BIBLIOGRAPHY OF
GOSSYPII RADICIS CORTEX

By

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A Thesis Submitted for the Degree of

GRADUATE IN PHARMACY

University of Wisconsin

1927

Bouchelle, __. 1840.

(Cotton Root).

West. Med. Jour. Med. & Surg., Aug. 1840, , p. . (U.S. Dispens., 13 ed., p. 437.)

Gives uses, preparations, dose, and a description of the drug.

Frost, H.R. 1850.

(Cotton Root).

Charleston Med. Jour., , p. . (U.S. Dispens., 13 ed., p. 437.)

Gives uses, preparation, dose and description of the drug.

Shaw, J.T. 1855.

Observations on the Root of Gossypium (Herbaceum or Cotton Plant).

Nashv. Jour. Med. & Surg., p. . (Am. Jour. Pharm., 27, p. 419. (U.S. Dispens., 13 ed., p. 437.)

Comments favorably in a detailed way as to the therapeutic value of cotton root bark. Preparations of the drug are also discussed.

Battey, R. 1856.

Gossypium Herbaceum.

Am. Jour. Pharm., 28, p. 401.

Gives detailed information regarding the entire plant, "Gossypium Herbaceum" discussing which part of the plant is the most valuable therapeutically.

Royle, J.F. 1858.

Cotton Root Bark.

Am. Journ. Pharm., 30, p. 339. (U.S. Dispens., 15 ed., p. 921.)

Gives description, uses, dose, physiological effect, of cotton root bark and preparations.

Cornwell, H.S. 1861.

Cotton Plant Root.

Phila. Eclec. Med. Jour., , p. . (Druggists Circ., 5, p. 58.)

Comments upon the therapeutic value of cotton root, giving its mode of action, indications and contraindications for use.

Shaw, J.T. 1861.

Cotton Root.

Nashville Jour., , p. . (Journ. Mat. Med., 3, pp. 21 & 59.)

Cotton root is here discussed as a parturient. States that its effect is attended without pain, that it is slightly narcotic and valuable also as a tonic.

King, J. 1864.

Gossypium Herbaceum.

Am. Dispens., 6 ed., p. 462; ibid., 10 ed., p. 401.

Mentions the properties and uses of cotton root bark, preparations used and results obtained.

Perieria, J. 1866.

Gossypii Radix.

Mat. Med., 3 ed., p. 793.

Discusses the uses of cotton root and states that the drug was first used by physicians of the southern United States.

Weatherby, C.A. 1866.

Cotton Root.

Atlanta Med. & Surg. Journ., , p. . (U.S. Dispens., 13 ed., p. 437.)

Gives description, uses, dose and preparations of the drug.

_____ 1868,

Gossyphium.

Med. & Surg. Reporter, , p. . (Journ. Mat. Med., 8, p. 59.)

States that some regard the action of this medicine as a parturefacient and emmenagogue, superior to Ergot, being sure, speedy and safe in difficult labor, and also controlling the irregularities of females and alleviating their peculiar monthly suffering.

Bellamy, __. 1868.

Gossypium as an Emmenagogue and Parturifacient.

Atlanta Med. & Surg. Jour., , p. . (Drugg. Circ., 11, p. 311.)

Discusses the efficiency of cotton root as an auxilliary to labor, its use as an Emmenagogue, etc. States the proper time of the year for gathering the drug and compares its systematic action with that of Ergot.

Porcher, F.P. 1869.

Cotton.

Resources of Southern Fields and Forests, New ed., p. 105.

Discusses the use of the plant in general and speaks of its uses and the root as an Emmenagogue and parturient.

Cotton, K. 1873.

Extract of Cotton Bark.

Drugg. Circ., 17, p. 48.

Gives information regarding the preparation of cotton root bark extract.

Maisch, J.M. 1875.

Gossypii Radicis Cortex. (False, spurious, adulterants.)

Am. Jour. Pharm., 47, pp. 11, 37, 87 and 179. (Proc. Am. Pharm. Assoc., 23, p. 193 & 500.)

Mentions the substances used to adulterate true cotton root bark and how to detect such adulterations. Gives a detailed description of the true bark.

Staehle, W.C. 1875.

Chemical and Microscopical Examination of Cotton Root Bark.

Am. Journ. Pharm., 47, p. 457. (U.S. Dispens., 15 ed., p. 721; Yrbk. Br. Pharm. Conf., 1876, p. 209.)

Gives botanical and histological description of cotton root bark and the ingredients isolated by extraction.

Lloyd, J.U. 1876.

Fluid Extract of Gossypium Herbaceum.

Eclec. Med. Jour. 36, p. 537. (Proc. Am. Pharm. Assn., 24, p. 518; Drugg. Circ., 22, p. 46.)

An extensive writing regarding the preparation of the Fluid Extract, and detailed information in the form of queries and answers as to the therapeutic value of cotton root bark. This publication by Lloyd, is one of the most extensive and complete ever devoted to the subject.

Prescott, A.B. 1876.

Active Principles of Cotton Root Bark.

New Remedies, 6, p. 4.

States that on subjecting the drug to chemical examination, no alkaloid was found, but the action of the bark is probably due to a dark colored resin.

Drueding, C.C. 1877.

Analysis of Cotton Root Bark.

Am. Jour. Pharm., 49, p. 386 (King's Am. Dispens., 18 ed., 3 rev., v. 1, p. 952; Yrbk. Br. Pharm. Conf., 1877, p. 217; Proc. American Jour. Pharm., 26, p. 252; New Remedies, 6, p. 271.)

Gives detailed information regarding the scheme of analysis used and reports the presence of the following components: Organic constituents - Red and Yellow resinous coloring matter, fixed oil, gum, sugar tannin and Chlorophyll. Inorganic constituents - Potassium, sodium, Calcium Magnesium, iron sulphuric and phosphoric acids.

Stille, A. & Maisch, J.M. 1879.

Cotton Root Bark.

Natl. Dispens., 2 ed., p. 690; ibid., 3 ed., p. 743; ibid., 5 ed., p. 789.

Mentions the drug in regard to origin, description, constituents, substitution and medicinal uses.

Martin, J.C. 1882.

Gossypium Herbaceum.

Am. Jour. Med. Sci., 83, p. 82. (Natl. Dispens., 5 ed., p. 790; New Remedies, 11, p. 170.)

Comments in a detailed way on the physiological action of the drug and lists several experiments carried out on warm and cold blooded animals.

Johnson, L. 1884.

Gossypium.

Med. Bot. of N. Am., p. 107.

Gives a general description of the plant and speaks of the preparations made from the root bark. Discusses the medicinal properties and uses of the bark and preparations employed.

Prochownick, __. 1884.

Cotton Root Bark in German Obstetrics.

Drugg. Circ., 28, p. 41.

Discusses the uses of the bark as applied to obstetrics and comments upon the reliability of the drug.

Massini, __. 1886.

Cotton Root in the Treatment of Uterine Hemmorrhage.

Korrespondenzbl. Schweiz Aerzte. (Eclec. Med. Jour., 46, p. 136.)

States that cotton root bark is an efficient substitute for ergot and may be used during menapanse as a sterine Hemostatic.

Wood, H.C., Remington, J.P. & Sadtler, S.P. 1886.

Cotton Root Bark.

U.S. Dispens., 15 ed., p. 720; ibid., 17 ed., p. 662.

Mentions drug in regard to botanical origin, habitat, description, medicinal properties and uses.

Scudder, J. M. 1888.

Gossypium.

Eclec. Med. Jour., 48, p. 186.

An answer is given here to the query: "Do you know a remedy besides Ergot which acts directly upon the uterus?" The drug is discussed as to its reliability and therapeutic value.

B., W.E. 1898.

Therapeutics of Cotton Root Bark.

West. Drugg., 20, p. 173.

A discussion regarding the therapeutic merits of cotton root bark upon the male and female regenerative systems.

Morgan, F.W. 1898.

Cotton Root Bark.

Am. Jour. Pharm., 70, p. 427.

Morgan gives several references to cotton root bark, its constituents and preparations made from. He also points out details in the microscopic examination of the bark and comments on the histology of the drug.

Scudder, J.M. 1898.

Gossypium.

Eclec. Med. Jour., 58, p. 175.

Detailed information is given regarding earlier ideas of cotton root bark as a reliable medicament. Indications and contraindications for its use are set forth.

Felter, H.W., Lloyd, J.U. 1900.

Gossypium Radix Cortex.

King's Am. Dispens., 18 ed., 3 rev., v. 2, p. 951.

Mentions drug as to source, history, chemical composition and uses.

Nelson, B.E. 1901.

Gossypii Radixis Cortex.

Merck's Report, 10, p. 5.

Detailed information regarding the microscopical examination of the powdered drug.

Martindale, W.H. & Wescott, W.W. 1904.

Gossypium.

The Extra Pharm., 11 ed., p. 278.

Mentions the preparations made from the bark of the root, their doses and uses.

Jacobs, J. 1906.

Spontaneous Combustion of Cotton Root Bark.

Am. Drugg. & Pharm. Rec., 48, p. 72.

An instance is here discussed where a barrel of ground cotton root bark spontaneously caught fire. The drug was fermenting and placed in the basement over night. The next day it was discovered in flames.

Beringer, G.M. 1908.

Fluid Glycerates.

Am. Drug. & Pharm. Rec., 53, p. 254.

Information regarding the preparation of fluid glycerate of cotton root bark.

Rusby, H.H. 1910.

Gossypii Cortex.

Merck's Report, 19, p. 135.

A short comment urging further study of cotton root bark.

Power, F. B., Browning, H.J. 1914.

Chemical Examination of Cotton Root Bark.

Pharm. Jour. 93, p. 420. (Pharm. Era, 47, p. 509; Yrbk. Am. Pharm. Assoc., 3, p. 225; Merck's Report, 23, p. 301.)

Gives chemical constituents of the drug. No alkaloids or tannins were found to be present.

Remington, J.P. 1915.

Gossypii Cortex.

Jour. Am. Pharm. Assoc., 4, p. 1132.

Describes it as found up on the market and gives detailed information regarding botanical characteristics microscopically as well as those features discernable to the naked eye.

Miller, F.A. 1916.

Gossypium.

N.A.R.D. Jour., 21, p. 1113.

Gives information regarding the proper time for collecting the drug.

Webster, H. T. 1917.

Gossypium.

Eclec. Med. Jour., 77, p. 179.

Much is said here, regarding specific indications for the use of Gossypium. Stress is laid upon the fact that it is a much valued drug in cases of Hysteria during menapanse.

1920.

Ergot and Cotton Root Bark.

The Med. Summary, , p. . (Eclec. Med. Jour., 80, p. 395.)

A comparison of Cotton Root Bark and Ergot is made from a therapeutic standpoint.

Eckler, C.R. 1920.

A Contribution to the Pharmacology of Cotton Root Bark.

Am. Jour. Pharm., 92, p. 285. (Yrbk. Am. Pharm. Assoc., 9, p. 276.)

States that the drug is analogous to Ergot in many respects. A detailed article regarding the pharmacological action of the drug.

List of Books Consulted.

Barton, B.S. Collections toward an Essay, 1794-1801

Bigelow, J. Flor. Botiehsis, 1 ed., 1814-1824

Barton, W.P.C. Veg. Med. 2 Vol., 1817-1818

Barton, W.P.C. Comp. Flora, Phil. 2 vol. 1818

Bigelow, J. J. Mat. Med. U.S.P. 1822

Cutler, M. An Account Veg. etc. 1785

Carver, J. Travels in A.M.

Clapp, A. Med. Plants U.S.P. 1852

Eberle, J. Mat. Med. 1836

Forster, J. R. Flora Americanae Sept. 1771

Flueckiger, F.A. & Hanbury. Pharmacographia, 1 ed. 1874

Gattinger, A. Med. Plants Tenn. 1894

Hitchcock, E. Cat. Plant Amherst, 1829

Henkel, A. Weeds Used in Medicine, 1904

Henkel, A. Wild Medicinal Plants, 1906

Henkel, A. American Root Drugs, 1907

Johnson, L. Med. Bot. N. Am., 1884

King, J. Am. Dispens., 1864 & 1898

Linaeus, L. Species Plantarum, 1 ed., 1753

Lloyd, J. U. & C.G. Drugs N. Am., 1884-1885

Lloyd, J.U. Hist. Drug. U.S.P. 1911

Lloyd, J.U. Origin Pharm. Drugs, 1921

Millspaugh, C.P. Med. Plants, 2 vol., 1890

Porcher, F.P. Med. Plants, S.C. 1849

Porcher, F.P. Resources, South Field & For. New Ed., 1869

Rafinesque, C.S. Med. Flora U.S. 1828-1830.

Schoepf, Nat. Med. Am. 1887

Smith, P. An Indians Doc's. Dispens. 1812

Stearns, F. Med. Plants Mich. 1858

Stille, A. & Maisch, J.M. Nat'l. Dispens., 1879

Torrey, J. Bot. State N.Y. V. 2, 1843

Williams, L. W. Med. Plants Mass., 1849

Wood, G.B. & Bache, F., U.S. Dispens., 1855, 1860, 1886, 2nd ed., 1894.

Zollickoffer's W. Mat. Med., 1827

List of Journals Consulted

Am. Jour. Pharm.	1825-1925
Am. Drugg.	1884-1891
Am. Drugg. & Pharm. Rec.	1892-1924
Bull. Pharm.	1873-1924
Drugg. Circ.	1857-1925
Dig. Com. U.S.P. & N.F.	1905-1923
Eclec. Med. Jour.	1853-1924
Jour. Mat. Med.	1859-1884
Jour. Am. Pharm. Assoc.	1912-1924
Merk. Report	1893-1921
New Rem.	1876-1883
Nat. Drugg.	1882-1924
New Eng. Drugg.	1893-1904
N.A.R.D. Notes	1902-1913
N.A.R.D. Jour.	1913-1925
Proc. Am. Pharm. Assoc.	1852-1911
Pharm. Rec.	1884-1893
Pharm. & Chem.	1885-1886
Yrbk. Am. Pharm. Assoc.	1912-1923

UNITED STATES PHARMACOPOEIA

(O-X) (1820-1920)

and

NATIONAL FORMULARY

(I-V) (1888-1926)

HISTORY

OF

GOSSYPII RADICIS CORTEX

U.S. Pharm. 1860 P. p. 59.

Gossypii Radix. Cotton Root./

The root of Gossypium Herbaceum and of/ other species of Gossypium./

U.S. Pharm. 1870 P. p. 59.

Gossypii Radicis Cortex/ Cotton Root Bark./ The bark of the root of Gossypium herbaceum Linne, and of other spe-/cies of Gossypium. (nat. ord., Malvaceae). In their flexible bands or quilled pieces; outer surface brownish-yellow, with/ slight, longitudinal ridges or meshes, small black, circular dots, or short, trans-/verse lines, and dull, brownish-orange patches from the abrasion of the thin/ cork; inner surface whitish of a silky lustre, finely striate, bast fibres long,/ tough and seperable into papery layers; inodorous, taste very slightly acrid and/ faintly astringent.

Preparations. Extractum Gossypii Radicis Fluidum.

U.S. Pharm. 1880 P. p. 172.

Gossypii Radicis Cortex/

Cotton Root Bark/

The bark of the root of Gossypium Herbaceum Linne, and of other spe-/cies of Gossypium (Nat. Ord. Mabeaceae)/. In thin flexible bands or quilled pieces, outer surface brownish yellow, with/ slight longitudinal ridges or meshes, small, black, circular dots, or short trans-/verse lines,

and dull, brownish-orange patches, from the abrasion of the thin/ cork; inner surface whitish of a silky lustre, finely striate; bast fibers long/ tough, and seperable into papery layers; inodorous, taste very slightly acrid and/ faintly astringent/.

Preparation: Extractum Gossypii Radicis Fluidum/.

U.S. Pharm. 1890 P. 202.

Gossypii Radicis Cortex/

Cotton Root Bark/

The bark of the Root of Gossypium Herbaceum Linne, and of other/ species of Gossypium (nat. ord. malvaceae)./

In thin, flexible bands or quilled pieces, outer surface brownish yellow,/ with slight longitudinal ridges or meshes, small, black, circular dots, or short,/ transverse lines, and dull, brownish orange patches, from the abrasion of the/ thin cork; inner surface whitish, of a silky luster, finely striate, bast fibres/ long, tough, and seperable into papery layers; inodorous; taste very slightly/ acrid and faintly astringent./

Preparation: Extractum Gossypii Radicis Fluidum./

U.S. Pharm. 1900 P. 228.

Gossypii Cortex

Cotton Root Bark/

(Gossypii Radicis Cortex, Pharm. 1890)/

The dried bark of the Root of Gossypium herbaceum Linne, or of/ other cultivated species of Gossypium (Fam. Malvaceae)/

In thin, flexible bands or quilled pieces, the bark 0.2 to 1 mm. thick; outer/ surface yellowish brown, longitudinally wrinkled, with small lenticles, the/ periderm frequently exfoliated and somewhat fuzzy from partly detached bast/ fibres; inner surface whitish, longitudinally striate, fracture tough, fibrous, the/ bast-layer seperable into thin laminae; odor faint; taste slightly astringent and acrid./

Average Dose - 2 Gm. (30 grains)./

National Formulary 1916, p. 302

Gossypii Cortex

(U.S.P. VIII)

Gossyp. Cort.

The recently gathered air-dried bark of the root of one or more of the/ cultivated varieties of Gossypium Herbaceum Linne, Gossypium Barba/ - dense Linne, or Gossypium arboreum Linne (Fam. Malvaceae), without/ the presence of more than 5 per cent. of wood or other foreign matter./

In flexible bands or quilled pieces, attaining a length of 30 cm. and a thickness of/ about 1 mm.; outer surface orange-brown, smooth, slightly wrinkled, with small/ circular lenticels, the outer corky layer frequently exfoliated and showing the more/ or less fissured and fibrous middle bark; inner surface light brown, longitudinally/striate; fracture tough, fibrous, the inner bark readily seperable into fibrous layers./ Odor slight; taste very slightly acrid./

Under the microscope, sections of cotton root bark show an outer layer of/ cork composed of four to six layers of tabulae, thin-walled, yellowish-brown, non-/ lignified cells; a thin primary cortex, consisting of starch bearing parenchyma and an/ occasional large secretion reservoir with yellowish-brown contents; inner bark with/ large groups of bast fibres arranged in interrupted, concentric circles seperated/ radially by medullary rays and tangentially by the leptome or sieve tissue;/ bast fibers from 0.3 to 1 mm. in length and about 0.015 mm. in width; the walls/ being about 0.005 mm. in thickness, strongly lignified and with very few pores, the/ ends being acute and markedly alternate, medullary rays one to six cells wide, the/ cells usually filled with starch grains; the latter from 0.003 to 0.02 mm. in diameter;/ occassional cells containing rosette aggregates of calcium oxalate from 0.009 to 0.025 mm. in diameter./ Cotton Root Bark yields not more than 7 percent ash.

National Formulary 1926 p. 337.

Gossypii Cortex

Cotton Root Bark

Gossyp. Cort.

Cotton root bark is the recently gathered air dried bark of the/ root of one or more of the cultivated varieties of Gossypium herbaceum/, Linne, and of other species of Gossypium (Fam. Malvaceae)./

Cotton Root bark contains not more than 5 percent of wood or/ other foreign organic matter./

Description and physical properties.

Under ground Cotton Root Bark: In flexible bands or quilled pieces; attaining a length/ of 30 cm. and a thickness of about 1 mm. Outer surface orange-brown, sometimes/ smooth, but usually finely wrinkled and fissured longitudinally and roughened/ from the tendency of the corky layers to exfoliate the fibrous inner bark;/ inner surface light brown, longitudinally striate, fracture tough, fibrous, the/ inner bark readily seperable into fibrous layers, odor slight; taste very slightly/ acrid./

Structure: Cork composed of 4 to 6 layers of tabular, yellowish brown cells/ with thin walls; a thin primary cortex consisting of starch-bearing parenchyma/ and occassional large secretion reservoirs with yellowish brown contents; inner/ bark with a nearly closed ring of V shaped groups consisting of layers of strongly/ lignified bast fibres, sieve tissue, tannin-containing cells and transversed by/ medullary rays, the arrangement giving a deeply incised appearance to the outer/ edge of the bast ring when viewed in transverse section, medullary rays 1 to 6/ cells in width, the cells usually containing starch grains; occassional cells containing/ rosette crystals of Calcium Oxalate./ Powdered Cotton Root Bark: Numerous bast fibres from 0.300 to 1.000 mm. in/ length and about 0.015 mm. in width, with strongly lignified

walls, the latter/ about 0.005 mm. in thickness and with few pores, the ends of the fibres being/ acute and markedly attenuate; numerous fragments consisting of cortical paren-/chyma containing simple or compound starch grains, the latter up to 0.020 mm. in/ diameter, the tissue occasionally enclosing a secretory reservoir; fragments com-/posed of medullary-ray cells, the latter containing starch grains; rosette crystals/ of Calcium Oxalate from 0.009 to 0.025 mm. in diameter./

Preparation: Fluidextractum Gossypii Corticis/.

Average dose: Metric, 2 gm. - Apothecaries, 30 grains.

Summary to U.S.P. and N.F. Data of Gossypium Radicis Cortex

OFFICIAL:-

1860, '70, '80, '90, 1900, N.F. IV and V.

OFFICIAL LATIN TITLE:-

Gossypii Radicis Cortex - 1870, '80

Gossypii Radix - 1880

Gossypii Cortex - 1900, N.F. IV, and V.

OFFICIAL ENGLISH TITLE:-

Cotton Root Bark - 1870, '80, '90, 1900, N.F. IV & V.

ABBREVIATION:-

Gossyp. Cort. N.F. IV and V

SYNONYMS:-

None

BOTANICAL NAME:-

Gossypium herbaceum and other species of Gossypium - 1860, '70, '80, '90, and N.F. V.

Gossypium herbaceum, Gossypium barbadense, or Gossypium Arboreum - N.F. IV.

Gossypium herbaceum and other cultivated species of Herbaceum - 1900.

FAMILY:-

Nat. Ord. - Malvaceae 1860, '70, '80, '90

Fam. - Malvaceae 1900, N.F. IV and V.

PART USED:-

The root - 1860

The bark of the root - 1870, '80, '90.

The dried bark of the root - 1900.

The air dried bark of the root - N.F. IV.

The recently gathered air dried bark of the root N.F. V.

DESCRIPTION:-

1870, '80, '90, 1900 and N.F. IV and V.

PREPARATIONS:-

Extractum Gossypii Radicis Fluidum - 1870, '80, '90.

Fluidextractum Gossypii Corticis - N.F.V.

USES:-

Ecbolic, Emmenagogue, Parturifacient.

DOSE:-

2 gms. (30 grains) 1900.

Metric 2 gms. Apothecaries 30 grams N.F. V.

Approved by W. O. Richtmann

Assoc. Prof. of Pharmacognosy.