

1874

Solution of Citrate of Magnesia.

Drug. Circ., v. 18, p. 91.

Discusses various preparations of Solution of Citrate of Magnesia and their disadvantages and gives suggestions for obtaining better solutions.

Polk, C. G.

1874

Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 46, p. 213.

Suggests the use of Solution of Citrate of Magnesia in a weaker concentration than that proposed by the pharmacopolia.

(Editor)

1875

Effervescing Citrates of Tartrates

"Effervescing Citrate of Magnesium."

Am. Pharm. Assoc. Proc., v. 23, p. 88.

Gives two formulae for the preparation of Liquor Magnesiae Citratis and discusses the ingredients found in various preparations of the above.

(Editor)

1875

Solution of Citrate of Magnesia.

Drug. Circ., v. 19, p. 129.

Among the notes, suggests B. Van B's formula for obtaining a clear Solution of Citrate of Magnesia.

Mattison, R. V.

1875

Report of the Committee on Unofficial Formulas
Granular Effervescent Citrate of Magnesium.

Am. Pharm. Assoc. Proc., v. 23, p. 487.

Discusses a method of preparing Granular Effervescent Citrate of Magnesium.

McIntyre, Wm.

1875

Minutes of the Pharmaceutical Meeting.

Am. Journ. Pharm., v. 47, p. 38.

Discusses various methods of preparing Solution of Citrate of Magnesia.

Schlotterbeck, A. G.

1875

The Preparation of Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 47, p. 501.

Suggests a formula for preparing a clear Solution of Citrate of Magnesium.

Schrage, W.

1875

Chemicals and Pharmacuetical Preparations

Citrate of Magnesium.

Am. Pharm. Assoc. Proc., v. 23, p. 515.

Discusses various preparations of Effervescing Citrate of Magnesia and their ingredients.

(Editor)

1876

Citrate of Magnesia.

Drug. Circ., v. 20, p. 205.

In answer to an inquiry of "C" the Editor suggests that pure chemicals be used.

(Editor)

1876

Citrate of Magnesia.

Drug. Cir., v. 20, p. 94.

Suggests a formula for the preparation of Solution of Citrate of Magnesia.

(Editor)6

1876

Citrate of Magnesia.

Drug. Circ., v. 20, p. 64.

Among the notes suggests a formula of a pharmacist for obtaining a clear Solution of Citrate of Magnesia.

Mattison, R. V.

1876

Unofficial Formulas.

Drug. Circ., v. 20, p. 71.

Discusses several formulas for the preparation of Granular Effervescent Citrate of Magnesium.

Schlatterbeck, A. G.

1876

Solution of Citrate of Magnesium.

Drug. Circ., v. 20, p. 38.

Discusses Citrate of Magnesia Solution.

Schlatterbeck, A. G.

1876

Solution of Citrate of Magnesium.

Am. Pharm. Assoc. Proc., v. 24, p. 81. (Am. Journ. Pharm., v. 47, p. 501.)

Discusses the results obtained from preparing Solution of Citrate of Magnesium by various methods.

(Editor)

1877

(Editorial Department
Substitute for Solution of Citrate of Magnesia).

Am. Journ. Pharm., v. 49, p. 206.

Discusses substitutes for Solution of Citrate of Magnesia.

Rhinehart, J.

1877

Substitute for Citrate of Magnesium.

Drug. Circ., v. 21, p. 84.

Gives a formula for the preparation of a substitute for Citrate of Magnesium and discusses its medicinal action.

Rhinehart, J.

1877

Substitute for Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 49, p. 100.

Suggests a formula as a substitute for Solution of Citrate of Magnesium.

Watts, J. W.

1877

On Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 49, p. 99.

Proposes a formula for the preparation of a clear Solution of Citrate of Magnesium.

Wesley, W.

1877

Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 49, p. 161.

Suggests a method for the preparation of Solution of Magnesium Citrate.

(Editor)

1878

Citrate of Magnesia.

Drug. Circ., v. 22, p. 95.

Discusses the manufacture of Citrate of Magnesia according to the U.S.P. formula, with a few changes in the procedure.

(Editor)

1879

(Magnesium Citrate Solution).

Drug. Circ., v. 23, p. 97.

In answer to an inquiry of "A.P." suggests that the precipitation of Citrate of Magnesia is delayed by keeping it in a closed vessel.

Piquett, J. P.

1879

Citrate of Magnesia.

Drug. Circ., v. 23, p. 173.

Discusses a procedure for the preparation of Citrate of Magnesia.

Stille, A. and Maisch, J. M.

1879

Liquor Magnesii Citratis U.S. - Solution of Citrate of Magnesium.

The Nat. Disp., 1 ed., p. 840; *ibid.*, 2 ed., p. 856; *ibid.*, 3 ed., p. 912; *ibid.*, 5 ed., p. 970.

Discusses the preparation, medicinal action and uses of Solution of Citrate of Magnesium.

Cornelis, H. 1880

Neutral Citrate of Magnesium - Preparation.

Am. Pharm. Assoc. Proc., v. 28, p. 180.

Discusses a method for preparing neutral citrate of Magnesium Solution.

(Editor). 1880

(Citrate of Magnesia).

Drug. Circ., v. 24, p. 106.

In answer to an inquiry of "W.H.D.", discusses the clear Solution of Citrate of Magnesia.

(Editor). 1881

Coloring Citrate of Magnesia.

Drug. Circ., v. 25, p. 137.

In answer to an inquiry, suggests that the doctor always be consulted before dispensing a solution differing in appearance from that of the officinal preparation.

Fairthorne, R. F. 1882

Practical Notes

Solution of Citrate of Magnesium.

Am. Journ. Pharm., v. 54, p. 67.

Among several items includes a formula for the preparation of Solution of Citrate of Magnesium.

Fairthorne, R. F.

1882

Solution of Citrate of Magnesia - Modified
Process.

Am. Pharm. Assoc. Proc., v. 30, p. 87. (Am. Journ. Pharm.,
v. 54, p. 67).

Gives a formula for the preparation of Solution of
Citrate of Magnesia.

(Editor)

1883

(Citrate of Magnesia).

Drug. Circ., v. 27, p. 25.

Discusses the prevention of the precipitation of
Citrate of Magnesia.

King, W. B.

1883

(Citrate of Magnesia).

Drug. Circ., v. 27, p. 136.

Discusses a preparation for Citrate of Magnesia
Solution.

King, W. B.

1883

Citrate of Magnesia.

Drug. Circ., v. 27, p. 121.

Discusses the use of hot and cold water in the manu-
facture of Citrate of Magnesia.

Kondratowisch, B.

1883

Citrate of Magnesia.

New Remedies, v. 12, p. 246. (Disp. U.S.A., 16 ed., p. 913.)

Gives a formula for the preparation of Citrate of Magnesia.

Kondratowisch, B.

1884

Solution of Citrate of Magnesia - Formula.

Am. Pharm. Assoc. Proc., v. 32, p. 77.

Gives a formula for the preparation of Solution of Citrate of Magnesia.

Neynaber, A. F. W.

1884

Liquid Citrate of Magnesia.

Am. Journ. Pharm., v. 56, p. 472. (Disp. U.S.A., 16 ed., p. 913.)

Proposes a modification in the formula for the preparation of Liquid Citrate of Magnesia.

(Editor)

1885

A Genuine Granular Citrate of Magnesia.

Drug. Circ., v. 29, p. 151.

Discusses the manufacture of granular citrate of magnesia.

Stevens, A. B.

1885

What is the quality of Solution of Citrate of Magnesium furnished by manufacturers? How much is gained by preparing it instead of preparing it of the manufacturers?

Proc. Mich. State Pharm. Assoc., v. 3, p. 143. (Disp. U.S.A., 16 ed., p. 913).

Comments on the results obtained from the analysis of various Solutions of Citrate of Magnesia and suggests a satisfactory formula for the preparation of Liquid Citrate of Magnesia.

(Editor)

1886

Citrate of Magnesia.

Drug. Circ., v. 30, p. 205.

In answer to an inquiry of "R.E." suggests that the water be boiled and filtered so as to avoid decomposition of the Citrate of Magnesia.

Martyr, A.

1886

Citrate of Magnesia Extemporaneously.

Drug. Circ., v. 30, p. 83.

Discusses the procedure used in preparing Citrate of Magnesia.

Stevens, C. B.

1886

Solution of Citrate of Magnesium - Examination of Commercial Samples.

Am. Pharm. Assoc. Proc., v. 34, p. 330.

Discusses the results obtained upon the analysis of Commercial Samples of Citrate of Magnesium and suggests a modified formula for Solution of Citrate of Magnesium.

(Editor)

1887

Formula of Magnesium Citrate.

Drug. Circ., v. 31, p. 157.

In answer to an inquiry of "J.A.M." discusses the formula of Magnesium Citrate.

(Editor)

1887

Permanent Solution of Citrate of Magnesia.

Drug. Circ., v. 31, p. 16.

In answer to an inquiry of "C.W.A." suggests that the formula of the U.S.P. used in the manufacture of Solution of Citrate of Magnesia.

(Editor)

1887

Precipitation in Solution of Magnesium Citrate.

Drug. Circ., v. 31, p. 109.

Discusses the precipitation of Magnesium Citrate as observed by W.D.

Reeb, M.

1887

Abstracts From the French Journals

Solution of Magnesium Citrate.

Am. Journ. Pharm., v. 59, p. 351.

Among several items includes an article on Solution of Magnesium Citrate and gives a formula for concentrated Citrate of Magnesium.

(Editor)

1888

Stoppers for Magnesium Citrate.

Drug. Circ., v. 32, p. 38.

In answer to an inquiry of "B" suggests that corks be used in stoppering the bottles.

(Editor)

1889

American Pharmaceutical Association.

Am. Journ. Pharm., v. 61, p. 438.

Suggests a modification of the formula for the preparation of Solution of Magnesium Citrate to prevent crystallization of the normal citrate.

Stevens, L. F.

1889

Solution of Magnesium Citrate.

Drug. Circ., v. 33, p. 245; *ibid.*, v. 38, p. 182; *ibid.*, v. 40, p. 190.

Suggests a formula for the preparation of Solution of Citrate of Magnesium and discusses other preparations and formulas.

Deadwood, J. D.

1890

Precipitation in Magnesium Citrate Solution.

Drug. Circ., v. 34, p. 229.

Discusses results obtained upon solutions of magnesium citrate.

(Editor)

1890

Fungus in Solution of Citrate of Magnesium.

Drug. Circ., v. 34, p. 159.

Discusses the amount of "fungus" contained in certain brands of Solution of Citrate of Magnesia.

(Editor)

1890

Precipitation in Magnesium Citrate Solution.

Drug. Circ., v. 34, p. 62.

In answer to an inquiry of a subscriber suggests that only small quantities of the solution be prepared to prevent precipitation.

(Editor)

1890

Solution of Magnesium Citrate.

Drug. Circ., v. 34, p. 283.

Gives the formulas of A. B. Stevens and T. Palmer for the preparation of Solution of Magnesium Citrate.

(Editor)

1890

American Pharmaceutical Association.

Am. Journ. Pharm., v. 62, p. 531.

Suggests a formula for the preparation of Solution of Magnesium Citrate as proposed by Luther, B. F. Stevens.

(Editor)

1890

Precipitation in Magnesium Citrate Solution.

Drug. Circ., v. 34, p. 253.

Discusses the use of boiled water in magnesium citrate solution.

(Editor)

1891

Changes in Magnesium Citrate Solution.

Drug. Circ., v. 35, p. 230.

Discusses the changes in the Solution of Magnesium Citrate.

(Editor)

1891

Magnesium Citrate Solution.

Drug. Circ., v. 35, p. 61.

In answer to an inquiry of "P.C.P." suggests several methods to be used to prevent the precipitation of Magnesium Citrate Solution.

England, W. J.

1891

Notes on Practical Pharmacy

Solution of Magnesium Citrate.

Am. Journ. Pharm., v. 63, p. 121.

Among several items includes Solution of Magnesium Citrate and suggests a substance be used to cause effervescence in Solution of Magnesium Citrate.

Huber, J. E.

1891

Liquor Magnesii Citratis.

Drug. Circ., v. 35, p. 249.

Discusses the stability of Magnesium Citrate Solution and suggests a few formulas for its preparation.

Stevens, A. B. & Palmer, T.

1891

Solution of Citrate of Magnesia - Improved Formula.

Am. Pharm. Assoc. Proc., v. 39, p. 303.

Discusses an improved formula for the preparation of Solution of Citrate of Magnesia.

(Editor)

1892

Solution of Magnesium Citrate.

Drug. Circ., v. 36, p. 157.

Distinguishes between the Dispensatory and the Pharmacopoeia preparations of Solution of Magnesium Citrate.

Huber, J. E.

1892

Liquor Magnesii Citratis.

Am. Pharm. Assoc. Proc., v. 40, p. 468.

Gives a method and formula for the preparation of a fresh Solution of Magnesium Citrate.

(Editor)

1893

Stringy Deposit in Magnesium Citrate Solution.

Drug. Circ., v. 37, p. 37.

In answer to an inquiry of "W.B." suggests that the water be sterilized before being used in the preparation and hints that the stringy deposit is due to the presence of micro-organisms.

Scoville, W. L.

1893

Magnesium Citrate - Granular Effervescent.

Am. Pharm. Assoc. Proc., v. 41, p. 782.

Gives the analysis of the three brands of granular effervescent magnesium citrate powders.

Edel, F.

1894

Magnesium Citrate - Extemporaneous Solution.

Am. Pharm. Assoc. Proc., v. 42, p. 582. (Disp. U.S.A., 18 ed., p. 810.)

Suggests a process for the manufacture of Solution of Magnesium Citrate.

(Editor)

1894

Preservation of Magnesium Citrate Solution.

Drug. Circ., v. 38, p. 203.

Discusses procedures used by Oswald L. Schreiner in the preparation of Solution of Magnesium Citrate.

Hausmann, F. W.

1894

The Presence of Lead in Citrates.

Am. Journ. Pharm., v. 66, p. 173. (Drug. Circ., v. 38, p. 131.)

Among several commercial Citrates, including Solution of Magnesium Citrate, discusses the amount of lead present in these substances.

Hemm, F.

1894

Pharmaceutical Notes and Comments.

Am. Journ. Pharm., v. 66, p. 390.

Among several items includes an article on Liquor Magnesii Citratis and discusses the palatability of the Solution.

(Editor)

1895

American Pharmaceutical Association.

Am. Journ. Pharm., v. 67, p. 485.

Among several topics discusses Solution of Magnesium Citrate and proposes a formula for its preparation as prepared by A. B. Stevens and W. Palmer.

(Editor)

1896

Magnesium Citrate Solution.

Drug. Circ., v. 40, p. 190.

In answer to an inquiry of "W.A.B." advises that the physician always be consulted before making any deviation from official standards in preparing the solution.

Widlum, A. I.

1896

Solution of Magnesium Citrate - Improved
Formula.

Am. Pharm., Assoc. Proc., v. 44, p. 428. (Disp. U.S.A.,
18 ed., p. 810.)

Suggests an improved formula for the preparation of
Solution of Magnesium Citrate.

Widlum, A. I.

1896

Solution of Magnesium Citrate - Improved
Formula.

Am. Pharm. Assoc. Proc., v. 44, p. 428. (Proc. North Dakota
Pharm. Assoc., 1895, p. 40.)

Gives a formula for the preparation of Solution of
Magnesium Citrate.

(Editor)

1897

Magnesium Citrate Solution.

Drug. Circ., v. 41, p. 104.

Suggests that the U.S.P. formula be used in the prepara-
tion of Magnesium Citrate Solution and discusses its use at
the fountain.

Benhard, A. H.

1898

Solution of Magnesium Citrate - Quick Method of
Preparation.

Am. Pharm. Assoc. Proc., v. 46, p. 695.

Suggests a rapid method for the preparation of Solution
of Magnesium Citrate.

(Editor)

1898

Precipitation of Magnesium Citrate.

Drug. Circ., v. 42, p. 42.

Discusses the precipitation of Magnesium Citrate.

(Editor)

1899

American Pharmaceutical Association.

Am. Journ. Pharm., v. 71, p. 495.

Among several items discusses J. H. Schmidt's procedure in preparing the effervescent solution of magnesium citrate.

(Editor)

1899

Practical Pharmacy.

Drug. Circ., v. 43, p. 223.

Discusses Effervescent Solution of Magnesium Citrate and discusses J. H. Schmidt's method for obtaining a clear solution.

Kebler, L. F.

1899

Magnesium Citrate, Effervescing, Adulterated with Magnesium Sulphate.

Am. Journ. Pharm., v. 71, p. 545.

Discusses the U.S.P. tests performed and results obtained on a solution of magnesium citrate, adulterated with too much magnesium sulphate.

(Editor)

1900

Precipitation in Magnesium Citrate Solution.

Drug. Circ., v. 44, p. 20.

In answer to an inquiry of E.S.H., urges against the deviation from official standards without the advice or consent of the physician and recommends methods for securing a clear solution.

Scoville, W. L.

1900

Effervescing Citrate of Magnesium.

Am. Journ. Pharm., v. 72, p. 175.

Discusses the preparation of Effervescing Citrate of Magnesium, its reactions and its therapeutic value.

Scoville, W. L.

1900

Effervescing Citrate of Magnesium.

Drug. Circ., v. 44, p. 140.

Gives a formula for the preparation of Effervescing Citrate of Magnesium and discusses its properties.

Scoville, W. L.

1900

Granular Effervescent Magnesium Citrate - Should It be Replaced by a Corresponding Preparation of Magnesium Sulphate?

Am. Pharm. Assoc. Proc., v. 48, p. 501. (Am. Journ. Pharm., v. 72, p. 175.)

Discusses the objections to the official preparations and the reasons for the preparation of Magnesium Sulphate in place of Magnesium Citrate.

Yaple, F.

1900

Minutes of the Pharmaceutical Meeting.

Am. Journ. Pharm., v. 72, p. 194.

Discusses W. L. Scoville's preparation of Effervescing Citrate of Magnesium.

Bache, B. F.

1901

Solution of Magnesium Citrate.

Drug. Circ., v. 45, p. 217.

Discusses the importance of the grade of magnesium carbonate used in the manufacture of Solution of Magnesium Citrate.

Hague, G. W.

1901

Solution of Magnesium Citrate - A Good Formula.

Am. Pharm. Assoc. Proc., v. 49, p. 579. (Merck's Rep., April, 1901, p. 115.)

Discusses a formula for the preparation of Solution of Magnesium Citrate.

Claasen, E.

1902

Solution of Magnesium Citrate U.S.P. 1890-
Improved Manipulation.

Am. Pharm. Assoc. Proc., v. 50, p. 735. (Pharm. Rev., Aug., 1901, p. 351.)

Gives a formula for the preparation of Solution of Magnesium Citrate.

Huber, J. E.

1902

Solution of Magnesium Citrate.

Drug. Circ., v. 46, p. 202.

Discusses the importance in the selection of Magnesium Carbonate and precautions necessary for obtaining a good solution of Magnesium Citrate.

Watson, H. J.

1902

The Sterilization of Solution of Magnesium Citrate.

Am. Journ. Pharm., v. 74, p. 345.

Proposes various methods for sterilizing Solution of Magnesium Citrate.

Watson, H. J.

1902

The Sterilization of Solution of Magnesium Citrate.

Drug. Circ., v. 46, p. 175 (Am. Journ. Pharm., v. 74, p. 345.)

Discusses various methods for sterilizing Solutions of Magnesium Citrate.

(Editor)

1903

Magnesium Citrate.

Drug. Circ., v. 47, p. 260.

In answer to an inquiry of "J.G." the editor suggests that the correct proportions of the ingredients be used in preparing Magnesium Citrate Solution.

Huber, J. E.

1903

Solution of Magnesium Citrate - Method of Sterilization.

Am. Pharm. Assoc. Proc., v. 51, p. 636. (Drug. Circ., v. 46, p. 202.)

Discusses the precautions to be taken in sterilizing Solution of Magnesium Citrate and the selection of Magnesium carbonate in the preparation.

Watson, H. J.

1903

Solution of Magnesium Citrate - Method of Sterilization.

Am. Pharm. Assoc. Proc., v. 51, p. 635. (Proc. Delaware Pharm. Society, 1902; Am. Journ. Pharm., v. 74, p. 345.)

Gives a procedure for the sterilization of Solution of Magnesium Citrate.

Brunor, E.

1904

Improved Process For Solution of Magnesium Citrate.

Am. Pharm. Assoc. Proc., v. 52, p. 449.

Discusses improved methods for the preparation of Solution of Magnesium Citrate and also gives a formula for the satisfactory preparation of Solution of Magnesium Citrate.

(Editor)

1904

Solution of Magnesium Citrate.

Drug. Circ., v. 48, p. 254.

In answer to an inquiry of "H.A.E." suggests several formulae for preparing Solution of Magnesium Citrate.

(Editor)

1904

Molding of Solution of Magnesium Citrate.

Drug. Circ., v. 48, p. 207.

In answer to an inquiry of "H.D.S." the editor suggests that the water be boiled before being used in the manufacture of Solution of Magnesium Citrate.

(Editor)

1904

Solution of Magnesium Citrate.

Drug. Circ., v. 48, p. 41.

In answer to an inquiry of "C.B.", the editor suggests various measures for preventing the precipitation in the official Solution of Magnesium Citrate.

Brunor, E.

1905

Improved Process for Solution of Magnesium Citrate.

Drug. Circ., v. 49, p. 48.

Suggests an improved formula for preparing Solution of Magnesium Citrate and discusses the use of freshly-grated lemon peel used as a flavor.

(Editor)

1905

The Original Solution of Magnesium Citrate.

Drug. Circ., v. 49, p. 56.

In answer to an inquiry of "J.S.B." gives several formulas for preparing Solution of Magnesium Citrate, including the formulas of the U.S.P. from 1860-1900.

Stuchlik, J.

1905

Solution of Magnesium Citrate - Method of Preparation.

Am. Pharm. Assoc. Proc., v. 53, p. 576. (West. Drugg., Febr., 1905, p. 97.)

Suggests a formula and method for the preparation of Solution of Magnesium Citrate.

(Editor)

1906

Nature of the Precipitate in Solution of Magnesium Citrate.

Drug. Circ., v. 50, p. 209.

In answer to an inquiry of "H.F.E." discusses the three types of Magnesium Citrate precipitate which may occur in the Solution of Magnesium Citrate.

(Editor)

1906

Trouble with Solutions of Magnesium Citrate.

Drug. Circ., v. 50, p. 170.

In answer to an inquiry of "J.S." discusses a formula for the preparation of Solution of Magnesium Citrate.

Hain, F. W. A.

1906

Solution of Magnesium Citrate - Method of Preparation.

Am. Pharm. Assoc. Proc., v. 54, p. 642. (Bull. Pharm., Nov. 1905, p. 472.)

Discusses a formula for the preparation of Solution of Magnesium Citrate.

La Wall, C. H.

1906

Report of The Pennsylvania State Pharmaceutical
Association Meeting.

Am. Journ. Pharm., v. 78, p. 385.

Among other items discusses Effervescent Solution of Citrate of Magnesia by Fred S. Nagle and suggests a favorable formula for preparing the above.

Baird, E. G.

1907

Solution of Magnesium Citrate - A Concentrated
Form for Stock. -

Am. Pharm. Assoc. Proc., v. 55, p. 672. (Proc. Mississippi Pharm. Assoc., 1906, p. 41.)

Discusses a concentrated form of Solution of Magnesium Citrate for stock.

(Editor)

1907

Filtering Solution of Magnesium Citrate.

Drug. Circ., v. 51, p. 367.

Discusses various methods for filtering a Solution of Magnesium Citrate as suggested by M. E. Doyle and other pharmacists.

(Editor)

1907

Filtering Solution of Magnesium Citrate.

Drug. Circ., v. 51, p. 417.

In answer to an inquiry of "W.J.K." the editor proposes A. L. Merin's Methods for filtering Solution of Magnesium Citrate.

(Editor)

1907

Magnesium Citrate at The Soda Fountain.

Drug. Circ., v. 51, p. 598.

Suggests that the granular Effervescent Citrate of Magnesia be kept on hand and filled with carbonated water from the fountain when desired.

(Editor)

1907

Filtering Solution of Magnesium Citrate.

Drug. Circ., v. 51, p. 311.

In answer to an inquiry of ".J.K." suggests a satisfactory procedure for filtering Solution of Magnesium Citrate.

Nagle, F. S.

1907

Solution of Magnesium Citrate - Novel Method of Preservation Ready for Dispensing.

Am. Pharm. Assoc. Proc., v. 55, p. 673. (Proc. Penn'a. Pharm. Assoc., 1906, p. 246.)

Discusses a method of Preservation for Solution of Magnesium Citrate.

Dudman, F. E.

1908

Solution of Magnesium Citrate.

Drug. Circ., v. 52, p. 3380.

Suggests using fresh solutions in preparing Solution of Magnesium Citrate and discusses a formula for the above.

(Editor)

1908

Solution of Magnesium Citrate plus Rochelle
Salt.

Drug. Cir., v. 52, p. 320.

In answer to the query of "J.P." discusses the results of adding Rochelle salt to a Solution of Magnesium Citrate, the chemical reaction, and the therapeutic effects derived from it.

Georgia, K. C.

1908

Solution of Magnesium Citrate.

Drug. Circ., v. 52, p. 431.

Gives a formula for the preparation of Magnesia Citrate Solution.

Roubenheimer, O.

1908

Solution of Magnesium Citrate - Preparation.

Am. Pharm. Assoc. Proc., v. 56, p. 102. (Merck's Rep.,
Sept., 1907, p. 256.)

Discusses the preparation of Solution of Magnesium Citrate.

Daniel, R. P.

1909

Two Interesting Preparations
(Solution of Magnesium Citrate).

Drug. Circ., v. 53, p. 24.

Among several topics discusses the preparation of Solution of Magnesium Citrate and suggests that sterilization of the Solution will produce a clear liquid.

La Wall, C. H.

1910

Some Suggested Standards and Changes For
the U.S.P.

Am. Journ. Pharm., v. 82, p. 23.

Among several topics discusses Liquor Magnesia Citratis and the requirements for a good preparation of the Solution of Magnesium Citrate.

Allen, M. D.

1911

Solution of Magnesium Citrate - Effective
Sterilization.

Am. Pharm. Assoc. Proc., v. 59, p. 76. (Am. Journ. Pharm.,
Dec., 1911, p. 565.)

Gives a formula for the preparation of Solution of Magnesium Citrate and discusses the effective sterilization of the Solution of Magnesium Citrate.

Allen, M. D.

1911

Liquor Magnesii Citratis.

Am. Journ. Pharm., v. 83, p. 564.

Discusses several methods of preparing Liquor Magnesii Citratis; their advantages and disadvantages and methods of preservation of the solutions prepared.

Carpenter, H. S.

1911

Solution of Magnesium Citrate - Another
Experience.

Am. Pharm. Assoc. Proc., v. 59, p. 77. (Bull. Pharm., Oct.,
1910, p. 430.)

Discusses a method for the preparation of Solution of Magnesium Citrate.

Davies, J. J.

1911

Solution of Magnesium Citrate.

Drug. Circ., v. 55, p. 568.

Among several subjects including Solution of Magnesium Citrate discusses the ingredients and their uses in the Solution.

(Editor)

1911

Stable Solution of Magnesium Citrate.

Durg. Circ., v. 55, p. 80.

In answer to the query of "G.P.D." the editor outlines several measures for obtaining a stable solution of Magnesium Citrate.

(Editor)

1911

Solution of Magnesium Citrate that will Keep.

Drug. Circ., v. 55, p. 639.

In answer to the query of "Z.A.H." outlines several processes for obtaining a Solution of Magnesium Citrate that will keep.

McNulty, J. F.

1911

Solution of Magnesium Citrate - A Preparation of Stability by a Slight Modification.

Am. Pharm. Assoc. Proc., v. 59, p. 76. (Merck's Rep., Nov., 1910, p. 309.)

Gives a modified formula for solution of Magnesium Citrate.

Bunge, J. O.

1912

Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 1, p. 647.

Gives a formula for preparing Solution of Magnesium Citrate and discusses a favorable method for dispensing the solution.

(Editor)

1912

Solution of Magnesium Citrate.

Drug. Circ., v. 56, p. 675.

In answer to the query of "C.M.E." discusses the preparation of Solution of Magnesium Citrate.

England, J. W.

1912

Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 1, p. 440.

Comments on various formulas for preparing Solution of Magnesium Citrate, and also discusses changes in the formulas from year to year and the advantages and disadvantages accompanying these changes.

"Ess, J."

1912

Keeping Solutions of Magnesium Citrate.

Drug. Circ., v. 56, p. 148.

Discusses the amount of Solution of Magnesium Citrate that should be prepared at one time.

"Ess, J."

1912

A Few Practical Notes

Solution of Magnesium Citrate.

Drug. Circ., v. 56, p. 78.

Among several topics discusses the manner in which he prepares Solution of Magnesium Citrate.

Francois & Lassanse

1912

Examination of Solution of Magnesium Citrate.

Drug. Circ., v. 56, p. 729.

Give a procedure for the qualitative and quantitative examination of Effervescent Magnesium Citrate Solution.

Fritzinger, R. J.

1912

Solution of Magnesium Citrate.

Drug. Circ., v. 56, p. 312.

Discusses the preparation, formula, and chemical reactions of the ingredients in Solution of Magnesium Citrate.

Hunsberger, A.

1912

Philadelphia Branch

(April Meeting).

Journ. Am. Pharm. Assoc., v. 1, p. 518.

Among several topics discusses the flavoring of Solution of Magnesium Citrate with ginger, and discusses the qualitative estimation of Magnesium Citrate and Magnesium Sulphate in the Solution.

Schulze, W.

1912

A Few Practical Hints

Sol. Magnesium Citrate

Journ. Am. Pharm. Assoc., v. 1, p. 151.

Discusses a method for obtaining a clear solution of Magnesium Citrate.

Tanner, T. B.

1912

Solution of Magnesium Citrate - Suggested Improvement in Method of Manufacture.

Journ. Am. Pharm. Assoc., v. 1, p. 444.

Discusses the formula of Solution of Magnesium Citrate.

(Editor)

1913

Saint Louis Branch Discusses Solution of Magnesium Citrate.

Drug. Circ., v. 57, p. 95.

Discusses the use of Milk of Magnesia in place of Magnesium Carbonate in the preparation of Solution of Magnesium Citrate and the difficulties encountered.

(Editor)

1913

Solution of Magnesium Citrate.

Drug. Circ., v. 57, p. 749.

In answer to the query of "C.E.D." suggests that the solution be freshly prepared when wanted.

E'we, G. E.

1913

Report of the P.P.A. Committee on Drug Market

Magnesium Citrate Effervescent.

Journ. Am. Pharm. Assoc., v. 2, p. 973.

Discusses a fraudulent preparation of Solution of Magnesium Citrate which contains magnesium sulphate but lacks the magnesium citrate.

McAnulty, J. F.

1913

Liquor Magnesii Citratis - Modified Formula.

Yr. Bk. Am. Pharm. Assoc., v. 2, p. 58. (Proc. New Jersey Pharm. Assoc., 1913, p. 44.)

Gives a modified formula for the above which obviates the previous manufacture of Syrup of Citric Acid of the Official formula.

Brown, J. L.

1914

Liquor Magnesii Citratis

Yr. Bk. Am. Pharm. Assoc., v. 3, p. 71. (Journ. Am. Pharm. Assoc., v. 3, p. 968.)

Suggests a formula for Solution of Magnesium Citrate which is but a slight modification from that of the U.S.P.

Brown, J. L.

1914

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 3, p. 968.

Gives a modified formula for preparing Liquor Magnesii Citratis.

(Editor)

1914

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 3, p. 530.

Discusses a formula and process for preparing Solution of Magnesium Citrate.

(Editor)

1914

"Improved" Recipes.

Solution of Magnesium Citrate.

Drug. Circ., v. 58, p. 150.

Gives a formula for Solution of Magnesium Citrate.

(Editor)

1914

Suggested Improvements for Official Formulas

Solution of Magnesium Citrate.

Drug. Circ., v. 58, p. 11.

Gives a formula for Solution of Magnesium Citrate.

Passehl, J. J.

1914

Liquor Magnesii Citratis.

Yr. Bk. Am. Pharm. Assoc., v. 3, p. 71. (Proc. Wisc. Pharm. Assoc., 1914, p. 78.)

Discusses the manufacture of Liquor Magnesii Citratis and how it differs from the U.S.P. preparation.

(Editor)

1915

Magnesium Citrate

Precipitation in Solutions.

Yr. Bk. Am. Assoc., v. 4, p. 208. (Pharm. Zentralhalle; through Pharm. Era, 1915, p. 116.)

Discusses the chemistry of the precipitate which develops in Liquor Magnesii Citratis, and suggests various procedures to be used for preventing this precipitation.

Fellow, E. W.

1915

Solution of Magnesium Citrate

Change in Method of Preparations.

Yr. Bk. Am. Pharm. Assoc., v. 4, p. 469. (Bull. Pharm., 1915, p. 487.)

Recommends a method for making a permanent solution of Magnesium Citrate.

Blomberg, C.

1916

Solution of Magnesium Citrate

Modified Recipe.

Yr. Bk. Am. Pharm. Assoc., v. 5, p. 75. (Pharm. Weekblad, v. 53 (1916), p. 1382.)

Gives a formula for the preparation of Solution of Magnesium Citrate.

Leger, E.

1916

Magnesium Citrate

Changes in Composition on Aging.

Yr. Bk. Am. Pharm. Assoc., v. 5, p. 276. (Journ. Pharm. Chim., v. 13 (1916), p. 209.)

Discusses results obtained by submitting samples of Magnesium Citrate to solubility tests after one year's aging and the differences observed.

(Editor)

1917

"Permanent" Solution of Magnesium Citrate.

Drug. Circ., v. 61, p. 633.

In answer to the queries of "P.S.H. & M.F." suggests that a fresh solution of Magnesium Citrate always be dispersed.

(Editor)

1917

Insoluble Precipitate in Solution of Magnesium Citrate.

Drug. Circ., v. 61, p. 81.

In answer to the query of "E.O.B." explains the chemistry between Magnesium Carbonate and Citric Acid.

(Editor)

1917

Caution against Explosion in New Process for Magnesium Citrate.

Drug. Circ., v. 61, p. 60.

Discusses the danger involved when using Sodium Bicarbonate in charging Solution of Magnesium Citrate.

(Editor)

1917

Solution of Magnesium Citrate

Caution Against Explosion.

Yr. Bk. Am. Pharm. Assoc., v. 6, p. 87.

Suggests methods for preventing an explosion in
Solution of Magnesium Citrate.

Bartleson, R.

1919

Behind Prescription Counter

Solution of Magnesium Citrate.

Drug. Circ., v. 63, p. 62.

Gives a procedure for making Solution of Magnesium Citrate.

Herzfeld, H.

1919

Solution of Magnesium Citrate - Non
Effervescent.

Yr. Bk. Am. Pharm. Assoc., v. 8, p. 93. (Pharm. Era, v. 52
(1919), p. 48.)

Discusses a preparation similar to Solution of Magnesium
Citrate but sold under another name in South America.

Horn, W. F.

1919

Liquor Magnesii Citratis.

Yr. Bk. Am. Pharm. Assoc., v. 8, p. 93. (Proc. Penn. Pharm.
Assoc., v. 42 (1919), p. 228.)

Suggests a satisfactory procedure for the preparation
of Solution of Magnesium Citrate.

Hilton, S. L. & Mueller, B.

1920

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 9, p. 405.

Among several topics discusses methods for preparing Solution of Magnesium Citrate.

Horn, W. F.

1920

Liquor Magnesii Citratis.

Drug. Circ., v. 64, p. 94.

Gives a formula for Liquor Magnesii Citratis.

Mayer, J. L.

1920

Solution of Magnesium Citrate - Analysis of.

Yr. Bk. Am. Pharm. Assoc., v. 9, p. 106. (Journ. Am. Pharm. Assoc., v. 9, p. 253.)

Gives a method for assaying Solution of Magnesium Citrate which is more rapid than that of the U.S.P.

(Editor)

1922

Solution of Magnesium Citrate.

Yr. Bk. Am. Pharm. Assoc., v. 11, p. 67.

Gives a new formula for Solution of Magnesium Citrate which has been introduced into the U.S.P.X.

(Editor)

1922

Trouble With Solution of Magnesium Citrate.

Drug. Circ., v. 66, p. 353.

In answer to the query of "E.K.P." suggests rinsing the bottles with dilute hydrochloric acid and then with water before using in order to prevent a precipitate from forming.

(Editor)

1922

Magnesium Oxide in Place of the Carbonate in Making Solution of Magnesium Citrate.

Drug. Circ., v. 66, p. 140.

In answer to the query of "W.H." explains that Magnesium oxide can be used in place of the carbonate and enables one to prepare Solution of Magnesium Citrate in a few minutes.

(Editor)

1923

Special Solution of Magnesium Citrate.

Drug. Circ., v. 67, p. 450.

In answer to the query of "R.R.P." suggests that the pharmacist follow the directions of the prescriber always.

(Editor)

1924

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 13, p. 363.

Discusses the formula and the assay of Solution of Magnesium Citrate.

(Editor)

1924

Amount of Magnesium Citrate in Official
Solution.

Drug. Circ., v. 68, p. 149.

In answer to an inquiry suggests that there is some doubt as to the form in which Magnesium Citrate exists in Solution and the amounts of the salt.

(Editor)

1924

Precipitate in Solution of Magnesium Citrate.

Drug. Circ., v. 67, p. 110.

In answer to the query of "W.N.P." discusses the precipitate in Solution of Magnesium Citrate.

England, J. W.

1924

The Excessive Acidity of The Official
Solution of Magnesium Citrate.

Am. Journ. Pharm., v. 96, p. 657.

Discusses both the acidity of the official Solution of Magnesium Citrate and the formulas of the pharmacopoeias for the manufacture of magnesium citrate solution and how they differ from each other.

(Editor)

1925

An Inexpensive "Solution of Magnesium Citrate".

Drug. Circ., v. 69, p. 466.

In answer to the query of "A.C." suggests several methods for making an inexpensive solution of Magnesium Citrate.

Scoville, W. L.

1925

Magnesium Citrate Solution.

Yr. Bk. Am. Pharm. Assoc., v. 14, p. 55. (Am. Journ. Pharm., v. 97, p. 80.)

Compares the formulas of Solution of Magnesium Citrate U.S.P. and those of the French Codex.

(Editor)

1926

Solution of Magnesium Citrate.

Drug. Circ., v. 70, p. 728.

In answer to the query of "S.D.C." suggests that the water be boiled before the addition of the syrup or sugar to avoid mold growth.

England, J. W.

1926

Solution of Magnesium Citrate U.S.P.X.

Am. Journ. Pharm., v. 97, p. 91. (Disp. U.S.A., 22 ed., p. 626; Yr. Bk. Am. Pharm. Assoc., v. 15, p. 62.)

Comments on the Acidity of Solution of Magnesium Citrate and discusses the therapeutic use of the solution.

England, J. W.

1926

Notes on the U.S.P.X.

Am. Journ. Pharm., v. 98, p. 46.

Included among other subjects, discusses Solution of Magnesium Citrate and suggests the use of Potassium Bicarbonate in the solution for the purpose of diuresis.

Kolb, P. J.

1926

Proceedings of the Local Branches.

Journ. Am. Pharm. Assoc., v. 15, p. 1144.

Comments on the precipitation of Solution of Magnesium Citrate.

(Editor)

1927

Solution of Magnesium Citrate.

Yr. Bk. Am. Pharm. Assoc., v. 16, p. 72.

Criticizes the formula of the U.S.P.X.

(Editor)

1927

Solution of Magnesium Citrate.

Drug. Circ., v. 71, p. 896.

In answer to the query of "H.C." suggests that fresh solutions of magnesium citrate be prepared at short intervals.

Neimeth, E.

1927

Formula for Magnesium Citrate Solution

Does it Call for too Much Citric Acid?

Drug. Circ., p. 332.

Discusses the formula of Mangesium Citrate Solution and the amount of Citric Acid to be used in the formula.

Seltzer, L.

1927

Formula for Magnesium Citrate Solution

Why the present formula.--

Drug. Circ., v. 71, p. 438.

Discusses the formula for Magnesium Citrate Solution and the three possible salts formed.

Silverberg, S.

1927

Formula for Magnesium Citrate Solution

New York Branch asks Reconsideration.

Drug. Circ., v. 71, p. 214.

Discusses the formula, ingredients, therapeutic use of the ingredients, and main use of Magnesium Citrate Solution.

"Wild & Woolly Westerner"

1927

The New Formula for Solution of Magnesium Citrate.

Drug. Circ., v. 71, p. 894.

Praises the present formula for Solution of Magnesium Citrate.

Barnby, H. A. & Voight, E. L.

1929

Citrate of Magnesia.

Yr. Bk. Am. Pharm. Assoc., v. 18, p. 47. (Glass container, v. 8 (1929), p. 10; through Chem. Abstr., v. 23, (1929), p. 2783.)

Discusses the prevention of Sediment Formation in Solution of Magnesium Citrate.

(Editor)

1929

Medical and Pharmaceutical Notes.

Am. Journ. Pharm., v. 101, p. 294.

Discusses Solution of Magnesium Citrate.

(Editor)

1929

Citrate of Magnesia - Solution of.

Yr. Bk. Am. Pharm. Assoc., v. 18, p. 48. (Am. Journ. Pharm., v. 101, p. 294.)

Discusses the sale of Magnesium Citrate Solution in bottles containing less than 350 cc.

Neimeth, E.

1929

Citrate of Magnesia - Solution of.

Yr. Bk. Am. Pharm. Assoc., v. 18, p. 48. (Pract. Drug., v. 47, p. 25.)

Comments on the preparation made according to the U.S.P.X., and why it has decreased in sales.

Philip, B. W.

1929

Magnesium Citrate Bottles - Refilling.

Yr. Bk. Am. Pharm. Assoc., v. 18, p. 32. (Pharm. Era, v. 66, p. 262.)

Discusses whether Citrate of Magnesia bottles can be reused.

Utech, H. P.

1929

Notes on Some Official Preparations

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 18, p. 1258.

Discusses the therapeutic value of the use of Potassium Citrate, which is contained in Solution of Magnesium Citrate, in cases of Kidney derangement.

Army, H. V. & Schaefer, H. H.

1930

The Citric Acid "Assay" of Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 19, p. 941. (Disp. U.S.A., 22 ed., p. 627; Yr. Bk. Am. Pharm. Assoc., v. 19, p. 41.)

Discusses the Assay of Citric Acid in Solution of Magnesium Citrate.

(Editor)

1930

"What Makes Citrate Precipitate?"

Drug. Circ., v. 74, p. 19.

In answer to the query of "T.H.S." attempts to explain the precipitation of the Citrate.

(Editor)

1930

Tablet for Producing Solution of Magnesium Citrate.

Drug. Circ., v. 74, p. 18.

Discusses the preparation and storing of Solution of Magnesium Citrate.

Lowry, L.

1930

Magnesium Citrate That Will Keep.

Drug. Circ., v. 74, p. 24.

Discusses Magnesium Citrate Solution.

Rees, E. W.

1930

Solution of Magnesium Citrate.

Am. Journ. Pharm., v. 102, p. 496. (Disp. U.S.A., 22 ed., p. 627.)

Comments on the preparation and tests performed on various solutions.

Stanford, F. G.

1930

Solution of Magnesium Citrate That Will Keep.

Drug. Circ., v. 74, p. 46.

Suggests a few hints for keeping Solution of Magnesium Citrate.

Campbell, W. G.

1931

Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 20, p. 526.

Discusses the adulteration of Magnesium Citrate Solution.

(Editor)

1931

Laboratory Reports.

Improved Solution of Magnesium Citrate

Drug. Circ., v. 75, p. 82.

Gives a modified formula for preparing Liquor Magnesii Citratis.

(Editor)

1931

Abstract of Thesis Presented to the Faculty of
The Philadelphia College of Pharmacy and Science.

Am. Journ. Pharm., v. 103, p. 44.

Among other items includes assay of Solution of Magnesium Citrate (Abstract of Thesis presented by H. W. Haussmann).

(Editor)

1931

Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 20, p. 75.

Discusses the formula of Solution of Magnesium Citrate and gives a modified formula.

Kaplan, B.

1931

Solution of Magnesium Citrate that Will Keep.

Drug. Circ., v. 75, p. 21.

Suggests heating the solution will produce a Solution that will keep for months.

Kleinschmidt, F.

1931

Solution of Magnesium Citrate.

Yr. Bk. Am. Pharm. Assoc., v. 20, p. 37. (Journ. Am. Pharm. Assoc., v. 20, p. 47.)

Comments on the formula of the U.S.P.X.

Oakley, M. & Krantz, J. C.*

1932

A Physiochemical Study of Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 21, p. 132. (Disp. U.S.A., 22 ed., p. 626.)

Comments on the relationship existing between the acid taste, hydrogen-ion concentration and acidity of Solution of Magnesium Citrate.

(Editor)

1933

Solution of Magnesium Citrate That Will Keep.

Drug. Circ., v. 77, p. 30.

In answer to an inquiry suggests that the water be boiled before using.

(Editor)

1933

Solution of Magnesium Citrate That is Different.

Drug. Circ., v. 77, p. 27.

In answer to the query of "F.F.B." suggests changing the proportions of the ingredients in the Solution in order to improve the solution.

* Disp. U.S.A., 22 ed., credits Kleinschmidt.

(Editor)

1933

Solution of Magnesium Citrate.

Drug. Circ., v. 77, p. 56.

Suggests that the entire bottle be served at one time.

Oakley, M. & Krantz, J. C.

1933

Magnesium Citrate - Physico - Chemical Study of.

Yr. Bk. Am. Pharm. Assoc., v. 22, p. 180. (Journ. Am. Pharm. Assoc., v. 21, p. 132.)

Discusses the hydrogen-ion concentration of Solution of Magnesium Citrate.

(Editor)

1934

To Keep Solution of Magnesium Citrate.

Drug. Circ., v. 78, p. 38.

In answer to an inquiry offers a suggestion for keeping Solution of Magnesium Citrate.

Tice, L. F.

1934

Scientific and Technical Abstracts.

Am. Journ. Pharm., v. 108, p. 397.

Among other items includes a study of Solution of Magnesium Citrate and discusses solutions as prepared by A. Osol and L. F. Tice.

Editor

1935

Liquor Magnesii Citratis.

Journ. Am. Pharm. Assoc., v. 24, p. 789.

Discusses a method for testing for the presence of citric acid in Solution of Magnesium Citrate.

(Editor)

1936

Solution of Magnesium Citrate.

Drug. Circ., v. 80, p. 35.

In answer to a query of "K.W.T." suggests that the U.S.P. formula be used in preparing the above and also discusses methods for preventing mold growth in the Solution.

Osai, A. & Tice, L. F.

1936

A Study of Solution of Magnesium Citrate.

Journ. Am. Pharm. Assoc., v. 25, p. 1936.

Discusses the tests performed on Solution of Magnesium Citrate and compares the free acidity values of various solutions.

Reindollar, W. F. & Chancey, H. E.

1936

Magnesium Citrate - Modified Assay for Solution of.

Pharm. Abstr., v. 2, p. 213. (Journ. Am. Pharm. Assoc., v. 25, p. 95.)

Criticizes the U.S.P. IX method for the assay of Magnesium Citrate and proposes another procedure.

Osol, A. & Tice, L. F.

1937

Magnesium Citrate - Solution of, Study of.

Pharm. Abstr., v. 3, p. 135. (Journ. Am. Pharm. Assoc., v. 25, p. 1108.)

Discusses the stability of Solution of Magnesium Citrate when made with less citric acid than that required by the U.S.P. formula and discusses methods to prevent precipitation in the solution.

Crossen, G. E. & Rogers, C. H.

1938

A Study of The Factors Influencing the Stability of Liquor Magnesii Citratis, U.S.P. XI.

Journ. Am. Pharm. Assoc., v. 27, p. 119.

Discusses the factors influencing the stability of Solution of Magnesium Citrate as a result from experiments performed on a series of six solutions containing Magnesium Citrate.

(Editor)

1939

The New "Second U.S.P. XI Supplement."

Am. Journ. Pharm., v. 111, p. 319.

Discusses the requirement of Solution of Magnesium Citrate.

Norbo, R.

1939

Magnesium Citrate - Dissociation of.

Pharm. Abstr., v. 5, p. 322. (Skand. Arch. Physiol., v. 80, p. 341; through Chem. Abstr., v. 33, p. 454.)

Suggests a procedure for the determination of the p.H. Value of Solution of Magnesium Citrate.

(Editor)

1940

Report of the Sub-Committee on Pharmacy of the
U.S.P. Committee of the College.

Am. Journ. Pharm., v. 112, p. 264.

Among other subjects discusses Liquor Magnesii Citratis.

Bell, F. K.

1942

Estimation of Magnesium in Solution of Citrate
of Magnesia.

Journ. Am. Pharm. Assoc., v. 31, p. 312.

Discusses the assay of magnesium oxide in Solution of
Citrate of Magnesia according to the oxine method.

LIST OF JOURNALS CONSULTED

1. Am(eric)an Journ(al of) Pharm(acy.)
Vol. 1-114; 1825-1942.
2. Am(eric)an Pharm(aceutical) Assoc(iation) Proc(eedings).
Vol. 1-59; 1851-1911.
3. Drug(gist) Circ(ular).
Vol. 1-84; 1857-1940.
4. Journ(al of the) Am(eric)an Pharm(aceutical) Assoc(iation).
Vol. 1-28; 1912-1939.
Vol. 29-32; 1940-1943. (Scientific Edition).
Vol. 1-4; 1940-1943. (Practical Pharmacy
Edition).
5. Pharm(aceutical) Abstr(acts).
Vol. 1-6; 1935-1940.
6. Y(ea)r B(oo)k (of the) Am(eric)an Pharm(aceutical)
Assoc(iation).
Vol. 1-23; 1912-1934.

LIST OF BOOKS CONSULTED

- An American Physician, The Eclectic and General Dispensatory,
1 ed., 1827.
- Coxe, J. R., The American Dispensatory, 1 ed., 1806; 4 ed.,
1818; 6 ed., 1825; 7 ed., 1827; 8 ed., 1830;
9 ed., 1831.
- King, J., The American Dispensatory, 6 ed., 1864; 8 ed.,
1872; 10 ed., 1875; 15 ed., 1881; 16 ed.,
1889; 18 ed., 1898.
- King, J. & Newton, R., The Eclectic Dispensatory of the
U.S.A., 1 ed., 1852.
- Stille, A. & Maisch, J. M., The National Dispensatory, 1 ed.,
1877; 2 ed., 1879; 3 ed., 1884; 5 ed., 1894.
- Thachter, J., The American New Dispensatory, 1 ed., 1810;
2 ed., 1813; 4 ed., 1821.
- Wood, G. B., & Bache, F., The Dispensatory of the United
States of America., 1 ed., 1833; 2 ed., 1834;
3 ed., 1836; 4 ed., 1839; 5 ed., 1843; 6 ed.,
1845; 7 ed., 1847; 8 ed., 1849; 9 ed., 1851;
10 ed., 1854; 11 ed., 1858; 12 ed., 1869;
13 ed., 1871; 14 ed., 1879; 15 ed., 1883;
16 ed., 1892; 17 ed., 1894; 18 ed., 1899;
19 ed., 1907; 20 ed., 1918; 21 ed., 1926;
22 ed., 1936.

THE PHARMACOPOEIA OF THE UNITED STATES
OF AMERICA

(O - XII)

(1820-1940)

The Procedures for The Preparation of
Liquor Magnesia Citratis.

U.S.P. 1850

p. 167

Liquor Magnesia Citratis
Solution of Citrate of Magnesia.
Take of Carbonate of Magnesia five drachms;
Citric Acid seven drachms and a half;
Syrup of Citric Acid two fluidounces;
Water a sufficient quantity.

Dissolve the Citric Acid in four fluidounces of water and add to the solution four drachms of the Carbonate of Magnesia, previously rubbed with three fluidounces of Water. When the reaction has ceased, filter the solution into a strong glass bottle of the capacity of twelve fluidounces into which the Syrup of Citric Acid has been previously introduced. Rub the remaining Carbonate of Magnesia with two fluidounces of Water, and pour the mixture into the bottle which is then to be tightly corked, and secured with twine. Lastly, shake the mixture occasionally until it becomes transparent.

U.S.P. 1860

p. 224

Liquor Magnesia Citratis.
Solution of Citrate of Magnesia.
Take of Magnesia one hundred and twenty grains;
Citric Acid four hundred and fifty grains;
Syrup of Citric Acid two fluidounces;
Bicarbonate of Potassa forty grains;
Water a sufficient quantity.

Dissolve the Citric Acid in four fluidounces of water, and having added the Magnesia, stir until it is dissolved. Filter the solution into a strong twelve ounce bottle, containing the Syrup of Citric Acid. Then add the Bicarbonate of Potassa and sufficient Water to nearly fill the bottle, which must be closed with a cork, secured with twine. Lastly, shake the mixture occasionally until the Bicarbonate is dissolved.

U.S.P. 1870

p. 217

Liquor Magnesii Citratis.
Solution of Citrate of Magnesium.
Take of Carbonate of Magnesium two hundred grains;
Citric Acid four hundred grains;
Syrup of Citric Acid two fluidounces;
Bicarbonate of Potassium forty grains;
Water a sufficient quantity.

Dissolve the Citric acid in four fluidounces of Water, and, having added the Carbonate of Magnesium, stir until it is dissolved. Filter the solution into a strong twelve-ounce bottle, containing the Syrup of Citric Acid. Then add the Bicarbonate of Potassium and enough Water to nearly fill the bottle, which must be closed with a cork secured with twine. Lastly, shake the mixture occasionally until the Bicarbonate is dissolved.

U.S.P. 1880

p. 203

Liquor Magnesii Citratis.
Solution of Citrate of Magnesium.

	Grains	Grammes
Carbonate of Magnesium, two hundred grains	200	13.00
Citric Acid, four hundred grains	400	26.00
Syrup of Citric Acid, twelve hundred grains	1200	80.00
Bicarbonate of Potassium, in crystals, thirty grains	30	2.00
Water, a sufficient quantity.		

Dissolve the Citric Acid in two thousand (2000) grains, or about one hundred and twenty (120) grammes of Water, and, having added the Carbonate of Magnesium, stir until it is dissolved. Filter the solution into a strong bottle of the capacity of twelve (12) fluidounces, or about three hundred and sixty (360) cubic centimeters, containing the Syrup of Citric Acid. Then add enough Water, previously boiled and filtered, to nearly fill the bottle, drop in the Bicarbonate of Potassium and immediately close the bottle with a cork, which must be secured with twine. Lastly, shake the mixture occasionally until the Bicarbonate of Potassium is dissolved.

U.S.P. 1890

p. 237

Liquor Magnesii Citratis
Solution of Magnesium Citrate

Magnesium Carbonate, fifteen grammes	15 Gm.
Citric Acid, thirty grammes	30 Gm.
Syrup of Citric Acid, one hundred and twenty cubic centimeters	120 c.c.
Potassium Bicarbonate, two and one-half grammes	2.5 Gm.
Water, a sufficient quantity.	

Dissolve the Citric Acid in one hundred and twenty (120) cubic centimeters of Water, and, having added the Magnesium Carbonate, stir until it is dissolved. Filter the solution

into a strong bottle of the capacity of about three hundred and sixty (360) cubic centimeters containing the Syrup of Citric Acid. Then add enough water to nearly fill the bottle. Stopper with a cork, and secure it with twine. Lastly, shake the mixture occasionally, until the Potassium Bicarbonate is dissolved.

U.S.P. 1900

p. 267

Liquor Magnesii Citratis
Solution of Magnesium Citrate

Magnesium Carbonate, fifteen grammes	15.0 Gm.
Citric Acid, thirty-three grammes	33.0 Gm.
Syrup of Citric Acid, sixty cubic centimeters	60.0 cc.
Potassium Bicarbonate, two and one-half grammes	2.5 Gm.
Water, a sufficient quantity.	

Dissolve the Citric Acid in one hundred and twenty cubic centimeters of Water, and, having added the Magnesium Carbonate, stir until it is dissolved. Filter the solution into a strong bottle of the capacity of about three hundred and sixty cubic centimeters containing the Syrup of Citric Acid. Then add enough Water to nearly fill the bottle, drop in the Potassium Bicarbonate, and immediately stopper the bottle securely. Lastly, shake the mixture occasionally until the Potassium Bicarbonate is dissolved. This solution should be freshly prepared when wanted.

U.S.P. 1910

p. 248

Liquor Magnesii Citratis
Solution of Magnesium Citrate
Liq. Mag. Cit.

One hundred mls of the Solution contains magnesium Citrate corresponding to not less than 1.5 Gm. of magnesium oxide (MgO = 40.32).

Magnesium Carbonate, fifteen grammes	15.0 Gm.
Citric Acid, thirty-three grammes	33.0 Gm.
Syrup, sixty milliliters	60.0 mls.
Purified Talx, five grammes	5.0 Gm.
Oil of Lemon, one-tenth of a milliliter	0.1 mil.
Potassium Bicarbonate, two and five-tenths grammes	2.5 Gm.
Water, a sufficient quantity.	

Dissolve the citric acid in one hundred and fifty mls of hot water in a suitable dish, and, having added the magnesium carbonate, previously mixed with one hundred mls of water, stir until it is dissolved. Then add the syrup, heat the mixed liquids to the boiling point, immediately introduce the oil of lemon, previously triturated with the purified talc, and filter the mixture, while hot, into a strong bottle (previously rinsed with boiling water) of suitable capacity. Introduce enough boiled water to make the product measure three hundred and fifty mls. Stopper it with purified cotton until cold, then drop in the potassium bicarbonate, and immediately stopper the bottle securely. Lastly, shake the solution occasionally until the potassium bicarbonate is dissolved. Keep the bottle on its side in a cool place, preferably in a refrigerator.

Note:- In this process the 2.5 Gm. of Potassium Bicarbonate may be replaced by 2.1 Gm. of sodium bicarbonate, preferably in tablet form.

Add 1 mil of glacial acetic acid and 3 mls of an aqueous solution of potassium acetate (1 in 2) to 10 mls of Solution of Magnesium Citrate, shake the mixture vigorously, then gently rub the sides of the test tube with a glass rod for a few minutes and allow to stand for one hour; no white crystalline precipitate, soluble in ammonia water, is produced (tartaric acid).

Dilute 2 mls of the Solution with 8 mls of distilled water and add 5 drops of hydrochloric acid and 1 mil of barium chloride T.S.; no turbidity is produced within one minute (Sulphate).

Dilute 2 mls of the Solution with 8 mls of distilled water and add 5 mls of ammonium oxalate T.S.; not more than a slight turbidity is produced (calcium).

Assay:- Transfer 10 mls of Solution of Magnesium Citrate, accurately measured, to a platinum or porcelain dish, evaporate to dryness, and ignite until most of the carbonaceous matter has burned off. Add to the residue 20 mls of diluted hydrochloric acid, heat on a water bath for fifteen minutes, filter if necessary, and wash the residue thoroughly with hot water. To the combined filtrate and washings, which should measure about 100 mls, add an excess of sodium phosphate T.S. (about 20 mls)., then add ammonia water gradually, with constant stirring, until slightly alkaline, allow to stand for 10 minutes, add 30 mls of ammonia water, and allow to stand for twelve hours. Collect the precipitate on a filter, wash it with dilute ammonia water (1 volume of ammonia water to 3 volumes of water) until 10 mls of the washings, when acidu-

lated with nitric acid, yield not more than an opalescence on the addition of a few drops of silver nitrate T.S. Dry, and ignite the constant weight. The weight of the magnesium pyrophosphate so obtained is not less than 0.414 Gm., indicating an equivalent of not less than 1.5 Gm. of magnesium oxide in 100 mils of the Solution.

Average dose - Metric, 350 mils.
Apothecaries, 12 fluidounces.

U.S.P. 1920

p. 218

Liquor Magnesii Citratis
Solution of Magnesium Citrate
Liq. Mag. Cit.

Solution of Magnesium Citrate contains, in each 100 cc., magnesium citrate corresponding to not less than 1.5 Gm. of MgO.

Magnesium Carbonate	15.00 Gm.
Citric Acid	35.0 Gm.
Syrup	60.0 cc.
Purified Talc	5.0 Gm.
Oil of Lemon	0.1 cc.
Potassium Bicarbonate	2.5 Gm.
Distilled Water, a sufficient quantity	

To make 350 cc.

Dissolve the citric acid in 150 cc. of hot distilled water in a suitable dish, and, having added the magnesium carbonate, previously mixed with 100 cc. of distilled water, stir until it is dissolved. Then add the syrup, heat the mixed liquids to the boiling point, immediately introduce the oil of lemon, previously triturated with the purified talc, and filter the mixture, while hot, into a strong bottle (previously rinsed with boiling water) of suitable capacity. Add enough boiled distilled water to make the product measure 350 cc. Stopper the bottle with purified cotton, allow to cool, drop in the potassium bicarbonate, and immediately stopper the bottle securely. Lastly, shake the solution occasionally until the potassium bicarbonate is dissolved. Keep the bottle on its side in a cool place, preferably in a refrigerator.

Note:- In this process the 2.5 Gm. of potassium bicarbonate may be replaced by 2.1 Gm. of sodium bicarbonate, preferably in tablet form.

Description and physical properties - A slightly yellow, clear, effervescent liquid, having a sweet, acidulous taste and a lemon flavor.

Tests for purity - Add 1 cc. of facial acetic acid and 3 cc. of an aqueous solution of potassium acetate (1 in 2) to 10 cc. of Solution of Magnesium Citrate, shake the mixture vigorously, then gently rub the sides of the test tube with a glass rod for a few minutes, and allow to stand for one hour: no white crystalline precipitate soluble in ammonia T.S. is produced (tartaric acid).

Dilute 2 cc. of the Solution with 8 cc. of distilled water, and add 5 drops of hydrochloric acid and 1 cc. of barium chloride T.S.: no turbidity is produced within one minute (sulphate).

Dilute 2 cc. of the Solution with distilled water to 45 cc., add 5 cc. of ammonium oxalate T.S., and mix well; the resulting turbidity, if any, is not greater than the turbidity in a control test made with 1 cc. of a solution prepared as follows: Dissolve 1 Gm. of calcium carbonate, previously dried to constant weight at 200° C., in 1 cc. of acetic acid and 5 cc. of distilled water. Boil for about one minute, and dilute with distilled water to 100 cc. (calcium).

Boil down exactly 10 cc. of the Solution to about 5 cc. to expel carbon dioxide, dilute with 15 cc. of distilled water, and titrate with half-normal sodium hydroxide, using phenolphthalein T.S. as indicator: it requires not less than 9.5 cc. of the alkali for neutralization (minimum of acidity). Concentrate the liquid, and transfer it completely with the aid of a little distilled water to a platinum or porcelain crucible, evaporate to dryness, and proceed as directed under the assay for alkali salts of organic acids: not less than 28 cc. of half-normal sulphuric acid should be consumed (minimum of total citric acid).

Assay for magnesium oxide - measure exactly 10 cc. of Solution of Magnesium Citrate, transfer to a platinum or porcelain dish, evaporate to dryness, and ignite until most of the carbonaceous matter has burned off. Add to the residue 20 cc. of diluted hydrochloric acid, heat on a water bath for fifteen minutes, filter if necessary, and wash the residue thoroughly with hot distilled water. To the combined filtrate and washings, which should measure about 100 cc., add an excess of sodium phosphate T.S. (about 20 cc.), then gradually add ammonia T.S. with constant stirring until slightly alkaline. After ten minutes add 30 cc. of ammonia T.S., and allow the mixture to stand for twelve hours. Then filter, and wash the

precipitate with a mixture of 1 volume of ammonia T.S. and 19 volumes of distilled water until free from chloride. Dry, and ignite to constant weight. The weight of the magnesium pyrophosphate ($Mg_2P_2O_7$) so obtained is not less than 0.414 Gm., indicating an equivalent of not less than 1.5 Gm. of MgO . in 100 cc. of the Solution.

Average Dose, Metric, 350 cc.
Apothecaries, 12 fluidounces.

U.S.P. 1930

p. 214

Liquor Magnesii Citratis
Solution of Magnesium Citrate
Liq. Mag. Cit.

Solution of Magnesium Citrate contains in each 100 cc. an amount of magnesium citrate corresponding to not less than 1.6 Gm. and not more than 1.9 Gm. of MgO .

Magnesium Carbonate	15	Gm.
Citric Acid	33	Gm.
Syrup	60	cc.
Purified Talc	5	Gm.
Oil of Lemon	0.1	cc.
Potassium Bicarbonate	2.5	Gm.
Distilled water, a sufficient quantity	_____	

To make 350 cc.

Dissolve the citric acid in 150 cc. of hot distilled water in a suitable dish, and, having added the magnesium carbonate, previously mixed with 100 cc. of distilled water, stir until it is dissolved. Then add the syrup, heat the mixed liquids to the boiling point, immediately add the Oil of Lemon, previously triturated with the purified talc, and filter the mixture, while hot, into a strong bottle (previously rinsed with boiling distilled water) of suitable capacity. Add enough boiled distilled water to make the product measure 350 cc. Stopper the bottle with purified cotton, allow to cool, drop in the potassium bicarbonate and immediately stopper the bottle securely. Lastly, shake the solution occasionally until the potassium bicarbonate is dissolved. Keep the bottle on its side in a cool place, preferably in a refrigerator.

Note:- In this process the 2.5 Gm. of Potassium Bicarbonate may be replaced by 2.1 Gm. of Sodium Bicarbonate, preferably in tablet form, and, in addition, the solution may be carbonated by the use of, CO_2 , under pressure.

The stability of Solution of Magnesium Citrate is improved by adjusting the quantity of magnesium carbonate for each 350 cc. of Solution so that it corresponds to 6.0 Gm. of MgO and by sterilizing the Solution after it has been bottled.

Description and physical properties - a slightly yellow, clear, effervescent liquid, having a sweet, acidulous taste and a lemon flavor.

Tests for identity - Solution of Magnesium Citrate responds to the tests for magnesium. To 5 cc. of Solution of Magnesium Citrate add 1 cc. of Potassium permanganate T.S. and 5 cc. of mercuric sulphate T.S. and heat the solution: a white precipitate is formed.

Tests for purity - add 1 cc. of glacial acetic acid and 3 cc. of an aqueous solution of potassium acetate (1 in 2) to 10 cc. of Solution of Magnesium Citrate, shake the mixture vigorously, then gently rub the sides of the test tube with a glass rod for a few minutes, and allow to stand for one hour: no white crystalline precipitate soluble in ammonia T.S. is produced (tartaric acid).

Dilute 2 cc. of the solution with 2 cc. of distilled water, and add 5 drops of hydrochloric acid and 1 cc. of barium chloride T.S.: no turbidity is produced within one minute (sulphate).

Dilute 2 cc. of the Solution with 8 cc. of distilled water, and add 5 drops of nitric acid and 1 cc. of silver nitrate T.S.: not more than a faint turbidity results (Chloride).

Transfer from a pipette exactly 10 cc. of Solution of Magnesium Citrate to a 250 cc. beaker. Gently agitate the contents for two minutes, then dilute with 30 cc. of distilled water. Add 3 drops of phenolphthalein T.S. and normal sodium hydroxide until a permanent pink color is just produced, and then acidify with 4 drops of normal hydrochloric acid. Add 20 cc. of calcium chloride T.S. and concentrate by boiling, to about 30 cc., stirring constantly with a rubber-tipped glass rod during the boiling. While hot, transfer the precipitate completely to a filter of from 9 to 11 cm. in diameter with the aid of small quantities of boiling distilled water. Then wash the precipitate five times with boiling distilled water. Collect the filtrate and washings in a 150 cc. beaker. Concentrate the filtrate and washings, by boiling, to about 20 cc. Add ammonia T.S., drop by drop, until a distinct red color is produced and then concentrate to about 10 cc. While hot, transfer the precipitate completely to a filter of from 7 to 9 cm. in diameter with the aid of small

quantities of boiling distilled water and wash the precipitates six times with about 5 cc. portions of boiling distilled water. Dry the two filters with the precipitates and incinerate them together in a loosely-covered platinum crucible, heating at first at a low temperature until the precipitates are well charred and then removing the cover and raising the temperature until the residue is practically white. If a gas flame is used, it must not come in contact with the mass in the crucible. Cool, place the crucible with its contents in a suitable beaker, add about 30 cc. of distilled water, and then exactly 50 cc. of half-normal hydrochloric acid. When the residue has dissolved, remove the crucible, rinsing it well with distilled water into the beaker. Add about 100 cc. of distilled water, cover the beaker with a watch glass, and boil gently for about ten minutes. Cool and titrate the excess of acie with half-normal sodium - hydroxide, using phenolphthalein T.S. as the indicator. Not less than 26 cc. of half-normal hydrochloric acid is consumed (minimum of total Citric acid).

Assay for magnesium oxide - Transfer to a beaker of about 200 cc. capacity exactly 10 cc. of Solution of Magnesium Citrate which has been previously freed from excessive carbon dioxide by repeated pouring. Add 100 cc. of distilled water, 2 cc. of hydrochloric acid, 20 cc. of sodium phosphate T.S., and 2 drops of Methyl Red T.S., add ammonia T.S., a few drops at a time with constant stirring until the solution becomes faintly yellow. Allow the mixture to stand for ten minutes, add 40 cc. of stronger ammonia T.S. with constant stirring, and allow the mixture to stand for two hours or over night. Collect the precipitate in a weighed Gooch crucible and wash with a mixture of 1 volume of ammonia T.S. and 3 volumes of distilled water until free from chloride. Dry and ignite to a constant weight. The weight of magnesium pyrophosphate ($Mg_2P_2O_7$) so obtained when multiplied by 3.621 gives the amount of magnesium oxide represented by 100 cc. of the solution.

Average dose - Metric, 200 cc.
Apothecaries, 7 fluidounces.

U.S.P. 1940

p. 271

Liquor Magnesii Citratis
Solution of Magnesium Citrate
Liq. Mg. Cit.

Solution of Magnesium Citrate contains, in each 100 cc., an amount of magnesium citrate corresponding to not less than 1.6 Gm. and not more than 1.9 Gm. of MgO .

Magnesium Carbonate	15	Gm.
Citric Acid	33	Gm.
Syrup	60	cc.
Purified Talc	5	Gm.
Oil of Lemon	0.1	cc.
Potassium Bicarbonate	2.5	Gm.
Distilled Water, a sufficient quantity,	_____	

To make 350 cc.

Dissolve the citric acid in 150 cc. of hot distilled water in a suitable dish, and, having added the magnesium carbonate, previously mixed with 100 cc. of distilled water, stir until it dissolves. Then add the syrup, heat the mixed liquids to the boiling point, immediately add the oil of lemon, previously triturated with the purified talc, and filter the mixture, while hot, into a strong bottle (previously rinsed with boiling distilled water) of a suitable capacity. Add enough boiled distilled water to make the product measure 350 cc. Stopper the bottle with purified cotton, allow to cool, drop in the potassium bicarbonate, and immediately stopper the bottle securely. Lastly, shake the solution occasionally until the potassium bicarbonate is dissolved. Keep the bottle on its side in a cool place, preferably in a refrigerator.

Note - In this process the 2.5 Gm. of potassium bicarbonate may be replaced by 2.1 Gm. of sodium bicarbonate, preferably in tablet form and, in addition, the Solution may be carbonated by the use of CO_2 , under pressure.

The stability of Solution of Magnesium Citrate is improved by adjusting the quantity of magnesium carbonate for each 350 cc. of Solution so that it corresponds to 6.0 Gm. of MgO and by sterilizing the Solution after it has been bottled.

Description - Solution of Magnesium Citrate is a colorless to slightly yellow, clear, effervescent liquid, having a sweet acidulous taste and a lemon flavor.

Identification -

A: Solution of Magnesium Citrate responds to the magnesium, page 590.

B: To 5 cc. of Solution of Magnesium Citrate add 1 cc. of potassium permanganate T.S. and 5 cc. of mercuric sulfate T.S., and heat the solution: a white precipitate is formed.

Chloride - A 2-cc. portion of Solution of Magnesium Citrate shows no more chloride than corresponds to 0.3 cc. of fiftieth normal hydrochloric acid, page 626.

Sulfate - A 2-cc. portion of Solution of Magnesium Citrate shows no more sulfate than corresponds to 0.3 cc. of fiftieth - normal sulfuric acid, page 626.

Tartaric Acid - Add 1 cc. of glacial acetic acid and 3 cc. of an aqueous solution of potassium acetate (1 in 2) to 10 cc. of Solution of Magnesium Citrate in a test tube, shake the mixture vigorously, then gently rub the inner wall of the test tube with a glass rod for a few minutes, and allow to stand for 1 hour: no white, crystalline precipitate soluble in ammonia T.S. is produced.

Minimum of total citric acid - Measure accurately 10 cc. of Solution of Magnesium Citrate into a 250 cc. beaker. Gently agitate the contents for 2 minutes, then dilute with 30 cc. of distilled water. Add 3 drops of phenolphthalein T.S. and just enough normal sodium hydroxide to give the liquid a persistent pink color, and then acidify with 4 drops of normal hydrochloric acid. Add 20 cc. of Calcium chloride T.S., and concentrate, by boiling, to about 30 cc., stirring constantly with a rubber-tipped glass rod during the boiling. Completely transfer the precipitate from the hot mixture to a filter of from 9 to 11 cm. in diameter with the aid of small quantities of boiling distilled water. Then wash the precipitate five times with boiling distilled water. Collect the filtrate and washings in a 150 cc. beaker and concentrate the solution by boiling, to about 20 cc. add sufficient ammonia T.S., drop by drop, to give the liquid a distinct red color, and then concentrate to about 10 cc. Transfer the precipitate completely from the hot mixture to a filter of from 7 to 9 cm. in diameter with the aid of small quantities of boiling distilled water, and wash the precipitate six times with 5 cc. portions of boiling distilled water.

Dry the two filters with the precipitates, and incinerate them together in a loosely covered platinum crucible, heating at first at a low temperature until the precipitates are well charred, and then removing the cover and raising the temperature until the residue is nearly white. If a gas flame is used, it must not come in contact with the mass in the crucible. Cool, place the crucible with its contents in a suitable beaker, add about 30 cc. of distilled water, and then exactly 50 cc. of half-normal hydrochloric acid. When the residue has dissolved, remove the crucible, rinsing it well with distilled water, cover the beaker with a watch glass, and boil gently for 10 minutes. Cool and titrate the excess of acid with half-normal sodium hydroxide, using phenolphthalein

T.S. as the indicator. Not less than 26 cc. of half-normal hydrochloric acid is consumed.

Assay for magnesium oxide - Transfer to a beaker of about 200 cc. capacity exactly 10 cc. of Solution of Magnesium Citrate which has been previously freed from excessive carbon dioxide by repeated pouring. Add 100 cc. of distilled water, 2 cc. of hydrochloric acid, 20 cc. of sodium phosphate T.S., and 2 drops of Methyl Red T.S., add ammonia T.S., a few drops at a time, with constant stirring, until the solution becomes faintly yellow, allow the mixture to stand for 10 minutes, add 40 cc. of stronger ammonia T.S., with constant stirring, and allow the mixture to stand for 2 hours or over night. Collect the precipitate in tared Gooch crucible, and wash with a mixture of 1 volume of ammonia T.S. and 3 volumes of distilled water until free from chloride. Dry and ignite to constant weight.

The weight of magnesium pyrophosphate ($Mg_2P_2O_7$) so obtained, multiplied by 3.621, indicates the weight of magnesium oxide represented by 100 cc. of the solution.

Average dose - Metric, 200 cc.
Apothecaries, 7 fluidounces.

SUMMARY OF THE INGREDIENTS IN LIQUOR MAGNESIAE CITRATIS

Pharmacopoeias

Ingredients	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940
Carbonate of* Magnesia				5 dr.		200 gr.	200 gr. 13 Gm.	15 Gm.	15 Gm.	15 Gm.	15 Gm.	15 Gm.	15 Gm.
Magnesia					120 gr.		400 gr. 26 Gm.	30 Gm.	33 Gm.	33 Gm.	35 Gm.	33 Gm.	33 Gm.
Citric Acid				7½ dr.	450 gr.	400 gr.	80 Gm.	120 cc.	60 cc.				
Syrup of Citric Acid				2 fl.oz.	2 fl.oz.	2 fl.oz.	1200 gr. 80 Gm.						
Bicarbonate of** Potassa					40 gr.	40 gr.	30 gr. 2 Gm.	2.5 Gm.	2.5 Gm.	2.5 Gm.	2.5 Gm.	2.5 Gm.	2.5 Gm.
Purified Talc										5 Gm.	5 Gm.	5 Gm.	5 Gm.
Oil of Lemon										0.1 mil	0.1 cc.	0.1 cc.	0.1 cc.
Syrup										60 mils	60 cc.	60 cc.	60 cc.
Water				q.s. ad Ca 12 fl.oz.	q.s. ad Ca 12 fl.oz.	q.s. ad Ca. 12 fl.oz.	q.s. ad Ca 360 cc.	q.s. ad Ca 360 cc.	q.s. ad Ca 350 mils	q.s. ad Ca 350 mils			
Distilled Water													q.s. ad 350 cc.

* Carbonate of Magnesium in 1870; in 1890 was changed to magnesium carbonate.

** Bicarbonate of Potassium in 1870; potassium Bicarbonate in 1890.

APPROVED BY

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DATE

Sept. 11, 1964.