A BIBLIOGRAPHY OF OIL OF WINTERGREEN

By

Fleurounge Elizabeth Engels

A Thesis Submitted for the Degree of

GRADUATE IN PHARMACY

University of Wisconsin

1922

Carver, J. 1778.

Wintergreen.

Travels through the interior part of North America in the year 1766, 1767 & 1768. p. 509.
(Lloyd Lib. Bull. Repr. 5, p. 509).

Descriptions and uses of the plant.

Schoepf, J.D. 1787.

Gaultheria procumbens.

Materia Medica Americana, etc. p. 67. (Bull. Lloyd Lib. Repr. Ser., No. 3, p. 67; Barton's Med. Bot. Vol. 1, p. 172).

Gives botanical name, synonyms, habitat, part used, properties, therapeutics and preparation.

Barton, B. S. 1798.

Gaultheria procumbens.

Collection for an essay toward a Materia Medica, pt. 1, p. 20.

Early uses of the plant are mentioned.

Coxe, J. R. 1806.

Gaultheria Procumbens.

American Dispensatory, ed., p. 354.

Gives four common names, habitat, and preparation.

Thacher, J. 1810.

American New Dispens., 2nd ed., p. .

No mention of Gaultheria.

Bigelow, J. 1814.

Wintergreen.

Collection of plants of Boston and its environs, p. 105.

Gives botanical name and description of both the round leaved and the one sided wintergreen.

Coxe, J. R. 1818.

Gaultheria Procumbens.

American Dispensatory, 4th ed., p. 260.

Gives Botanical name, four common names, habitat, preparation, medicinal properties and use.

_____ 1819.

Checkerberry Cordial.

Boston Daily Advertiser, v. 20, No. 22, Nov. 2, p. 3, c. 1.

In an advertisement of a "Cordial Distillery" at No. 58 Broad Street, Boston, the above preparation is listed among seven other cordials.

_____ 1820.

Oil Wintergreen.

Boston Daily Advertiser, v. 29, No. 86. July 6, p. 3, c. 2.

Thomas Bartlett advertises very fine Oil of Wintergreen for sale.

_____ 1822.

Oil of Wintergreen.

New England Galaxy, v. 5, No. 229. March 1, p. 4, c. 4.

Rice Henshaw & Company of No. 27 India Street, Boston, Mass., advertise 50 pounds of the above oil for sale. Dated Feb. 1st, 1822.

Bigelow, J. 1824.

Pyrola.

Collection of plants of Boston and vicinity, p. 173.

Gives botanical names, description of leaves and flowers, of both the round leaved and the broad leaved wintergreen.

Coxe, J. R. 1827.

Gaultheria.

American Dispensatory, 7th ed., p. 313.

Gives 5 common names, part used, habitat, preparation, medicinal properties and use.

A Druggist. 1832.

Oil of Gaultheria Procumbens.

Am. Journ. Pharm., 3, p. 199. (U.S.Disp., 2nd ed., p. 940, 1834).

Heaviest vol. oil 1.17 Sp. gr. - test purity.
Success of Swaims Panacea brought the oil into great vogue, for all Catholicom, Panaceas, & Syr. Sarsaparilla
Widely distributed:- Betula lenta bark
Polygala panciflora roots
Spirea ulmaria
Spirea lobata roots & stalks
Gaultheria hispidula
Flavoring agent.

——— 1834.

Report of Committee of Inspection on a Case of Poisoning by Oil of Wintergreen.

Am. Jour. Pharm., 6, p. 289.

Gives an account before the New York College of Pharmacy, June 1, 1832, of cases of poisoning by oil of wintergreen.

Wood, G. B. 1834.

Oleum Gaultheria U.S.

United States Dispens., 2nd ed., p. 940.

Gives common name, where known, preparation of U.S.P., where found, description of the plant, assay for purity (sp.gr.) and preparation of the oil.

Wood, G. B. 1834.

Gaultheria U.S.

United States Dispens., 2nd ed., p. 325.

Gives common name, part used, Sex sept., Nat. ord. description, names in various parts of the country, habitat, medical properties, uses and preparations.

Wood, G. B. and Bache, F. 1836.

Oleum Gaultheriae U.S.

United States Dispens., 3rd ed., p. 919. (U.S. Dispens., 5th ed., p. 1051; U.S. Dispens., 10th ed., p. 1102; U.S. Dispens., 12th ed., p. 1252; U.S. Dispens., 13th ed., p. 1307; U.S. Dispens., 14th ed., p. 1349; U.S. Dispens., 15th ed., p. 1011).

Gives common name, where known, preparation from U.S.P. where found, assay for purity, and official preparation.

Wood, G. B. and Bache, F. 1836.

Gaultheria U.S.

U.S. Dispens., 3rd ed., p. 315. (U.S. Dispens., 5th ed., p. 345; U.S. Dispens., 10th ed., p. 362; U.S. Dispens., 12th ed., p. 408; U.S. Dispens., 13th ed., p. 420; U.S. Dispens., 14th ed., p. 434.)

Gives common name, part used, Sex sept., description, habitat, various names, medical properties, uses, and official preparation.

Proctor, W. Jr. 1842.

Observations of the vol. oil of Gautheria Procumbens, proving it to be a Hydracid Analagous to Salicious Acid.

Am. Journ. Pharm., 14, p. 211.

Discusses its uses, geographical source, physical constants, and chemical behavior with various reagents.

Proctor, W. Jr. 1842.

Observations on the volatile oil of Gaultheria Procumbens, proving it to be a Hydracid Analagous to Salicious Acid.

Am. Journ. Pharm., 14, p. 211.

Action of the methyl salicylate towards ammonia, iodine, cyanogen, nitric acid, oxide of copper and oxide of lead.

Plummer, J. S. 1853.

Decolorizing Property of the Essential Oils.

Am. Journ. Pharm., 25, p. 399.

Discusses the bleaching property of the essential oils, including oil of wintergreen.

Lee, C. A. 1859.

Gaultheria Procumbens.

Journ. Mat. Med., 2, p. 359.

Brief account of the uses to which the leaves and oil are put.

Stearns, F. 1859.

Extracts from a Report on the Medical Plants of Michigan.

Am. Journ. Pharm., 31, p. 31.

Describes Gaultheria Procumbens, and discusses its distribution and uses. No oil is prepared in Michigan. Berries are used extensively in Detroit. Gives 11 common names.

Townsend, W.E. 1862.

An account of the physiological action of Gaultheria Procumbens.

Bost. Med. & Surg. Journ., , p. ; Drugg. Circ., 6, p. 26; Proc. Am. Pharm. Assoc., 10, p. 107.

King, J. 1864.

Gaultheria Procumbens.

American Dispens., 6th ed., p. 435.

Gives natural order, part used, description, history, properties and uses.

DeVry, J.E. 1871.

Oil of Wintergreen.

1. Pharm. Journ., 31, p. 503.
2. Am. Jour. Pharm. 44, p. 71.
3. Proc. Amer. Pharm. Assoc., 21, p. 223.
4. Chem. Centrbl., 43, p. 437.
5. Jahrb. Pharm. d. Pharm. 37, p. 233.

Gives account of his experiments with Gaultheria punctata and Gaultheria leucocarpa on the Isle of Java in 1859 as to preparation and composition of the oil.

Bullock, Chas. 1873.

Oil of Gaultheria.

Am. Jour. Phar., 45, p. 521.

Gives an account of the detection of adulteration in oil of Gaultheria.

Maisch, J. M. 1873.

Oil of Gaultheria.

Am. Journ. Phar., 45, p. 521.

Gives an account of the detection of adulteration in oil of Gaultheria.

Pile, W. H. 1873.

Oil of Gaultheria.

Am. Jour. Pharm., 45, p. 521.

Gives an account of the detection of adulteration in oil of Gaultheria.

King, J. 1875.

Gaultheria Procumbens.

American Dispens., 10th ed., p. 377.

Gives common name, natural order, description, history, properties and uses.

King, J. 1875.

Oleum Gaultheria.

American Dispens., 10th ed., p. 1096.

Gives common name, and history.

Wellcome, ___ 1875.

Oil of Gaultheria.

Amer. Journ. Phar., 47, p. 421.

Discusses a prescription containing limewater, morphine, and oil of Gaultheria.

Williams, J. 1875.

Note of Salicylate of Methyl.

Pharm. Journ., 34, p. 624. (Proc. Am. Pharm. Assoc., 23, p. 351).

Williams states that it has long been known that the essential oil of wintergreen consists almost entirely of methyl salicylate.

_____ 1878.

Wintergreen Oil.

Ber. Sch. & Co., Jan., p. 29.

The advance in price of the previous year has dissipated. Sassafras oil is a common adulterant of wintergreen oil. The adulteration is readily detected by saponifying with KOH.

_____ 1879.

Wintergreen Oil.

Ber. Sch. & Co., Oct., p. 28.

Notes lowering of price, with additional drop for quantities of 50-100 kilograms.

_____ 1879.

Wintergreen Oil.

Ber. Sch. & Co., Jan., p. 27.

Gives variation in price according to quality. Also compares natural with rectified oils.

Brakeley, J. 1879.

Oil of Gaultheria.

Am. Jour. Phar., 51, p. 189.

Gives an account of the manufacture of the oil.

Koehler, H. 1879.

Ueber die Bestandtheile der ätherischen Oele einiger Ericeen.

Berichte d. d. Chem. Ges., 12, p. 246. (Am. Journ.Pharm., 51, p. 189.)

Proves that the composition of oils of Gaultheria punctata, leucocarpa prepared by de Vrij to be identical with that of Gaultheria procumbens.

Stille, A. 1879.

Gaultheria U.S.

Nat. Dispens., 2nd ed., p. 672. (Natl. Dispens., 3rd ed., p. 724; Natl. Dispens., 5th ed., p. 767).

Gives common names, part used, nat. ord., origin, description, constituents, medical action, and uses.

1880.

———

Wintergreen Oel.

Ber. Sch. & Co., May, p. 28.

Wintergreen oil has materially advanced in price. Original packages, in tin cans hold 25 pounds.

1881.

———

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 30.

Wintergreen oil in metallic containers generally changes in color. Only natural oil is so packed. Rectified oil is generally sold in blue Winchester bottles of 6 lb. capacity. Small bottles of 1¼ lbs. have proven unsatisfactory.

———— 1882.

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 27.

Wintergreen oil has again advanced in price. Containers are described.
Therapeutic properties of the oil are discussed.

———

Underhill, W.P. 1882.

Oil of Gaultheria.

Proc. N.H. Pharm. Assoc., 1882, p. 34. (Am. Jour. Pharm., 55, p. 197; Proc. Am. Pharm. Assoc., 31, pp. 126 & 224).

Average yield, 10 pounds to 1 ton of leaves. Highest yield 14 pounds to a ton, lowest 9. Larger yield in dry weather. Compares N.H. with N.J. plants. Has distilled the oil since 1874.

———

———— 1883.

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 27.

Variation in prices are noted. Style of commercial package is described. Metal containers are abandoned in favor of blue glass.

———

Johnson, L. 1884.

Gaultheria-Aromatic Wintergreen.

A Manual of the Medical Botany of N. Amer. 1884, p. 192.

Gives botanical name, four common names, description, habitat, part used, constituents, preparations, medical properties and uses.

———

Stille, A. - Maisch, J.M. 1884.
Caspari, C.- Maisch, H.C.C.

Oleum Gaultheria.

Nat'l. Dispens., 5th ed., p. 724.

Gives definition, preparation, properties, composition, adulterations, action and uses.

——— 1885.

Wintergreen Oel.

Ber. Sch. & Co., Sept., p. 29.

Owing to low prices much of the wintergreen oil now on the market is made from the wood and bark of the "sweet birch". Differs materially from the pure oil. Schimmel & Company pack only pure rectified oil in blue bottles.

——— 1886.

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 31.

Prices of wintergreen oil are still on the decline, owing to the substitution of oil of sweet birch. This started 6-7 years ago. Genuine oil is still to be had, rectified and in glass containers.

——— 1886.

Wintergreen Oel.

Ber. Sch. & Co., Oct., p. 31.

Reviews literature on wintergreen and sweet birch oils. Substitution has been going on for years. Schimmel & Company announce the commercial production of synthetic wintergreen oil, to compete with the above mentioned oils.

Droelle, F.W. 1887.

Wintergreen Leaves.

Amer. Jour. Pharm., 289-290. (Proc. Amer. Phar. Assoc., 35, p. 125).

Gives an account of the analysis of wintergreen leaves.

—

1888.

———

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 41.

Continued reduction in price of wintergreen oil may be due to oil of sweet birch, or synthetic wintergreen oil. Pharmacologic action of the oil is being investigated. Camphor oil has been reported as an adulterant of wintergreen oil.

—

1888.

———

Wintergreen Oel.

Ber. Sch. & Co., Oct., p. 40.

Reviews the literature of wintergreen and sweet birch oils, indicating that there is a difference in density of the two oils.

—

1889.

———

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 42.

Refers to the probable preference for synthetic methyl-salicylate to the other two oils, on account of adulteration of the latter. A mixture of alcohol and chloroform, or sassafras oil, are mentioned as adulterants.

—

1890.

———

Wintergreen Oel.

Ber. Sch. & Co., Apr., p. 44.

Reviews work on wintergreen and sweet birch oils and synthetic methyl-salicylate.

—

N.B. N.C. Werbke, 1888 see end of bibliography.

1890.

Wintergreen Oil.

Semi-Ann. Rept. Schimmel & Co., Oct., p. 58.

Discusses prices, demand and importation.

1891.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 59.

Discusses depression of prices due to competition of the synthetic product.

1891.

Wintergreen Oil.

Semi Ann. Rpt. Schimmel & Co., Oct., p. 47.

Discusses the manufacture of the oil from Betula lenta L. and also the tests for the distinction of oil of wintergreen.

Wilson, R.A. 1891.

My Experience with Oil of Wintergreen.

Proc. Ore. State Pharm. Assoc., 1, p. 53.

He started work in 1887 - probably East Portland. Types of still employed described. Yield and costs given. Compares his product with those of commerce.

1892.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 45.

States that the largest business is being done in the artificial wintergreen.

1892.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Apr., p. 50.

Discusses the replacement of the oil from the wood of Betula lenta for the true oil and the reliable tests for the distinction.

1893.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 66.

Reduction of natural oil to the lowest possible limit due to competition of the synthetic wintergreen oil. Discusses the manufacture of synthetic wintergreen oil and gives a table on the average market value of natural wintergreen oil.

1893.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 42.

"The incorporation into the U.S.P. of pure methyl salicylate will probably remove some of the prejudices which linger in some quarters against the substitution of this product for Betula lenta oil."
Describes the distillates prepared for exhibition at the World's Fair.

1893.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 46.

Gives botanical source, sp. gr. at 15°C., known constituents and observations.

1894.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 57.

Discusses the increased use of artificial methyl-salicylate and gives comparison with genuine wintergreen oil and oil from sweet birch.

—

1894.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 54.

Incorporation of methyl-salicylate into the U.S.P. did not result in removing the last trace of prejudice against this article.

Suggests method for pharmacists to safeguard themselves against adulteration.

—

1895.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 73.

Discusses wintergreen oil as to price and production. Also the plants containing the methyl salicylate. Discusses artificial wintergreen oil as to its leading in the consumption in the United States.

—

1895.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 49.

Discusses the supply of natural and artificial wintergreen oil.

—

1896.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Apr., p. 57.

Discusses the fall in prices and its demoralizing effects on the trade.

—

1896.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 70.

In 1894 Bourquelot showed that roots of various Polygala species, when distilled with water yield methyl salicylate.

1897.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 42.

Discusses the expected rise in prices.

1897.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, pp. 50-51.

Gives the botanical source, percentage yield from raw material, sp. gr. at 15° C., optical rotation and known constituents of the oil of wintergreen from the bark and also from the leaves.

1897.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 58.

Discusses the successful competition of the artificial methyl-salicylate, and its effect on prices.

1898.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 51.

Discusses the increased demand for the natural oil, despite the competition of the artificial product.

N.B. Lloyd, J.U. 1898 see end of bibliography.

1898.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 44.

Discusses method for determining the percentage of methyl-salicylate in natural oil of wintergreen.

Kremers, E. and James, M.M. 1898.

Methyl-Salicylate.

Pharm. Rev., 16, p. 130. (Proc. Am. Pharm. Assoc., 46, p. 988).

Describes the volumetric estimation of methyl-salicylate.

Kremers, E. - James, M.M. 1898.

On the Occurrence of Methyl-Salicylate.

Pharm. Rev., 16, p. 100.

The authors enumerate the plants in which methyl-salicylate was detected and the method of detection.

Dohme, A.R.L. 1899.

Oil of Wintergreen.

Proc. Maryland Pharm. Assoc., 16, p. 98. (Proc. Am. Pharm. Assoc., 48, p. 760).

Account of the obtaining of synthetic oil of wintergreen in a pure state.

Rombourgh, Von ___. 1899.

Methyl-Salicylate.

Proc. Acad. Science Amsterdam.(Semi-Ann. Rpt. Schimmel & Co., Oct., 1898, p. 50; Proc. Am. Pharm. Assoc., 47, p. 677).

Methyl-salicylate, natural, occurrence and wide distribution of plants containing it.

———— 1899.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 45.

Discusses increased supply of natural oil due to aid of New York firm.

———

———— 1899.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 55.

Discusses the obtaining of the pure product directly from the producer.

———

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

Oleum Gaultheria (U.S.P.).

King's Am. Dispens., 18th ed., Vol. II, p. 1357.

Gives English name, definition, natural order, synonyms, history, description, chemical composition, action, medical uses and dosage.

———

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

Gaultheria.

King's Am. Dispens., 18th ed., Vol. II, p. 913.

Gives part used, botanical names, natural order, 7 common names, botanical source, history, description, chemical composition, action, medical uses and dosage. Also specific indications, uses and related species.

———

———— 1900.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 46.

Discusses the enormous advance in value due to strong demand and insufficient stock.

———

_____ 1900.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p. 64.

Discusses the continued high price of distillates from real wintergreen leaves and the wood of sweet birch.

Gallois, __. 1900.

Bull. gen. de Therap., 128, 657. (Proc. Am. Pharm. Assoc., 48, p. 760). (Pharm. Journ., 183.)

The efficiency of methyl-salicylate as an antiseptic dressing.

_____ 1901.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April & May, p. 57.

Discusses the apparent end to scarcity of wintergreen oil.

_____ 1901.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p. 52.

Discusses unfavorable news from New York. Gives a statistical table of the prices of wintergreen oil during past ten years.

_____ 1902.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 65.

Discusses the test with strawberries which indicates the presence of salicylic acid.

1902.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, 1902, p. 81.

States that higher prices for genuine oil are reported from America. Gives the recommended uses for the artificial oil.

(Editor) 1903.

Where Oil of Wintergreen Comes From.

Drugg. Circ., 47, p. 260.

Natural oil of wintergreen comes largely from Tennessee, counties of Ashe, Watanga and Mitchel from sweet birch, called locally black birch.
General process is described.

1903.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p.67.

Prices are decidedly decreased.

1903.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 77.

Discusses advance in prices due to strong demand and also to the competition of the artificial oil.

1904.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p. 92.

Prices of the artificial oil have followed the decline in the values of salicylic acid and methyl-alcohol.

———— 1904.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 88.

American market continues firm with a prospect of a rise in price.

———

Foster, H. D. 1905.

Oil of Wintergreen Production.

Forestry & Irrigation, v. 11, p. 565. (Pharm. Era, 35, p. 188).

(Oil distilled from bark of Sweet Birch, in North Carolina). Three illustrations; 1.) The condenser of a birch still; 2.) A mountain birch distillery; 3.) Black birch tree peeled for oil.

———

———— 1905.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p. 71.

Discusses the comparison of authentic pure wintergreen oil with the requirements of the U.S.P.

———

———— 1905.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., April, p. 81.

States that the market quotations have remained practically unchanged.

———

Saden, H. Von and Elze, F. 1905.

Ueber ätherisches Birkenknospen öl.

Ber. d. d. Chem. Gesch., 38, p. 1636. (Journ. Chem. Soc., (Lond.), 88, part 1.p. 451.) (Dig. & Com. U.S.P. 1905, p.213).

Gives contents of ethereal oil of birch buds.

———

Umney, J.C. & Bennett, C.T. 1905.

Oleum Betulae.

Pharm. Jour., v. 21, p. 145. (Dig. & Com. U.S.P. 1905, p. 213).

"Point out that while this oil is stated to have the same properties as methyl salicylate, no references are made under oil of Gaultheria to its similarity to Oleum Betulae."

Witterstroem, T.D. 1905.

Menthylis Salicylas.

Drug. Circ., 49, p. 312. (Dig. & Com. U.S.P., 1905, p. 206).

"Quotes a large jobber as saying that the substitution of synthetic for natural oil of wintergreen is the most profitable sideline in his business."

Ziegelmann, E.F. 1905.

Oils of Wintergreen and Birch.

Pharm. Rev., 23, p. 83. (Proc. Am. Pharm. Assoc., 53, p. 777; Dig. & Com. U.S.P., 1905, p. 219).

Gives an account of the percentage yield of the oils and also some of their properties.

1906.

———

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., Oct.-Nov., p. 95. (Dig. & Com. U.S.P. 1906, p. 391).

Gives the properties of natural wintergreen oil.

1906.

———

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., Apr.-May, p. 77. (Dig. & Com. U.S.P. 1906, p. 392).

Gives properties of artificial wintergreen oil.

1906.

Methylis Salicylas.

Jour. de pharm. et de Chim., (6 S. V. 24), p. 115. (Dig. & Com. U.S.P. 1906, p. 363).

Method of preparation of methyl-salicylic ether together with its characters and the references.

Brandel, I.W. 1906.

Oleum Betulae.

Pharm. Rev., 24, p. 379. (Dig. & Com. U.S.P., 1906, p. 383).

Reviews some recent literature relating to oil of birch and related products.

Foster, H.D. 1906.

Proc. of the Am. Pharm. Assoc., v. 54, p. 888.

Gives an interesting description of the distillation of oil of wintergreen ("Sweet Birch Bark") in North Carolina.

Foster, H.D. 1906.

Oleum Betulae.

Pharm. Era, 35, p. 188. (Dig. & Com. U.S.P., 1906, p. 383).

Foster describes the preparation, yield amount produced and the price.

Foster, H.D. 1906.

Oil of Wintergreen Production.

Forestry & Irrigation. (Pharm. Era, 35, p. 189).

Production of oil of sweet birch in McDowell County, N.C. is described. Two photographs of stills are included.

Francis, J.M. 1906.

Methylis Salicylas.

Bull. Pharm., v. 20, p. 98. (Dig. & Com. U.S.P., 1906, p. 362).

Synthetic oil of wintergreen to a great extent is very impure. The pharmacopoeial specifications are ample to insure pure goods.

Francis, J.M. 1906.

Oleum Betulae & Oleum Gaultheriae.

Bull. Pharm., v. 20, p. 141. (Dig. & Com., U.S.P., 1906, p. 392).

Gives the pharmacopoeia distinction between Oleum Gaultheriae and Oleum Betulae.

Henkel, Alice 1906.

Oleum Gaultheriae.

Bul. Bur. Plant Ind., U.S. Dept. Agric., 1906, No. 89, p. 32. (Dig. & Com. U.S.P., 1906, p. 391).

Gives synonyms, description of plant, habitat and part used.

Henkel, Alice 1906.

Oleum Betulae.

Bul. Bur. Plant Ind., U.S. Dept. Agric., No. 89, p. 15. (Dig. & Com. U.S.P., 1906, p. 383).

Gives synonyms, description of tree, habitat and part used.

Lakey, R.H. 1906.

Oleum Gaultheria.

Proc. Penn. Pharm. Assoc., 29, p. 888. (Dig. & Com. U.S.P., 1906, p. 392).

Discusses the distillation of oil of wintergreen in North Carolina.

Price & Engle 1906.

Oleum Gaultheriae.

Jahresb. u. Tier. Chem., Wiesb., v. 36, p. 795. (Dig. & Com. U.S.P. 1906, p. 392).

Reports a fatal case of poisoning by oil of wintergreen in a two year old child.

Schneider, A. 1906.

Oleum Gaultheriae.

(Dig. & Com. U.S.P., 1906, p. 391).

Gaultheria procumbens is closely related to Gaultheria Myrsinites.

_____ 1907.

Oleum Gaultheriae.

Paint, Oil & Drug Rev., v. 43, Jan. 9, p. 18. (Dig. & Com. U.S.P. 1907, p. 336).

Much of the commercial oil of wintergreen is made from black birch brush; describes a method of manufacture.

(Editor) 1907.

Oleum Betulae.

Paint, Oil & Drug Rev., v. 43, May 8, p. 29. (Dig. & Com. U.S.P. 1907, p. 329).

Gives the method of the production of birch oil in parts of Delaware.

_____ 1907.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., October, p. 97.

Discusses the increased demand for wintergreen oil.

N.B. _____ 1907 see end of bibliography.

1907.

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., April, p. 102. (Dig. & Com. U.S.P., 1907, p. 337).

States that the use of natural oil being taken up, due to the new Food & Drugs Act.

Gaushy, R.A. 1907.

Oleum Gaultheriae.

Proc. Penn. Pharm. Assoc., 30, p. 77. (Dig. & Com. U.S.P., 1907, p. 337).

One lot of the oil contained a small quantity of petroleum oil, due to the oil being placed in a dirty container. States that admixture with synthetic oil being almost impossible to detect.

Mitchell, E. 1907.

Oleum Betulae.

Proc. Ark. Pharm. Assoc., p. 90. (Dig. & Com. U.S.P., 1907, p. 328).

Discusses the purchase by a wholesaler of the oil from farmers, while watching the farmers. The oil differs but little from synthetic methyl-salicylate.

Patch, E.L. 1907.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., 55, p. 329. (Dig. & Com. U.S.P., 1907, p. 337.)

States that oil of wintergreen sold as a leaf oil, is optically inactive and has a birch-like odor.

Scoville, W.L. 1907.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., 55, p. 329. (Dig. & Com. U.S.P., 1907, p. 337).

Gives sp. gr. and optical rotation of three lots of oil of wintergreen leaf.

Thurston, A. 1907.

Oleum Gaultheriae.

Merck's Report, 16, p. 124. (Dig. & Com. U.S.P., 1907, p. 337).

Slightly levogyrate up to -1°, in a 100 mm. tube, at 25°C.

——— 1908.

Oleum Gaultheriae.

Rpt. N.Y. State Board of Pharm., p. 14. (Dig. & Com. U.S.P. 1908, p. 385.)

2 out of 42 samples of oil of wintergreen were below standard.

Barnard, H.E. 1908.

Oleum Gaultheriae.

Rep. Ind. Bd. Health, 1908, p. 342. (Dig. & Com. U.S.P. 1908, p. 385.)

Gives sp.gr. and polarization of 3 samples, 2 of which were synthetic.

Bennett, C.T. 1908.

Oleum Betulae.

Pharm. Jour., 27, p. 622. (Dig. & Com. U.S.P. 1908, p. 372).

Discusses sp. gr., method of determining the proportion of methyl-salicylate, and the solubility of the oil.

Beringer, G.M. 1908.

Oleum Gaultheria.

Am. Journ. Pharm., 80, p. 436. (Dig. & Com. U.S.P., 1908, p. 385).

States that oil of Gaultheria is very rarely obtainable and that oil of betula should be officially substituted in the pharmacopoeia.

Dohme, A.R.L. & Engelhardt, H. 1908.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., 56, p. 819, (Dig. & Com. U.S.P., 1908, p. 385).

"Oil of wintergreen natural also showed too deep a color occasionally."

(Editor) 1908.

Oleum Gaultheria.

Drug Topics, 23, p. 162. (Dig. & Com. U.S.P., 1908, p. 385).

States that probably 90 p.c. of the sales of wintergreen oil are either of birch oil or of the synthetic articles.

Engelhardt, H. & Jones, H.W. 1908.

The Detection of Phenol and Cresotic Acids in Salicylic Acid and its Derivatives.

Proc. Am. Pharm. Assoc., 56, p. 868. (Dig. & Com. U.S.P., 1908, p. 351).

Discusses the test for phenol which three samples of oil of wintergreen gave.

Holm, T. 1908.

Gaultheria Procumbens L.

(Proc. Am. Pharm. Assoc., 56, p. 172)

Gives eight common names for Gaultheria Procumbens.

Patch, E.L. Chairman 1908.

Oleum Gaultheria.

Proc. Am. Pharm. Assoc., 56, p. 766. (Dig. & Com. U.S.P. 1908, p. 385).

The Committee on Drug Markets states that interesting reading is furnished by the variation in therapeutical action of methyl salicylate, oil of birch and oil of wintergreen.

Patch, E.L. Chairman 1908.

Methylis Salicylas.

Proc. Am. Pharm. Assoc., 56, p. 765. (Dig. & Com. U.S.P. 1908, p. 351).

Discusses the additions to methyl salicylate, which give it the head and rotary power of the true oil.

Farwell, A.O. 1908.

Wintergreen.

Merck's Rpt., 17, p. 35. (Dig. & Com. U.S.P., 1908, p. 384).

States that the official drug consists of the leaves of wintergreen.

Gibbs, H.D. 1908.

Methylis Salicylas.

Philippine Journ. Sc. 3, A, p. 357. (Dig. & Com. U.S.P., 1908, p. 351).

Reports the results of experiments on the solubility of methyl salicylate in water.

Gibbs, H.D. 1908.

Methylis Salicylas.

Philippine Journ. Sc., 3, A., p. 101. (Dig. & Com. U.S.P. 1908, p. 351).

"Discusses separation of salicylic acid from methyl salicylate and the hydrolysis of the ester."

Gibbs, H.D. 1908.

Oleum Gaultheria.

Philippine Journ. Sc., 3, A., p. 357. (Dig. & Com. U.S.P., 1908, p. 384).

"Solubility of methyl salicylate in water at 30°C. is 0.074 gm. in 100 cc."

Holm, T. 1908.

Oleum Gaultheria.

Merck's Rpt., 17, p. 1. (Dig. & Com. U.S.P., 1908, p. 384).

A lengthy account of Gaultheria Procumbens in which he gives the synonyms, uses, history of the name, and a description of the plant together with fourteen cuts showing the plant structure.

Kahn, J. 1908.

Oleum Gaultheriae.

Proc. New York Pharm. Assoc., 30, p. 224. (Merck's Rpt., 17, p. 213; Dig. & Com. U.S.P., 1908, p. 385).

Discusses labeling of oil of wintergreen.

Lehn & Fink. 1908.

Methylis Salicylas.

Annual Rpt., 1908, p. 18. (Dig. & Com. U.S.P., 1908, p. 351).

Discusses the inclusion of methylis salicylas, oleum betulae and oleum gaultheriae under one head in the U.S.P.

Pancoust, G.R. & Pearson, W.A. 1908.

Adulteration of Volatile Oils.

Am. Journ. Pharm., 80, p. 218. (Dig. & Com. U.S.P., 1908, p. 384).

Gives reasons why methyl salicylate and oil of birch or wintergreen should not be mixed. Also experimental work on detection of adulteration of oil of wintergreen.

Pancoust, G.R. & Pearson, W.A. 1908.

Natural Salicylates.

Am. Journ. Pharm., 80, p. 407. (Dig. & Com. U.S.P., 1908, p. 384; Chem. Abstr., 3, p. 356.)

Tells how oil of Gaultheria, oil of birch and methyl salicylate differ in constituents and also enumerates the various means of detection of adulteration.

Pearson, W.A. 1908.

Oils of Birch & Wintergreen.

Am. Journ. Pharm., 80, p. 77. (Dig. & Com. U.S.P., 1908, p. 372).

"More efficient tests for artificial tests of artificial methyl salicylate are imperative."

——— 1908.

Methylis Salicylas.

Semi-Ann. Rpt., Schimmel & Co., April, 1908, p. 149. (Dig. & Com. U.S.P., 1908, p. 350).

Gives properties of natural wintergreen oil.

——— 1908.

Methylis Salicylas.

Semi-Ann. Rpt. Schimmel & Co., Nov., 1908, p. 146. (Dig. & Com. U.S.P., 1908, p. 351).

Gives the more important properties of methyl salicylate.

1908.

Oleum Gaultheriae.

Semi-Ann. Rpt., Schimmel & Co., April, 1908, p. 109. (Dig. & Com. U.S.P., 1908, p. 384).

Demand for natural oil very brisk due to new Food & Drug Act.

Smith, Kline & French Co. 1908.

Oleum Gaultheriae.

Proc. Penn. Pharm. Assoc., 31, p. 76. (Dig. & Com. U.S.P., 1908, p. 385).

Eight samples were examined and found to be mainly mixtures of oil of birch and synthetic methyl salicylate or oil of birch alone. The total amount of wintergreen leaves that are actually harvested are sufficient to produce only a small fraction of the total amount of "Oil of Wintergreen" sold.

Smith, Kline & French Co. 1908.

Methylis Salicylas.

Analytical Rpt., p. 25. (Dig. & Com. U.S.P., 1908, p. 351).

Report that of two samples of methyl salicylate examined by them, both were of U.S.P. quality.

Smith, Kline & French Co. 1908.

Oleum Gaultheriae.

Analytical Rpt., p. 27. (Dig. & Com. U.S.P., 1908, p. 385).

States that of eight samples examined all contained mere mixtures of oil of birch and synthetic methyl salicylate or oil of birch alone.

Smith, Kline & French Co. 1908.

Oleum Betulae.

Analytical Rpt., p. 26. (Dig. & Com. U.S.P., 1908, p. 373).

Report that of eighteen samples examined all were of U.S.P. quality.

Beringer, G.M. 1909.

Oleum Betulae.

Proc. Am. Pharm. Assoc., 57, p. 812. (Dig. & Com. U.S.P., 1909, p. 511).

States that due to the scarcity of true oil of Gaultheria the U.S.P. should direct the use of oil of betula in all official preparations.

——— 1909.

Oleum Betulae.

Ann. Rept., U.S. Dept. Agric., 1908, p. 432. (Dig. & Com. U.S.P., 1908, p. 372).

Bureau of Chemistry reports an investigation of the production of oil of birch, and finds that this article is frequently adulterated by the addition of synthetic methyl salicylate.

Com. on Drug Markets. 1909.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., , p. . (Drug. Topics, 24, p. 359). (Dig. & Com. U.S.P., 1909, p. 524).

"True oil of Gaultheria will not form a clear solution with the KOH test, but forms a more or less cloudy solution and, on standing, small droplets of oil having a peculiar tea odor."

Dohme, A.R.L. & Engelhardt, H. 1909.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., 57, p. 718. (Dig. & Com. U.S.P., 1909, p. 524.)

"Natural oil of wintergreen had a dark red color."

Dupont, J. 1909.

Oleum Betulae.

Sc. & Ind. Bull. Roure-Bertrand Fils, Oct. 1909, p. 17. (Dig. & Com. U.S.P., 1909, p. 511).

Gives means of obtaining and also characters of the oil.

Düsterbehn, __ 1909.

Methylis Salicylas.

Apoth. Ztg., 24, p. 239. (Dig. & Com. U.S.P., 1909, p. 482).

Points out that the French Pharmacopoeia V requires that methyl salicylate have a boiling point of 224°C.

(Editor) 1909.

Natural Oil of Wintergreen from Gaultheria Procumbens.

Drug Topics, 24, p. 69. (Chem. & Drug., 74, p. 609; Dig. & Com. U.S.P., 1909, p. 524).

Discusses the giving of a guarantee for the genuineness of the oil.

Evans Sons Tescher & Webb. 1909.

Oleum Betulae.

Analytical Notes, 1909, p. 15. (Dig. & Com. U.S.P., 1909, p. 511).

States that a sample of crude oil gives the potassium cyanide reaction and had a specific gravity of 0.924.

Evans Sons Tescher & Webb. 1909.

Oleum Gaultheriae.

Analytical Notes, 1909, p. 58. (Dig. & Com. U.S.P., 1909, p. 525).

Gives the means of distinction between the natural and artificial oils.

Evans Sons Tescher, & Webb. 1909.

Methylis Salicylas.

Analytical Notes, 1909, p. 41. (Dig. & Com. U.S.P. 1909, p. 482).

States that the commercial article has a purity not lower than 99 p.c. as a rule.

Gane, E.H. & Webster,M.H. 1909.

Oleum Gaultheriae.

Drug Topics, 24, p. 69. (Dig. & Com. U.S.P., 1909, p. 524).

Comment on a circular published dealing in essential oils, declaring their inability to guarantee the genuineness of oil of wintergreen leaves.

Henkel, Alice 1909.

Oleum Betulae.

Bull. Bur. Plant Ind., U.S.D.A., No. 139, p. 16. (Dig. & Com. U.S.P., 1909, p. 511).

Gives common names, habitat and range, description of tree, description of bark, collection, prices and uses.

Kline, C.M. 1909.

Oleum Gaultheriae.

Proc. N.W.D.A., 1909, p. 125. (Dig. & Com. U.S.P., 1909, p. 525).

Gives results of the examination of two samples of oil of Gaultheria.

Kraemer, H. 1909.

Oleum Gaultheriae.

Bull. Am. Pharm. Assoc., 4, p. 119. (Dig. & Com. U.S.P., 1909, p. 524).

Believes that the cultivation of the herb was the best plan to secure a reliable oil.

LaWall, C.H. 1909.

Oleum Betulae.

Proc. N.J. Pharm. Assoc., 39, p. 103. (Dig. & Com. U.S.P., 1909, p. 511).

Thinks that we soon shall have more certain tests for the differentiation of oil of sweet birch, oil of wintergreen and methyl salicylate.

Merck, E. 1909.

Methylis Salicylas.

Bull. sc. pharmacol., 16, p. 551. (Dig. & Com. U.S.P., 1909, p. 482).

Compares sp. gr. given by the Ph. Fr. V. with that given elsewhere.

Pancoust, G.R. & Pearson, W.A. 1909.

Oleum Gaultheriae.

Am. Drugg., 54, p. 329. (Dig. & Com. U.S.P., 1909, p. 524).

Discusses detection of adulteration in oil of wintergreen.

Pancoust, G.R. 1909.

Oleum Gaultheriae.

Bull. Am. Pharm. Assoc., 4, p. 119. (Dig. & Com. U.S.P., 1909, p. 523).

States that the amount of so-called true oil of Gaultheria is ten times that possible to produce from the amount of herb actually harvested.

Sayre, L.E. & Ziefle, A. 1909.

Oleum Gaultheriae.

Bull. Kan. Bd. Health, 5, p. 16. (Dig. & Com. U.S.P., 1909, p. 525.)

One sample of the oil was found to be below standard.

———— 1909.

Methylis Salicylas.

Semi-Ann. Rpt. Schimmel & Co., Oct. 1909, p. 128. (Dig. & Com. U.S.P., 1909, p. 482.)

Discusses prices and also cases of poisoning by methyl salicylate.

———

———— 1909.

Oleum Betulae.

Semi-Ann. Rpt. Schimmel & Co., April, p. 90. (Dig. & Com. U.S.P., 1909, p. 512.)

Discusses the output demand and prices of the oil.

———

Saalbach, L. 1909.

Methylis Salicylas.

Proc. Penn. Pharm. Assoc., 32, p. 185. (Dig. & Com. U.S.P. 1909, p. 482.)

Methyl salicylate constitutes some over 99 p.c. of oil of birch and oil of wintergreen. The pharmacopoeia sanctions the use of methyl salicylate as a flavoring agent while the Pure Food & Drug Law prohibits it.

———

White Cross Congress. 1909.

Oleum Gaultheriae.

Chem. & Drug., 75, p. 68. (Dig. & Com. U.S.P., 1909, p. 523.)

States that oil of Betula lenta as well as Gaultheria procumbens may be described as natural wintergreen oil.

———

Wiley, H.W. 1909.

Oleum Gaultheriae.

Ann. Rpt., U.S.D.A. for 1909, p. 432. (Dig. & Com. U.S.P. 1909, p. 524.)

Investigations show that very little genuine oil of wintergreen is produced.

Woods, C.D. 1909.

Spirit of Gaultheriae.

Rep. Maine Agric. Exper. Sta., 1909, opp. p. 185. (Dig. & Com. U.S.P., 1909, p. 524.)

"9 samples of spirits of Gaultheria - 3 below 90 p.c., 4 within 90 and 110 p.c., and 2 above 110 p.c. of the U.S.P. standard. From 90-110 p.c. of the U.S.P. standard is the range of variation permitted in the state of Maine."

Vanderkleed, C.E. 1909.

Oleum Gaultheriae.

Proc. Penn. Pharm. Assoc., 32, p. 128. (Dig. & Com. U.S.P. 1909, p. 524.)

For flavoring purposes oil of Gaultheria, oil of Betula and methyl salicylate are to be considered equivalent according to the U.S.P. under the heading of methyl salicylate. For all other medical purposes the three have to be distinctly discriminated.

It is difficult for a retail druggist to detect the difference between Gaultheria and sweet birch oil and he should therefore buy these from very reliable sources.

Adams, R.W. 1910.

Oil of Wintergreen from Gaultheria.

Thesis - 1910 Univ. Wis.

Gives a lengthy write-up on oil of wintergreen with numerous references.

Beilstein, C. 1910.

Oleum Betulae.

Proc. N.W.D.A., 1910, p. 98. (Dig. & Com. U.S.P., p. 568.)

Discusses an investigation of the production of oil of wintergreen.

Beringer, G.M. 1910.

A Note on Oil of Gaultheria.

Amer. Journ. Pharm., 82, p. 437-438; Proc. N.J. Pharm. Assoc., 1910.

Gives a comparison of distillates obtained by G.M. Beringer and H. Kraemers.

Beringer, G.M. 1910.

Oleum Gaultheriae.

Proc. N.J. Pharm. Assoc., 40, p. 57; Am. Jour. Pharm., 82, p. 437. (Dig. & Com. U.S.P. 1910, p. 587.)

Reports sp. gr. and optical rotation of 2 samples of oil of Gaultheria of known origin.

Beringer, G.M. 1910.

Oleum Gaultheriae.

Proc. N.J. Pharm. Assoc., 40, p. 57. (Dig. & Com. U.S.P. 1910, p. 587.)

Reports sp. gr. and optical rotation of two samples of known origin.

Bush, W.J. & Co. 1910.

Oleum Gaultheriae.

Chem. & Drugg., 76, p. 719. (Dig. & Com. U.S.P., 1910, p. 589.)

The difference in flavor between the natural oil and the synthetic product is so slight that there is no reason for the exclusion of pure methyl salicylate from the pharmacopoeias.

Committee on Adulterations. 1910.

Oleum Gaultheriae.

Proc. N.Y. Pharm. Assoc., 32, p. 169. (Dig. & Com. U.S.P., 1910, p. 588.)

Discusses methods of the detection of synthetic oils.

Davis, J.E. 1910.

Methylis Salicylas.

Proc. Mich. Pharm. Assoc., 28, p. 63. (Dig. & Com. U.S.P., 1910, p. 537.)

States that oil of Gaultheria worth twice oil of betula, oil of betula is worth three times methyl salicylate, and all three of these test practically alike.

Evans Sons Tescher & Webb. 1910.

Methylis Salicylas.

Analytical Notes, 1910, p. 48. (Dig. & Com. U.S.P., 1910, p. 537.)

Gives the values of six samples of synthetic wintergreen oil by giving sp. gr. refractive index, solubility, and percentage alcohol.

Gilmour, D. 1910.

Oleum Gaultheriae.

Brit. Dent. Jour., , p. . (Pharm. Jour., 84, p. 644; Dig. & Com. U.S.P., 1910, p. 589.)

Lists the uses of oil of Gaultheria in the United States.

Hall, W.R. 1910.

Oleum Gaultheriae.

Proc. Mich. Pharm. Assoc., 28, p. 70. (Dig. & Com. U.S.P. 1910, p. 588.)

"Hall states that oil of wintergreen while it has considerable odor it has not the strong distinctive taste of oil of betula or Gaultheria true."

Hall, W.R. 1910.

Methylis Salicylas.

Proc. Mich. Pharm. Assoc., 28, p. 70. (Dig. & Com. U.S.P. 1910, p. 537.)

"Hall states that oil of wintergreen while it has considerable odor has not the strong distinctive taste of oil of betula or Gaultheria true."

Harvey, T.F. and Wilkie, J.M. 1910.

Oleum Betulae.

Chem. & Drugg., 76, p. 421. (Dig. & Com. U.S.P., 1910, p. 567.)

State that the sp. gr. given is somewhat low.

Hill, C.A. and Umney, J.C. 1910.

Oleum Gaultheriae.

Pharm. Jour., 84, p. 180. (Chem. & Drugg., 76, p. 273; Dig. & Com. U.S.P., 1910, p. 588.)

Suggests a synonym for oil of wintergreen.

Hill, C.A. and Umney, J.C. 1910.

Oleum Betulae.

Chem. & Drug., 76, p. 273. (Dig. & Com. U.S.P., 1910, p. 567.)

Gives method of obtaining the oil, its characters and tests.

Hill, C.A. and Umney, J.C. 1910.

Oleum Betulae.

Pharm. Jour., 84, p. 180. (Dig. & Com. U.S.P., 1910, p. 567.)

Discusses the properties of the oil obtained by distillation from the bark of Betula lenta.

Kremers, E. 1910.

Oleum Gaultheriae.

Proc. Wis. Pharm. Assoc., 30, p. 36. (Dig. & Com. U.S.P., 1910, p. 587.)

States that S. Carolina wintergreen yields 1 p.c. and Wisconsin wintergreen yields 1.4 p.c. of oil.

Mason, H.B. 1910.

Oleum Gaultheriae.

Proc. Mich. Pharm. Assoc., 28, p. 71. (Dig. & Com. U.S.P. 1910, p. 588.)

"Mason asserts that the next pharmacopoeia will declare that oil of wintergreen, oil of betula and methyl salicylate are identical."

Noyes, R. 1910.

Oleum Gaultheriae.

Proc. Minn. Pharm. Assoc., 26, p. 79. (Dig. & Com. U.S.P., 1910, p. 588.)

States that the preference of the natural oil to the synthetic is an idealism.

Noyes, R. 1910.

Oleum Gaultheriae.

Proc. Minn. Pharm. Assoc., 26, p. 71. (Dig. & Com. U.S.P., 1910, p. 587.)

Discusses the withdrawal of oil of wintergreen leaves from the market after the pure food law.

Pearson, __ & Sechler, __. 1910.

Oleum Betulae.

Proc. Penn. Pharm. Assoc., 33, p. 142. (Dig. & Com. U.S.P., 1910, p. 588.)

States that the slight deviation of polarized light is hardly sufficient to be used as an indicator of purity.

Pearson, W.A. and Sechler, H.M. 1910.

Oleum Gaultheriae.

Merck's Rpt., 19, p. 45. (Dig. & Com. U.S.P., 1910, p. 588.)

The odor limit test together with the slight deviation of polarized light are not sufficient to be used as an indicator of purity.

Pearson, W.A. and Sechler, H.M. 1910.

Oleum Betulae.

Merck's Rpt., 19, p. 45. (Dig. & Com. U.S.P., 1910, p. 568.)

States that the odor dilution test and the color reactions with nitrous acid are valuable in distinguishing oil of Betula from methyl salicylate.

Rabak, F. 1910.

Oleum Gaultheriae.

Bur. Plant Ind., U.S.D.A., Bull. No. 195, p. 38. (Dig. & Com. U.S.P., 1910, p. 587.)

Discusses the production of the oil.

Sachsse, E. & Co. 1910.

Oleum Betulae.

Brit. & Col. Drugg., 57, p. 241. (Dig. & Com. U.S.P., 1910, p. 567.)

Proposes the introduction of artificial oil of wintergreen in place of the natural oil in the Br. Pharm.

Sachsse, E. & Co. 1910.

Oleum Gaultheriae.

Chem. & Drug., 76, p. 491. (Dig. & Com. U.S.P., 1910, p. 589.)

Suggests the introduction of artificial oil of wintergreen - i.e. pure methyl salicylate in the Br. Pharm.

Sayre, L.E. 1910.

Oleum Gaultheriae.

Proc. Am. Pharm. Assoc., 58, p. 1096. (Dig. & Com. U.S.P., 1910, p. 589.)

Gives number of samples of the oil examined, passed, and illegal in the state of Kansas.

1910.

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., April, p. 138. (Dig. & Com. U.S.P., 1910, p. 589.)

Discusses the properties of natural oil of wintergreen.

1910.

Methylis Salicylas.

Semi-Ann. Rpt. Schimmel & Co., April, p. 132. (Dig. & Com. U.S.P., 1910, p. 536.)

Discusses the properties of artificial wintergreen oil.

1910.

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 142. (Dig. & Com. U.S.P., 1910, p. 587.)

Discusses prices, output of the New York branch and the test for natural oil of wintergreen.

Seidell, A. 1910.

Methylis Salicylas.

Bull. No. 67, Hyg. Lab. U.S.P.H. & M.H.S. 1910, p. 67, 91. (Dig. & Com. U.S.P., 1910, p. 536.)

Reports experimental determinations on the solubility of methyl salicylate.

Southall Bros. & Barclay, __ 1910.

Methylis Salicylas.

Rpt., 1910, p. 26. (Dig. & Com. U.S.P., 1910, p. 537.)

Suggests the addition of the cheaper methyl salicylate to the Pharmacopoeia as preferable to the pharmacist and equally satisfactory to the medical profession.

Wiley, H.W. 1910.

Oleum Gaultheriae.

Ann. Rpt. U.S.D.A., p. 440. (Dig. & Com. U.S.P., 1910, p. 587.)

Reports on the supply of true oil of wintergreen.

Krayser 1910.

Oleum Gaultheriae.

Chem. & Drugg., 76, p. 289. (Dig. & Com. U.S.P., 1910, p. 589.)

States that those accustomed to handling the natural oil could scarcely mistake the genuine oil for synthetic methyl salicylate.

Beardley, E.J.G. 1911.

Oleum Gaultheriae.

Jour. Am. Med. Assoc., 56, p. 263. (Dig. & Com. U.S.P., 1911, p. 479.)

Discusses the use of oil of Gaultheria.

(Editor) 1911.

Oleum Gaultheriae.

Am. Drugg., 58, p. 140. (Dig. & Com. U.S.P., 1911, p. 478.)

Discusses the harvesting and distilling of wintergreen.

Henkel, Alice 1911.

Oleum Gaultheriae.

Bull. Bur. Plant Ind. U.S.D.A., No. 219, p. 19. (Dig. & Com. U.S.P., 1911, p. 478.)

Gives common names, description; and discusses habitat, range, collection, prices and uses.

Howard, C.D. 1911.

Oleum Gaultheriae.

New Hampshire San. Bull., 3, No. 13, p. 253. (Dig. & Com. U.S.P., 1911, p. 479.)

"Reports that 2 of 8 samples of spirit of wintergreen contained 10 p.c. less oil than required by the Pharmacopoeia. He also reports on 5 samples of spirit of Gaultheria, 3 of which were misbranded and adulterated."

Howard, C.D. 1911.

Oleum Gaultheriae.

New Hampshire San. Bull., 1911, 3, No. 14, p. 282. (Dig. & Com. U.S.P., 1911, p. 479.)

Reports that 2 of 8 samples of spirit of wintergreen contained 10 p.c. less oil than required by the U.S.P.

Kremers, E. 1911.

Oleum Gaultheriae.

Pharm. Era, 44, p. 549. (Dig. & Com. U.S.P., 1911, p. 478.)

Suggests furnishing employment to Indians by establishing wintergreen distilleries.

Leonard, H.W. 1911.

Distillation of Oil of Wintergreen in the U.S.

Thesis Univ. of Wis., 1911.

Gives distillation of spring and fall gathered leaves, oxidase in Gaultheria leaves, map showing the distribution of Gaultheria procumbens in U.S. and the distillation

centers, distillation of Gaultheria in Pennsylvania, Wisconsin, and bibliography.

Lloyd, J.U. 1911.

Oleum Gaultheria.

Bull. Lloyd Libr., No. 18, p. 38. (Dig. & Com. U.S.P., 1911, p. 478.)

Gives a valuable use for oil of Gaultheria.

Lloyd, J.U. 1911.

Oleum Gaultheriae.

Nat. Eclect. Med. Assoc. Quart., 2, p. 333. (Dig. & Com. U.S.P., 1911, p. 478.)

Tells of the first therapeutical use of oil of Gaultheria.

Miller, A.W. 1911.

Oleum Gaultheriae.

Proc. N.W.D.A., 1911, p. 96. (Dig. & Com. U.S.P., 1911, p. 479.)

Comments on the comparative prices of oil of Gaultheria.

Moore, R.A. 1911.

Wintergreen Oil.

Letter to Mr. Emery.

Letter asks for a reply to a letter from a party at Kilbourn concerning the manufacturing of wintergreen oil.

Pearson, W.A. 1911.

Oleum Betulae.

Proc. Penn. Pharm. Assoc., 34, p. 125. (Dig. & Com. U.S.P. 1911, p. 469.)

States that three samples of oil of birch were rejected because the presence of added synthetic methyl salicylate was suspected.

Reinhart, W. 1911.

Schimmel & Co. Semi-Ann. Rpt., Oct., p. 96. Proc. Am. Pharm. Assoc., 59, p. 377.

Gives botanical source and characters of Nilgiri Gaultheria Oil.

Robinson, B. 1911.

Methylis Salicylas.

Critic and Guide, 14, p. 339. (Dig. & Com. U.S.P., 1911, p. 442.)

Gives a very valuable use for methyl salicylas.

——— 1911.

Methylis Salicylas.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 110. (Dig. & Com. U.S.P., 1911, p. 442.)

Enumerates the uses of methyl salicylate and also states where it is used most extensively.

——— 1911.

Oleum Gaultheriae.

Semi-Ann. Rpt. Schimmel & Co., Apr., p. 119. (Dig. & Com. U.S.P., 1911, p. 479.)

Discusses the relationship between the increased production and the market and also gives a lengthy discussion on the distillation of oil of wintergreen.

Smith, Kline & French Co. 1911.

Oleum Gaultheriae.

Analytical Report, 1911, p. 32. (Dig. & Com. U.S.P., 1911, p. 479.)

States that two samples were examined and both conformed with the U.S.P. test for purity.

Smith, Kline & French Co. 1911.

Oleum Betulae.

Analytical Report, 1911, p. 30. (Dig. & Com. U.S.P., 1911, p. 469.)

States that of 52 samples which were examined four were rejected as being mixtures of oil of birch and synthetic methyl salicylate.

Stanislaus, I.V.S. & Semmel, P. 1911.

The Stanislaus Test to Distinguish Between Oil of Gaultheria, Oil of Betula and Methyl Salicylate.

Proc. Penn. Pharm. Assoc., 34, p. 245. (Dig. & Com. U.S.P. 1911, p. 469.)

Gives a lengthy account of the Stanislaus test to distinguish between oil of Gaultheria, oil of Betula and methyl salicylate.

Also gives conversation between Stanislaus, Walton, Kline, Stroup and Campbell on this subject.

(Proc. Am. Pharm. Assoc., 59, p. 378.)

Street, J.P. 1911.

Oleum Gaultheria.

Rpt. Conn. Agr. Expt. Sta. for 1910, pp. 513 & 581. (Dig. & Com. U.S.P., 1911, p. 479.)

Reports that 5 out of 11 samples of the oil were adulterated or were below standard.

True, R.H. 1911.

Oleum Gaultheriae.

Proc. N.H.D.A., 1911, p. 179. (Dig. & Com. U.S.P., 1911, p. 499.)

Discusses the question of Gaultheria - oil of wintergreen.

_____ 1912.

Oleum Gaultheria.

Semi-Ann. Rpt. Schimmel & Co., April, p. 132. (Dig. & Com. U.S.P., 1912, p. 361.)

States the yield of Indian oil of wintergreen is obtained from a known amount of leaves and stalks.

Burnett, J.A. 1912.

Oleum Gaultheria.

Phys. Drug News, 7, p. 116. (Dig. & Com. U.S.P., 1912, p. 362.)

"The hypodermic use of oil of wintergreen deserves a thorough trial."

Byrnes, G. 1912.

Oleum Gaultheria.

Proc. N.J. Pharm. Assoc., 42, p. 89. (Dig. & Com. U.S.P. 1912, p. 361.)

Discusses informing the public of the supply of genuine oil of birch, but doubtful as to the supply of genuine oil of wintergreen.

Diekman, G.C. 1912.

Oleum Gaultheria.

Proc. N.Y. Pharm. Assoc., 34, p. 134. (Dig. & Com. U.S.P., 1912, p. 361.)

"Quotes Harvey W. Wiley to the effect that there is very little pure oil of Gaultheria on the market."

(Editor) 1912.

Oleum Gaultheria.

Drug Circ., 56, p. 332. (Dig. & Com. U.S.P., 1912, p. 362.)

Discusses the sale of Gaultheria in original packages.

Evans Sons Tescher & Webb. 1912.

Methylis Salicylas.

Analytical Notes, 1912, p. 78. (Dig. & Com. U.S.P., 1911, p. 442.)

Gives the sp. gr. Opt. Rot., Ref. index, solubility in alcohol vols., composition and special values of methyl salicylate.

Evans Sons, Tescher & Webb. 1912.

Oleum Gaultheriae.

Analytical Notes, 1911, p. 73. (Dig. & Com. U.S.P., 1911, p. 479.)

Gives the sp. gr., Ref. Ind., and the Sap. val. of three samples of wintergreen oil.

Gibbs, H.D., Williams, R.R. & Pratt, D.S. 1912.

Methyl Salicylate III.

Philippine Jour. Sci., 7, Sec. A., p. 79. (Dig. & Com. U.S.P., 1912, p. 341.)

"The coloration of methyl salicylate and some allied compounds in the sunlight."
Studied the action of sunlight on various phenols.

Howard, C.D. 1912.

Oleum Gaultheria.

Rep. N.H. Bd. Health, 1912, p. 170. (Dig. & Com. U.S.P., 1912, p. 362.)

7 of 14 samples of spirit of wintergreen were not conformable to requirements.

Johnson & Johnson. 1912.

Oleum Gaultheria.

Laboratory Notes, 1912, p. 28. (Dig. & Com. U.S.P., 1912, p. 361.)

Sp. gr. varied from 1.175 to 1.18.

Noyes, C.R. 1912.

Oleum Betulae.

Proc. S.D. Pharm. Assoc., 27, p. 43. (Dig. & Com. U.S.P., 1912, p. 356.)

Discusses the difficulty in distinguishing oil of sweet birch, oil of wintergreen and methyl salicylate.

Pearson, W.A. 1912.

Oleum Gaultheria.

Proc. Penn. Pharm. Assoc., 35, p. 175. (Dig. & Com. U.S.P., 1912, p. 361.)

One lot was rejected on account of the probable addition of synthetic methyl salicylate.

Packard, C.H. 1912.

Oleum Gaultheria.

Proc. Mass. Pharm. Assoc., 31, p. 100. (Dig. & Com. U.S.P., 1912, p. 362.)

Believes that in order to buy a guaranteed oil one should pay accordingly.

Stanislaus, I.V.S. 1912.

Oleum Gaultheriae.

Drugg. Circ., 56, p. 271. (Dig. & Com. U.S.P., 1912, p. 362.)

Discusses the advisability of the U.S.P. recognizing only oil of birch.

Stanislaus, I.V.S. 1912.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 1, p. 391. (Dig. & Com. U.S.P., 1912, p. 362.)

Urges that U.S.P. admit only oil of birch since its use is much more common.

Swain, R.L. 1912.

Oleum Gaultheria.

Drugg. Circ., 56, p. 63. (Dig. & Com. U.S.P., 1912, p. 361.)

Gives an account of the naming of Gaultheria.

——— 1913.

Oleum Gaultheria.

Semi-Ann. Rpt. Schimmel & Co., April, p. 108. (Dig. & Com. U.S.P., 1913, p. 379.)

States that the market for American wintergreen oil is unchanged. Also gives H.D. Gibbs, R.R. Williams and D.S. Pratt's ideas as to what the yellow color of methyl salicylate is due.

——— 1913.

Oleum Gaultheria.

Chem. & Drugg., 83, p. 447. (Dig. & Com. U.S.P., 1913, p. 378.)

Mentions the seizure of a shipment of oil of birch or oil of wintergreen.

——— 1913.

Oleum Gaultheria.

Oil, Paint & Drug Rpt., 83, Dec. 29, p. 11. (Dig. & Com. U.S.P., 1913, p. 378.)

States that 9 packages and 19 cans purporting to contain oil of birch or oil of wintergreen were seized at various points in the United States.

(Editor) 1913.

Oleum Gaultheria.

N.A.R.D. Notes, 16, p. 216. (Dig. & Com. U.S.P., 1913, p. 378.)

Tells of the making of the so-called "true" oil of wintergreen.

Gibbs, H.D., Williams, R.R., Galajikian, A.S. 1913.

"The saponification of methyl salicylate, methyl benzoate and the methyl ether of methyl salicylate."

Philippine Jour. Sci., 8, Sec. A., p. 1. (Dig. & Com. U.S.P., 1913, p. 353.)

A lengthy detailed paper dealing with experiments along the above lines.

Hortvet, J. 1913.

Oleum Gaultheria.

Rep. Minn. D. & F. Dept., 1913, p. 51. (Dig. & Com. U.S.P., 1913, p. 379.)

Out of 13 samples of oil of wintergreen 8 were found to be illegal.

Howard, C.D. 1913.

Oleum Gaultheria.

Bull. N.H. Bd. Health, 2, p. 17. (Dig. & Com. U.S.P., 1913, p. 379.)

Of 8 samples examples 4 were nonconformable to regulations.

Kremers, E. 1913.

Wintergreen Leaves.

Letter to Rev. J. Stucki 9-8-13.

Acknowledges receipt of first lot of wintergreen leaves shipped from Black River Falls, Wisconsin.

North, H. 1913.

Oleum Betulae.

Rpt. Lehn & Fink's Analyt. Dept. (1910-1912), 1913, p. 87. (Dig. & Com. U.S.P., 1912, p. 356.)

Discusses the rejection of the oil due to a deep red color indicating the presence of iron.

North, H. 1913.

Methylis Salicylas.

Rpt. Lehn & Fink's Analyt. Dept. (1910-1912), p. 88. (Dig. & Com. U.S.P., 1913, p. 341.)

Discusses the sale of the oils of birch and wintergreen under one title, methyl salicylate.

Noyes, C.R. 1913.

Oleum Gaultheria.

Northwest. Drugg., 14, May, p. 102. (Dig. & Com. U.S.P., 1913, p. 379.)

Discusses the inclusion of oil of wintergreen, oil of birch and methyl salicylate under one head.

Patch, E.L. 1913.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 2, p. 682. (Dig. & Com. U.S.P., 1913, p. 379.)

States that no test has yet been published which will identify mixtures of true oil of wintergreen.

Pearson, W.A. 1913.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 2, p. 161. (Dig. & Com. U.S.P., 1913, p. 379.)

Rejection of one lot was due to the probable addition of methyl salicylate.

Smith, C.E. 1913.

Methylis Salicylas.

Jour. Am. Pharm. Assoc., 2, p. 68.

Criticism of the U.S.P. assigning it an anhydrous formula when it contains three molecules of water.

Stewart, W.M. 1913.

Oleum Betulae.

Census Rpt. Am. Jour. Pharm., 85, p. 486; Dig. & Com. U.S.P. 1913, p. 379.

States that Connecticut produces oil of black birch and New Jersey produces oil of wintergreen.

_____ 1914.

Oleum Gaultheria.

Semi-Ann. Rpt. Schimmel & Co., April, p. 98. (Dig. & Com. U.S.P., 1914, p. 377.)

States that prices have been stable for some time, also, from an English periodical gives a method for the detection of the addition of synthetically manufactured methyl salicylate in the natural product.

_____ 1914.

Oleum Gaultheria.

Spatula, 20, p. 217. (Dig. & Com. U.S.P., 1914, p. 377.)

A wintergreen mill. An illustrated description of a plant for making oil of birch.

———— 1914.

Methylis Salicylas.

Chem. & Drugg., 85, p. 487. (Dig. & Com. U.S.P., 1914, p. 348.)

"The Brit. Ph. V, methyl salicylate or synthetic oil of wintergreen contains not less than 98% of pure methyl salicylate."

———

(Editor) 1914.

Oleum Gaultheria.

Perf. & Ess. Oil Rec., 5, p. 130. (Dig. & Com. U.S.P., 1914, p. 377.)

Discusses the United States Agricultural Department test for the detection of synthetic methyl salicylate in wintergreen and sweet birch oils.

———

E'we, G.E. 1914.

Oleum Betulae.

Proc. Penn. Pharm. Assoc., 37, p. 151. (Dig. & Com. U.S.P., 1914, p. 369.)

All lots examined were optically inactive. One was orange color instead of the usual yellowish-white.

———

Fisher, W.S. 1914.

Wintergreen Industry.

Letter to E.K. Univ. Wis. 10-30-14.

Letter is concerning the cost of starting a wintergreen distillery in Omida County, Wisconsin.

———

Hanzlik, P. J. 1914.

Methylis Salicylas.

Ann. Rep. Therap. Res. Com. 3, p. 131. (Dig. & Com. U.S.P., 1914, p. 348.)

"The salicylates. A historical and critical review of the literature."

Hortvet, J. 1914.

Oleum Gaultheria.

Rpt. Minn. D. & F. Com., 1914, p. 57. (Dig. & Com. U.S.P., 1914, p. 378.)

Of 19 samples examined, 11 were reported illegal.

Jensen, H.R. 1914.

Oleum Gaultheria.

Evans' Anal. Notes, 1914, p. 70. (Dig. & Com. U.S.P., 1914, p. 377.)

Gives specific gravity, refractive index, optical rotation, and saponification value of 9 samples of wintergreen oil derived from white birch bark.

Kremers, E. 1914.

Wintergreen plants.

Letter to Rev. J. Stucki of Black River Falls, Wis. 5-20-14.

Tells how the wintergreen plants thrived in artificial and natural shade.

Latham, T. 1914.

Methylis Salicylas.

Jour. Am. Pharm. Assoc., 3, p. 237. (Dig. & Com. U.S.P., 1914, p. 348.)

Gives formulas for prescriptions in which methyl salicylate is used.

Lythgoe, H.C. 1914.

Oleum Gaultheria.

Rep. Mass. Bd. Health, 1913, p. 410. (Dig. & Com. U.S.P., 1914, p. 378.)

Of 63 samples of spirit of wintergreen examined 57 were genuine and 6 were adulterated.

Noyes, C.R. 1914.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 3, p. 854. (Dig. & Com. U.S.P., 1914, p. 377.)

Recommends methyl salicylate above oil of gaultheria or oil of sweet birch.

Noyes, C.R. 1914.

Oleum Gaultheriae.

Proc. Minn. Pharm. Assoc., 1914, p. 190. (Dig. & Com. U.S.P., 1914, p. 377.)

Recommends purchase of methyl salicylate and discusses its virtues.

Patch, E.L. 1914.

Methylis Salicylas.

Jour. Am. Pharm. Assoc., 3, p. 1284. (Dig. & Com. U.S.P., 1914, p. 348.)

Ennumerates new tests which he claims indicates the presence of adulterations.

Remington, J.P. 1914.

Oleum Gaultheriae.

Jour. Am. Pharm. Assoc., 5, 1914, p. 5. (Dig. & Com. U.S.P., 1914, p. 377.)

"General article under methyl salicylate to replace the present U.S.P. VIII text for the oil of sweet birch, oil of Gaultheria, and methyl salicylate. Includes the requirement that the source from which the product is derived in every case must be stated on the label."

Remington, J.P. 1914.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 3, p. 1104. (Dig. & Com. U.S.P., 1914, p. 377.)

Gives the products of methylis salicylas when assayed, properties, and also method for assay.

Rippetoe, J.R. 1914.

Oleum Gaultheria.

Am. Jour. Pharm. 86, p. 443. (Dig. & Com. U.S.P., 1914, p. 377.)

Gives amount of alcohol and ash found in two samples of oil of wintergreen.

Strode, S.E. 1914.

Oleum Gaultheria.

Rep. Ohio D. & F. Div., 1914, p. 119. (Dig. & Com. U.S.P., 1914, p. 378.)

Of two samples of oil of wintergreen examined one was not passed.

Umney, J.C. 1914.

Oleum Gaultheria.

Perf. & Ess. Oil Rec., 5, p. 13. (Dig. & Com. U.S.P., 1914, p. 377.)

Discusses the use, habitat, and the most important ingredient in oil of oil of Gaultheria.

Watson, G.N. & Sayre, S.E. 1914.

Oleum Gaultheria.

Jour. Am. Pharm. Assoc., 3, p. 1658. (Dig. & Com. U.S.P., 1914, p. 377.)

Gives an account of some new color reactions for the differentiation of oil of wintergreen, oil of birch and synthetic m ethyl salicylate.

Woods, C.D. 1914.

Oleum Gaultheria.

Off. Inst. Maine Agric. Expt. Sta., No. 61, p. 90. (Dig. & Com. U.S.P., 1914, p. 378.)

Of 25 samples of spirit of Gaultheria examined, 13 were not within 10% of legal strength.

——— 1915.

Methylis Salicylis.

Semi-Ann. Rpt. Schimmel & Co., Oct., p. 48. (Dig. & Com. U.S.P., 1915, p. 316.)

Gives some of the properties of methyl salicylate.

——— 1915.

Wintergreen Oil.

Semi-Ann. Rpt. Schimmel & Co., Oct. p. 41.

Gives the method of procedure in the test for distinguishing natural from artificial wintergreen oil. Discusses various opinions on this test and also various methods of procedure.

(Anonymous) 1915.

Methylis Salicylas.

Jour. Am. Med. Assoc., 64, p. 1156. (Dig. & Com. U.S.P., 1915, p. 316.)

A discussion of the therapeutical properties of methyl salicylate.

Bartholow, P. 1915.

Methylis Salicylas.

Am. Med. 21, p. 488. (Dig. & Com. U.S.P., 1915, p. 316.)

Gives a new use for methyl salicylate.

(Editor) 1915.

Distilling Oil of Wintergreen.

Drugg. Circ., 59, p. 737.

Replying to query from N.J. refers to Dr. Circ. March, 1915, p. 177; Dr. Circ. Sept., 1914, p. 532.

(Editor) 1915.

Methylis Salicylis.

Perf. & Ess. Oil Rec., 6, p. 334. (Dig. & Com. U.S.P., 1915, p. 316.)

Gives the physical properties and the source of methylis salicylas.

Gesell, H. 1915.

Methylis Salicylis.

Pract. Drug., 33, June p. 19. (Dig. & Com. U.S.P., 1915, p. 316.)

A criticism of the article by Watson & Sayre q.v.

LaWall, C.H. 1915.

Methylis Salicylas.

Am. J. Pharm., 87, p. 371. (Dig. & Com. U.S.P., 1915, p. 315.)

Tells how methyl salicylate is recognized and what it is required to contain; also how oil of Gaultheria is defined.

Melviler, A. 1915.

Oil of Wintergreen.

Letter to E.K. Univ. Wis. 9-15-15.

Letter requests information for Mr. Fitzgerald of Oshkosh, Wisconsin, concerning the chemical processes gone through in the manufacture of oil of wintergreen.

Miller, H.E. 1915.

Wintergreen Oils.

Letter to E.K. Univ. Wis. 4-20-15.

Letter from Cameron, Wisconsin, concerns the profit and cost of distilling oil of wintergreen in Wisconsin.

Morrison, F.B. 1915.

Wintergreen Leaves.

Letter to E.K. Univ. Wis. 7-8-15.

Letter from Madison, Wisconsin, concerns the commercial value of wintergreen leaves, price and where sold.

Anonymous. 1916.

Oleum Gaultheriae.

N.A.R.D. Jour., 21, p. 805. (Dig. & Com. U.S.P., 1916, p. 245.)

"A short note giving information relative to the cultivation of wintergreen in America."

Hall, T.F. 1916.

Oil of Wintergreen.

Letter to E.K. Univ. Wis. 9-18-16.

Letter from Laceyville, Pa. concerns the obtaining of an outfit and full particulars concerning the distillation of oil of wintergreen.

Leone, G. 1916.

Influence of Methyl Salicylate on Oiligenesis.

Arch. farm. sper. 22, p. 377. (Chem. Abstr. 11, p. 995; Dig. & Com. U.S.P., 1917, p. 249.)

Gives effect of administering methyl salicylate both orally and subcutaneously.

Scoville, W.L. 1916.

Methylis Salicylis.

Bull. Pharm. 30, p. 364. (Dig. & Com. U.S.P., 1916, p. 225.)

Gives advantages of U.S.P. IX specifications for methyl salicylate.

Solaway, W. 1916.

Wintergreen Berries.

Letter to E.K. Univ. Wis. 7-10-16.

Letter from Black River Falls, Wis. concerns a market for wintergreen berries and leaves.

Umney, J.C. 1916.

Methylis Salicylis.

Perf. & Ess. Oil Rec. 1916, 7, p. 344. (Dig. & Com. on U.S.P. & N.F., 1916, p. 225.)

The sp.gr. for natural wintergreen oils is very properly placed lower than that for the synthetic methyl salicylate.

——— 1917.

Methyl Salicylate.

Am. Perf. 12, p. 202. (Dig. & Com. U.S.P., 1917, p. 249.)

Discusses test for differentiation of oil of wintergreen and methyl salicylate.

——— 1917.

Methyl Salicylate.

Am. Perf. 11, p. 323. (Dig. & Com. U.S.P., 1917, p. 249.)

Resuming of the distillation of birch oil in Pennsylvania is due to scarcity of synthetic methyl salicylate.

Allbright, A.R. 1917.

Methyl Salicylate.

Jour. Am. Chem. Soc., 39, p. 820. (Dig. & Com. U.S.P., 1917, p. 249.)

Gives method for detecting phenolic impurities in methyl salicylate.

Hortvet, J. 1917.

Methyl Salicylate.

Rpt. Minn. D. & F. Com. 1917, p. 53. (Dig. & Com. U.S.P., 1917, p. 249.)

Of 6 samples examined 2 were rejected.

Rippetoe, J.R. 1917.

Methyl Salicylate.

Jour. Am. Pharm. Assoc., 6, p. 464. (Dig. & Com. U.S.P., 1917, p. 249.)

Discusses simple test for distinguishing methyl salicylate from the oils of birch and wintergreen.

——— 1918.

Methylis Salicylas.

Ber. d. Deutsch. Pharm. Gesellsch. 28, p. 378. (Dig. & Com. U.S.P., 1918, p. 263.)

"Recommendations for the monograph on methyl salicylate to be included in the new edition of the Ph. Germ. are presented."

Astruc, A. 1918.

Methylis Salicylis.

Jour. Pharm. et. d. Chim. (7 S.V. 17) p. 386. (Dig. & Com. U.S.P., 1918, p. 263.)

"The author's method for the evaluation of aspirin is stated to be equally suitable for the determination of the methyl and ethyl esters of salicylic acid."

Semmler, F.W. 1918.

Methylis Salicylas.

Ber. d. Deutsch. Chem. Gesellsch. 51, p. 417. (Dig. & Com. U.S.P., 1918, p. 263.)

"Betulol is a constituent of birch bud oil and is stated to be a bicycle sesquiterpene alcohol of the formula $C_{15}H_{24}O$."

——— 1919.

Wintergreen.

Nat'l. Geographic Magazine, 35, p. 181.

Gives a colored illustration by Miss Mary E. Eaton, as the artist, of wintergreen plate VI, p. 181.

——— 1919.

Methylis Salicylas.

Pharm. J. Lond. 1919, 103, p. 471. (Dig. & Com. U.S.P., 1919, p. 279.)

Reports a fatal case of poisoning, due to an overdose of oil of wintergreen.

——— 1919.

Methylis Salicylas.

S.R.A. Chem. Suppl. 1919, No. 58, p. 441; No. 60, p. 559. (Dig. & Com. U.S.P., 1919, p. 278.)

States that sample of oil of birch examined by the Bureau of Chemistry were found to consist wholly, or in part, of synthetic methyl salicylate and to differ from the standards of the U.S.P.

Rosenbloom, J. & Johnston, J.M. 1919.

Methylis Salicylas.

J. Am. M. Assoc., 1919, 72, p. 22. (Dig. & Com. U.S.P., 1919, p. 279.)

"A case is recorded in which a female patient, aged 40, recovered after swallowing one ounce of oil of wintergreen in mistake for liquid petrolatum."

White, W.R. 1919.

Methyl Salicylas.

J. Am. Pharm. Assoc. 1919, 8, p. 557. (Dig. & Com. U.S.P., 1919, p. 278.)

States that the natural color of dark methyl salicylate may be restored by the addition of tartaric acid.

——— 1920.

Products of the Wintergreen.

Pharm. Era, 53, p. 9.

Gives products of Gaultheria Procumbens, properties, prices, pharmacopoeial name and uses.

Lutes, H.E. 1920.

Oil of Wintergreen.

Letter to Agric. Dept. Univ. Wis. 2-28-20.

Asks for data on how to extract oil of wintergreen. Sextonville, Wis.

Zatso Chemical Co. 1920.

Oil of Wintergreen.

Letter to E.K. Univ. Wis. 4-7-20.

They write concerning the feasibility of manufacture of oil of wintergreen at Ashland, Wis.

Bjorge, J. 1921.

Wintergreen.

Letter to E.K. Univ. Wis. 7-30-21.

Letter from Millston, Wis. asks if it is possible to utilize wintergreen as a means of making money.

Bumpus, C.S. 1921.

Wintergreen.

Letter to E.K. Univ. Wis. 10-7-21.

States that wintergreen is native around Tomahawk Lake, Wisconsin.

Werbke, N.C. 1888.

Examination of the Oil and Leaves of Wintergreen (Gaultheria procumbens).

Thesis U.W. 1888.

Gives an account of the experiments performed in the examination of the oil.

Lloyd, J.U. 1898.

Oil of Gaultheria.

Pharm. Rev., 16, p. 176.

Lloyd gives an interesting detailed historical account of oil of wintergreen.

1907.

Oleum Betulae.

Am. Cultivator, , p. . (Pharm. Era, 37, p. 125; Dig. & Com. U.S.P. 1907, p. 329.)

Farmers are paid $3.50 per ton for birch brush for the manufacture of "oil of wintergreen", 1,500 tons were used last season, the resulting oil sold for $2.00 per lb. and was used for flavoring and medicines.

GAULTHERIA

AND

OLEUM GAULTHERIAE

IN THE

UNITED STATES PHARMACOPOEIA

1820-1910 INCLUSIVE

Gaultheria

Pharmacopoeias

United States Pharmacopoeial History

Official:-

'10 '20 '30 '30 NY '40 '50 '60 '70 '80 '90 '00

'20

Oleum Gaultheriae
O. Gaultheria

'30

Oleum Gaultheria — Oil of Partridge berry
Ex Gaultheria — From Partridge berry

Put the substance from which the oil is to be extracted, into a retort or other vessel suitable for distillation, and add enough water to cover it; then distill into a large refrigerator. Separate the distilled oil from the water which comes over with it.

'30 NY

Oleum Gaultheriae — Oil of Wintergreen
O. Gaultheria — From Wintergreen

In preparing such oils as are volatile, the substance from which the oil is to be obtained, is introduced into a retort or common still and as much water poured on as will cover it; then distill into a large refrigeratory.

The oil comes over with water, and is afterwards to be separated from it, according as it may be lighter than the water, and swim upon its surface, or heavier, and sink to the bottom.

'40

Oleum Gaultheria — Oil of Partridge berry
From Partridge berry

In the preparation of the distilled oils, put the substance from which the oil is to be extracted into a retort, or other vessel suitable for distillation and add enough water to cover it; then distill into a large refrigeratory. Separate the distilled oil from the water which comes over with it.

'50

Oleum Gaultheriae — Oil of Partridge berry
From Partridge berry

Preparation same as '40

'60

Oleum Gaultheriae — Oil of Gaultheria

Prepare the oil from fresh Gaultheria by the general formula page 242.

The distilled oils when dropped on paper, produce a greasy stain, which entirely disappears on exposure to a moderate heat. When shaken with water in a graduated tube and allowed to separate, they are not diminished in volume. Dry acetate of potassa or solid chloride of calcium is not liquified on being agitated with them.

Most of the distilled oils are prepared by the following general formula:-

Put the substance from which the oil is to be extracted into a retort, or other vessel suitable for distillation and add enough water to cover it; then distill by a regulated heat into a large refrigeratory. Separate the distilled oil from the water which comes over with it.

'70

Oleum Gaultheriae — Oil of Gaultheria

Prepare this oil from fresh Gaultheria by the general formula page 233.

Preparation same as '60.

'80

Oleum Gaultheriae — Oil of Gaultheria
(Oil of Wintergreen)

A volatile oil distilled from Gaultheria.

A colorless, yellow or reddish liquid, of a peculiar strong and aromatic odor, a sweetish, warm, and aromatic taste, and a slightly acid reaction. Sp.gr. about 1.180. It is readily soluble in alcohol.

When heated to about 80°C. (176°F.) the oil should not yield a colorless distillate having the characteristics

of chloroform or of alcohol. On mixing 5 drops of the oil with 5 drops of nitric acid, the mixture should not acquire a deep red color, and should not solidify to a dark red, resinous mass (abs. of oil of sassafras).

Preparation: Spiritus Gaultheriae.

'90

Oleum Gaultheriae — Oil of Gaultheria (Oil of Wintergreen)

A volatile oil distilled from the leaves of Gaultheria procumbens Linne (Wintergreen: not ord. Ericaceae) consisting almost entirely of methyl salicylate ($CH_3 C_7 H_5 O_3$ = 151.64) and nearly identical with Volatile Oil of Betula.

It should be kept in well-stoppered bottles protected from light.

A colorless or yellow, or occasionally reddish liquid, having a characteristic, strongly aromatic odor, and a sweetish, warm, and aromatic taste.

Specific gravity: 1.175 to 1.185 at 15°C. (59°F.)
Boiling Point: 218°-221°C. (424.4°F. to 429.8°F.)

It deviates polarized light slightly to the left. In other respects it has the same properties and conforms to the same reactions and tests as methyl salicylate.

Preparation: Spiritus Gaultheriae

'00

Oleum Gaultheriae — Oil of Gaultheria

A volatile oil distilled from the leaves of Gaultheria procumbens Linne (Fam. Ericaceae) rectified, if necessary, by steam distillation. It should be kept in well-stoppered amber-colored bottles, in a cool place, protected from light.

A colorless or almost colorless liquid, having a characteristic, strongly aromatic odor, and a sweetish, warm, and aromatic taste.

Specific Gravity: 1.172 to 1.180 at 25°C. (77°F.)
Boiling Point: 218° to 221°C. (424.4° to 429.8°F.)

It is slightly laevogyrate, up to -1° in a 100 mm. tube at 25°C. (77°F.)

In other respects it has the same properties, and conforms to the reactions and tests given under methylis salicylas.

Average dose - 1 cc. (15 minims).

'10

Methylis Salicylas
Methyl. Salicyl.
Oil of Wintergreen
Oil of Sweet Birch

Menthyl Salicylate
Oleum Gaultheriae U.S.P.VIII
Oleum Betulae, U.S.P. VIII
Oil of Teaberry

It contains not less than 98 per cent of $CH_3 C_7 H_5 O_3$ (152.06). It is produced synthetically or is obtained by distillation from Gaultheria procumbens Linne (Fam. Ericaceae) or from Betula lenta Linne (Fam. Betulaceae). The label must indicate whether the methyl salicylate has been made synthetically or distilled from either of the above mentioned plants. Preserve it in well-stoppered amber-colored bottles, in a cool place, protected from light.

It is a colorless, yellowish or reddish liquid, having the characteristic odor and taste of Gaultheria.

It is sparingly soluble in water, miscible with alcohol and glacial acetic acid. It is soluble in 6 volumes of 70 per cent alcohol at 25°C. with not more than a slight cloudiness.

The alcoholic solution is neutral or slightly acid to moistened litmus paper. Sp. gr. at 25°C.; synthetic, 1.180 to 1.185; where from sweet birch or Gaultheria, 1.172 to 1.182. It fails between 218° and 221°C.

Synthetic methyl salicylate, or that from sweet birch, is optically inactive; when obtained from Gaultheria, it is slightly laevorotatory, not exceeding -1.5° in a 100 mm. tube at 25°C. A deep violet color is produced by shaking a drop of methyl salicylate with about 5 mils of distilled water and adding a drop of ferric chloride T.S.

Add 10 mils of KOH T.S. to 1 mil of methyl salicylate, contained in a capacious test tube, and agitate the mixture. A clear or slightly cloudy, colorless or faintly yellowish solution results without the separation of any oily drops either on the surface or at the bottom of the liquid (other volatile oils or petroleum products).

It does not respond to the test for heavy metals in volatile oils.

Assay - Introduce about 2 mils of methyl salicylate into a tared flask, note the exact weight, add 50 mils of half-normal alcoholic KOH V.S., connect the flask with a reflux condenser and heat the mixture on a water bath during two hours. Then add a few drops of phenolphthalein T.S. and titrate the excess of alkali with half normal hydrochloric acid V.S. It shows not less than 98% of $CH_3 C_7 H_5 O_3$.

Each mil of half-normal alcoholic KOH V.S. consumed corresponds to 0.07603 Gm. of $CH_3 C_7 H_5 O_3$. Each gramme of methyl salicylate corresponds to not less than 12.9 mils of half-normal alcoholic KOH V.S.

Average dose Metric 0.75 mil.
Apothecaries, 12 minims.

Approved by W.O. Richtmann

Asst. Prof. of Pharmacognosy