BIBLIOGRAPHY

OF

SWEET AND BITTER ORANGE PEELS

AND

THEIR OFFICIAL PRODUCTS

BY

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Camerarius, I. 1586

Aurantia mala.

Epitome Matthiolae, p. 150. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Bauhinus, C. 1671

Malus Aurantii major.

Pinax et Prodronner, 2 ed., p. 436. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427; Linne's, Mat. Med., 2 ed., p. 177.)

Gives a list of botanical synonyms of the orange.

Linné, C. 1737

Citrus petioles alatis, folius acuminatis.

Hortus Cliffortianus, p. 379. (Willdenow, Linne's Species Plantarum, 4 ed., v. 3, p. 1427; Linne's, Mat. Med., 2 ed., p. 177.)

The original was not available.

Royen, A. 1740

Citrus petiolis alatis, foliis acuminatis.

Flora Leydensis, p. 266. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Linné, C. 1747

Citrus petiolis alatis, folius acuminatis.

Flora Zeylanica, p. 304. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Linné, C. 1748

Citrus petiolis alatis, foliis acuminatis.

Hortus Upfalienfis, p. 236. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427; Linne's, Mat. Med., 2 ed., p. 177.)

The original was not available.

Blackwell, E. 1750-1772

Aurantium.

Herbarium Blackwellianum emendatum et auctum cum praefat. D. Chr. J. Trew. Cent., IV, t. 349. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Kniphof, A. 1764

Aurantium.

Botanicon in originali, Cent. 9, (v. 2), n. 23. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Miller, P. 1769-1776

Aurantium.

Allgemeines Gartnerlexicon, aus dem Englischen, (Vol I-IV, p.--). (Willdenow, Linne's,Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Knorr, G. W. 1772

Aurantium.

The saurus rei herbariae hortensisque universalis., Part 1, t. P. 4. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Linné, C. 1772

Citrus petiolis alatis, foliis acuminatis.

Materia Medica, 2 ed., p. 177. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

Gives a list of botanical synonyms of the orange.

Thunberg, C. P. 1784

Citrus petiolis alatis, foliis acuminatis, caule arboreo.

Flora japonica, p. 293. (Willdenow, Linne's, Species Plantarum, 4 ed., v. 3, p. 1427.)

The original was not available.

Willdenow, C. L. 1797

Citrus Aurantium.

Linne's, Species Plantarum, 4 ed., v. 3, p. 1427. (Dispensat. U.S.A., 2 ed., p. 122; ibid., 3 ed., p. 122; ibid., 4 ed., p. 124; ibid., 5 ed., p. 131; ibid., 6 ed., p. 131; ibid., 7ed., p. 131; ibid., 8 ed., p. 131; ibid., 9 ed., p. 129; ibid., 10 ed., p. 129; ibid., 11 ed., p. 135; ibid., 12 ed., p. 149; ibid., 13 ed., p. 157; ibid., 14 ed., p. 159; ibid., 15 ed., p. 269; ibid, 16 ed., p. 274; ibid., 17 ed., p. 246; ibid., 18 ed., p. 250; ibid., 19 ed., p. 217.)

Gives 5 pre-Linneal scientific names with reference for each and habitat of the plant.

Coxe, J. R. 1806

Citrus.

Am. Dispensat., 1 ed., p. 269; ibid., 4 ed., p. 180; ibid., 6 ed., p 198; ibid., 7 ed., p. 203; ibid., 8 ed., p. 210; ibid., 9 ed., p. 231.

Gives parts used, synonyms in 10 languages, properties of parts used, and medicinal uses of the preparations made from the orange.

Thacker, J. 1810

Citrus Aurantium. Seville Orange. The juice of the fruit and its external rind.

N. Dispensat., 1 ed., p. 106; ibid., 2 ed., p. 189; ibid., 4 ed., p. 184.

Gives some physical and chemical properties, medicinal uses and dose of the juice and rind of the orange. Both juice and rind are extracted by water. By distillation a small quantity of essential oil is obtained.

Woodville, W. 1810

Citrus Aurantium.

Med. Bot., 2 ed., v. 4, p. 523, t. 188. (Dispensat U.S.A., 2 ed., p. 121; ibid., 3 ed., p. 122; ibid., 4 ed., p. 124; ibid., 5 ed., p. 131; ibid., 6 ed., p. 131; ibid., 7 ed., p. 131; ibid., 8 ed., p. 131; ibid., 9 ed., p. 129; ibid., 10 ed., p. 129; ibid., 11 ed., p. 135; ibid., 12 ed., p. 149; ibid., 13 ed., p. 157; ibid., 14 ed., p. 159; The Nat. Dispensat., (1 ed.), p. 259; ibid., 2 ed., p. 261; ibid., 3 ed., p. 290; ibid., 5 ed., p. 312; The Eclectic and General Dispensatory, (1 ed.), p. 147.)

Gives a detailed history of the plant including its introduction into Europe and America, cultivation, parts of plant used and their physical properties; also, the special properties, medical properties, and official preparations in which orange peel is used.

Ewell, J. 1817

Orange Tree.

Citrus Aurantium.

The Medical Companion, (1 ed.), p. 569; ibid., 7 ed., p. 702.

Gives brief account of cultivation, action, uses, and a recipe for making orange wine.

Risso, J. A. & Poiteau, A. 1818

Citrus Aurantium, Risso & Cit. dulcis, Lk.

Hist. nat. des orang. plates 3 & 39. (The Nat. Dispensat., (1 ed.), p. 259; ibid., 2 ed., p. 261; ibid., 3 ed., p. 290; ibid., 5 ed., p. 312.)

The original was not available.

Risso, J. A. & Poiteau, A. 1818

(Citrus Vulgaris, Risso (Citrus Bigardia, Duhamel).)

Hist. nat. des orang., plate 30. (Dispensat. U.S.A., 17 ed., p. 205.)

(Contains an illustration of the bitter orange tree, Citrus vulgaris, Risso (Citrus Bigardia, Duhamel).)

Bigelow, J. 1822

Aurantii Cortex.
Orange Peel.

Mater. Med., 1 ed., p. 91.

Gives habitat of the plant, properties and uses of the orange peel.

An American Physician. 1827

Aqua Citri Aurantii, Edin. Water of Orange Peel.

The Eclectic Dispensatory, (1 ed.), p. 394.

Gives synonyms in French, German, and Italian, and the method by which it is prepared.

An American Physician. 1827

Citrus Aurantium. The Orange Tree.

The Eclectic and General Dispensatory, (1 ed.), p. 147.

Gives official parts of C. Aurantium, synonyms, qualities, medical properties and uses with a reference.

----------, -----. -----. 1829

(Oil of Neroli.)

Am. Journ. Pharm., 1, p. 133.

(Gives the yield of the Oil of Neroli.)

Martius, M. T. & Guibourt, N. J. B. G. 1832

Sur la pesanteur spécifique des huiles volatiles.

Journ. de Pharm., et de Chimie, s. 1, v. 8, p. 345. (Am. Journ. Pharm., 5, p. 60.)

Gives a table on nature of volatile oil, as to specific gravity, effect on litmus, and observations.

Oil of Orange Peel, prepared for one year, has a specific gravity of 0.845 and has no effect on blue litmus paper.

Wood, G. B. & Bache, F. 1834

Aqua Aurantii Corticis, U.S.

Dispensat. U.S.A., 2 ed., p. 786; ibid., 3 ed., p. 768; ibid., 4 ed., p. 810.

Gives synonym, official English title and method of preparation of Orange Peel Water.

Wood, G. B. & Bache, F. 1834

Aurantii Cortex. U.S.
Orange Peel.

Dispensat. U.S.A., 2 ed., p. 121; ibid., 3 ed, p. 122; ibid 4 ed., p. 124; ibid, 5 ed., p. 131; ibid., 6 ed., p. 131; ibid., 7 ed., p. 131; ibid., 8 ed., 131; ibid., 9 ed., p. 129; ibid., 10 ed., p. 129; ibid., 11 ed., p. 135.

Gives the part official, botanical characteristics, description, properties, medical properties and uses, and Official preparations of orange peel.

Wood, G. B. & Bache, F. 1834

Citrus Aurantium.

Dispensat. U.S.A., 2 ed., p. 121; ibid., 3 ed., p. 122; ibid., 4 ed., p. 124; ibid., 5 ed., p. 131; ibid., 6 ed., p. 131; ibid., 7 ed., p. 131; ibid., 8 ed., 131; ibid., 9 ed., p. 129; ibid., 10 ed., p. 129; ibid., 11 ed., p. 135; ibid., 12 ed., p. 149; ibid., 13 ed., p. 157; ibid., 14 ed., p. 159; ibid., 15 ed., p. 268; ibid., 16 ed., p. 274; ibid., 17 ed., p. 246; ibid., 18 ed., p. 250; ibid., 19 ed., p. 217; ibid., 20 ed., p. 210; ibid., 21 ed., p. 206; ibid., 22 ed., p. 206.

Gives the general sexual characteristics, cultivation, habitat, and general description of the orange tree.

Souberian, E. 1836

(On the Preparation of Distilled Waters.)

Bulletin General de Therapeutique, ------, p. -----. (Am. Journ. Pharm., 8, p. 219.)

(The oil of orange flowers distilled with steam is better than that made by moistening the flowers and distilling in the usual way.)

Hare, C. 1838

Camphoriferous Essential Oils, Etc.

Am. Journ. Pharm., 10, p. 23.

The resin produced by the action of sulfuric acid on the oil of neroli is greenish-brown.

Jourdan, A. J. L. 1838

Eau de fleurs d' Oranger.

Pharmacopee Universelle, 3 ed., v. 1, p. 610. (King's Am. Dispensat., 18 ed., 3 rev., v. 1, p. 244.)

Gives the French method of preparation of the orange flower water.

Wood, G. B. & Bache, F. 1843

Aqua Florum Aurantii. Lond.

Dispensat. U.S.A., 5 ed., p. 863; ibid., 6 ed., p. 863; ibid., 7 ed., p. 863; ibid., 8 ed., p. 863.

Gives synonym, english title and the method of preparation from orange flowers.

Wood, G. B. & Bache, F. 1851

Aurantii Flores Aqua. Lond. Aurantii Aqua. Ed.

Dispensat. U.S.A., 9 ed., p. 131-132; ibid., 10 ed., p. 131; ibid., 11 ed., p. 137.

Tells of the uses, method of preparation, and facts about the oil obtained from the flowers by distillation.

King, J. & Newton, R. S. 1852

Aqua Florum Aurantii. Orange Flower Water.

Eclectic Dispensat. U.S.A., 1 ed., p. 465.

Gives the method by which orange flower water is prepared.

King, J. & Newton, R. S. 1852

Citrus Aurantium.
Orange.

Eclectic Dispensat. U.S.A., 1 ed., p. 127.

Gives the natural order, classification according to the parts official, properties and uses, and the official preparations of the orange.

Leguay, M. 1852

(Observations on the Different Orange Flower Waters found in Commerce.)

Bulletin de la Société Pharmaceutique d'Indre et Loire, ---, p. ---. (Annals of Pharmacy, April, 1852, p. ----; Am. Journ. Pharm. 25, p. 83.)

(Discusses methods of distinguishing between the different Orange Flower Waters (from flower, oil, leaf by H_2SO_4) found in commerce.)

Dannecy, M. 1853

Note sur la rectification de l'essence de neroli.

Journ. de Pharm. et de Chimie, s, 3, v. 24, p. 204. (Am. Journ. Pharm., 26, p. 65.)

Oil of Neroli that has changed color and has a disagreeable odor can be rectified by distillation.

Imbert-Gourbeyre, A. 1854

Zur pharmakologischen Kenntniss der bitteren Pomeranzen.

Chem.--Pharm. Cent. Blatt., 25, p. 128. (Dispensat. U.S.A., 11 ed., p. 138; ibid., 12 ed., p. 151; ibid., 13 ed., p. 159; ibid., 14 ed., p. 162; ibid., 15 ed., p. 271; ibid., 16 ed., p. 276; ibid., 17 ed., p. 248; ibid., 18 ed., p. 252; ibid., 19 ed., p. 219; ibid., 20 ed., p. 212.)

Those who are much exposed to the inhalation of the oil of bitter oranges are apt to be affected with cutaneous eruptions, and various nervous disorders, as headache, tinnitus aurium, oppression of the chest, gastralgia, want of sleep, and even muscular spasms. He thinks the oils of the aurantiaceae have much resemblance to camphor in its effects.

Piesse, S. Ca. 1854

(Neroli or Orange Flower Oil.)

Annals of Pharmacy, ---, p. ---. (Am. Journ. Pharm., 26, p. 462.)

(Describes the distillation of the flowers to collect the oil of orange flowers and its use in perfumery.)

Piesse, S. Ca. 1854

(Oil of Orange Peel.)

Annals of Pharmacy, ---, p. ---. (Am. Journ. Pharm., 26, p. 463.)

(Tells how the Oil of Orange-Peel is made, its use, and gives formulas of 2 perfumes in which it is used.)

De Luca, M. S. 1857

Recherches chimiques sur l'essence de mandarine.

Comptes Rendus, 45, p. 904. (Journ. de Pharm. et die Chimie, s. 3, v. 33, p. 52; Dispensat. U.S.A., 19 ed., p. 217; ibid., 20 ed., p. 210; Am. Journ. Pharm., 30, p. 136; Proc. Am. Pharm. Assoc., 7, p. 54.)

Tells of a variety of the orange, called the Mandarin Orange (Citrus Bigardia sinenis or C. Bigardia myrtifolia), which is probably a native of China, but cultivated in Sicily, the south of Italy, and Florida. A volatile oil is obtained from the rind by expression, and is of yellow color. When freed from coloring matter by distillation, it was found to be a pure hydrocarbon, with the formula $C_{10}H_{26}$. This constituent is now recognized as d-limonene.

Réveil, O. 1857

Empoisonnement Par L'if.

Journ. de Pharm. et de Chimie, s. 4, v. 3, p. 249. (Dispensat. U.S.A., 13 ed., p. 1039; ibid., 14 ed., p. 1079; ibid., 15 ed., p. 232; ibid., 16 ed., p. 236; ibid., 17 ed., p. 206; ibid., 18 ed., p. 208; ibid., 19 ed., p. 174; ibid., 20 ed., p. 172; ibid; 21 ed., p. 167.)

A distilled water of the leaves from the bitter orange tree is prepared; and sometimes a mixture of the leaves and flowers is employed. But this is a fraud, as the distilled water of the leaves never has the sweet perfume of that of the flowers.

Martin, S. M. 1858

(Practical Observations on the Preservation and Distillation of Roses and Orange-Flowers.)

Bulletin General de Therapeutique, ---, p. ---. (Dublin Hosp. Gaz., ---, p. ---; Pharm. Journ., 18, p. 429; Am. Journ. Pharm., 31, p. 258; Proc. Am. Pharm. Assoc., 8, p. 82.)

(Tells how orange flowers are preserved with salt and best distilled.)

Frederking, M. 1859

Ueber eine Beobachtung der Entfärbung des schwefelsauren Indigs mittelst Terpentinöls.

Archiv. d. Pharm., 149, p. 289. (Am. Journ. Pharm., 32, p. 46.)

States that Oil of Orange-Peel decolorizes indigo solution.

Gmelin, L. 1860

Oil of Neroli.

Handbook of Chemistry, Engl. Transl., v. 14, p. 386. (Am. Journ. Pharm., 50, p. 582; Pharm. Journ., 38, p. 236; Yrbk. Brit. Pharm. Conf., 15, p. 584.)

Discusses the action of nitric acid on Oil of Neroli and Orange Flower Water.

Buignet, H. 1861

Pouvoirs rotatoires.

Journ. de Pharm., et de Chemie, s. 3, v. 40, p. 252. (Am. Journ. Pharm., 34, p. 140.)

States that Essential Oil of Orange has a right handed, or dextrogyrate, rotation of 105.20 degrees.

---------, ---. ---. 1861

(Medicinal Use of Dried Orange Flowers.)

Annuaire de Therapeutique, v. --, p. 59. (Dispensat. U.S.A., 12 ed., p. 150; ibid., 13 ed., p. 158; ibid., 14 ed., p. 161; ibid., 15 ed., p. 269; ibid., 16 ed., p. 275.)

(The dried orange flowers are used on the continent of Europe, as a gentle nervous stimulant, in the form of infusion, which may be made in the proportion of 2 drachms of peel to the pint of boiling water, and taken in the dose of a teacupful. The flowers should be dried in the shade at a temperature between 75° and 95° F.)

Chautard, M. J. 1863

Nouvelles études sur le camphre gauche de matricaire et sur les huiles essentielles, au point de vue de la production du camphre.

Journ. de Pharm. et de Chimie, s. 3, v. 44, p. 28. (Dispensat. U.S.A., 12 ed., p. 150; ibid., 13 ed., p. 158; ibid., 14 ed., p. 161; ibid., 15 ed., p. 269; ibid., 16 ed., p. 274; ibid., 17 ed., p. 246; ibid., 18 ed., p. 250; ibid., 19 ed., p. 218; ibid., 20 ed., p. 210.)

Gives the optical rotation of pure oil of neroli, of essence de petit grain which is distilled from orange leaves and of the oils of the rinds of unripe and ripe fruit of the orange tree.

King, J. & Lloyd, J. U. 1864

Aqua Florum Aurantii.
Orange Flower Water.

Am Dispensat., 6 ed., p. 1056; ibid., 8 ed., p. 936; ibid., 10 ed., p. 936; ibid., 15 ed., p. 936; ibid., 16 ed., 936.

Gives directions for the preparation of orange flower water.

King, J. & Lloyd, J. U. 1864

Citrus Aurantium. (Pomeranzenbaum.)
Orange.

Am. Dispensat., 6 ed., p. 312; ibid., 8 ed., p. 262; ibid., 10 ed., p. 262; ibid., 15 ed., p. 262; ibid., 16 ed., p. 262.

Gives natural order, classification according to the description, history, properties, and uses, and the official preparations of the rind of Citrus Aurantium.

(Committee) 1865

Aqua Aurantii.

Pharmacopoea Helvetica, 1 ed., p. 29. (Am. Journ. Pharm., 39, p. 531.)

Under the name of Aqua Aurantii the commercial triple orange flower water is used, and a rectification directed in case this should be contaminated with metal.

De Vrij, J. E. 1865

(On the Possibility of Manufacturing Neroli in the British Colonies.)

London Chemical News, ---, p. ---. (Am. Journ. Pharm., 38, p. 476.)

(Proved that the oil obtained from the petals of shaddock trees (Citrus decumana) which grew in abundance in the British Colonies was identical with the essence of orange flowers called neroli and, also, that the still contained hesperidine, the same as that found in orange peels, after steam distillation.)

Wood, G. B. & Bache, F. 1865

Aqua Aurantii Florum. U.S. Aurantii Aqua. Br. Orange Flower Water.

Dispensat. U.S.A., 12 ed., p. 1000; ibid., 13 ed., p. 1039; ibid., 14 ed., p. 1039; ibid., 15 ed., p. 232; ibid., 16 ed., p. 236; ibid., 17 ed., p. 205; ibid., 18 ed., p. 208; ibid., 19 ed., p. 174; ibid., 20 ed., p. 171; ibid., 21 ed., p. 167; ibid., 22 ed., p. 171.

Gives instructions for preparation, the cautions to be used in shipping fresh orange flowers, and the method of preservation of orange flower water. Also, gives official preparations and synonyms in 4 different languages.

Wood, G. B. & Bache, F. 1865

Aurantii Amari Cortex U.S. (Br.) Bitter Orange Peel.

Dispensat. U.S.A., 12 ed., p. 148; ibid., 13 ed., p. 157; ibid., 14 ed., p. 159; ibid., 15 ed., p. 268; ibid., 16 ed., p. 273; ibid., 17 ed., p. 245; ibid., 18 ed., p. 249; ibid., 19 ed., p. 216; ibid., 20 ed., p. 209; ibid., 21 ed., p. 205; ibid., 22 ed., p. 206.

Gives the part official and synonyms. The 19 ed. adds 14 more synonyms in 5 different languages.

Wood, G. B. & Bache, F. 1865

Aurantii Dulcis Cortex. U.S.
Sweet Orange Peel.

Dispensat. U.S.A., 12 ed., p. 148; ibid., 13 ed., p. 157; ibid., 14 ed., p. 159; ibid., 15 ed., p. 268; ibid., 16 ed., p. 273; ibid., 17 ed., p. 245; ibid., 18 ed., p. 249; ibid., 19 ed., p. 217; ibid., 20 ed., p. 209; ibid., 21 ed., p. 205; ibid., 22 ed., p. 208.

Gives the part official in the U.S.P. The 21st ed. of the U.S. Dispensatory also gives description, physical properties, constituents, and uses of Bitter Orange Peel.

Wood, G. B. & Bache, F. 1865

Aurantii Flores, U.S.
Orange Flowers.

Dispensat. U.S.A., 12 ed., p. 149; ibid., 13 ed., p. 157; ibid., 14 ed., p. 160; ibid., 15 ed., p. 268; ibid., 16 ed., p. 273.

Gives part used and synonyms in 4 languages.

Gobley, ---. 1866

Sur les eaux distillées de fleurs et de feuilles d' oranger.

Journ. de Pharm., et de Chimie, s. 4, v. 3, p. 249. (Am. Journ. Pharm., 38, p. 301; Pharm. Journ., 26, p. 78; Proc. Am. Pharm. Assoc., 14, p. 148; Yrbk. Brit. Pharm. Conf., 8, p. 350.)

Gives a method of distinguishing the distilled orange flower water from that made from oil of neroli, by means of nitric or sulfuric acid.

Procter, W. 1868

Notes of Travel in Europe.

Am. Journ. Pharm., 40, p. 27. (Dispensat. U.S.A., 13 ed., p. 159; ibid., 14 ed., p. 161; ibid., 15 ed., p. 1001; ibid., 16 ed., p. 1038; ibid., 17 ed., p. 926; ibid., 18 ed., p. 924; ibid., 19 ed., p. 835; ibid., 20 ed., p. 752.)

While in Italy, he was informed that the oils of oranges and lemons were prepared in Calabria and Sicily in three ways: 1. by scraping off the exterior part of the rind and submitting it to expression; 2. by putting the scrapings into hot water, depressing the pulp beneath, and skimming off the oil as it rises; 3. by distillation. He also states, on the authority of Mr. John A. Dix, of New York, that the best Sicily orange oil is procured by dexterous compression, within a cask, of the fresh rind by the hand, the oil being forced out in jets.

Brown, J. F. 1871

Orange Flower Water.

Pharm. Journ., 30, p. 1042.

Gives a method to remove turbidity and unpleasant odor caused by flocculent vegetable matter in the Orange Flower Water.

Fruh, C. 1871

On Preservation of the Oils of Orange and Lemon.

Am. Journ. Pharm., 43, p. 201. (Yrbk. Brit. Pharm. Conf., 8, p. 43.)

In a letter to the editor, gives a method of preservation for orange oils.

Wright, C. R. A. & Piesse, C. H. 1871

The Oxidation Products of Essential Oil of Orange Peel (Eau De Portugal).

Yrbk. Brit. Pharm., Conf., 8, p. 546; Chemical News, 24, p. 147. (Dispensat. U.S.A., 16 ed., p. 1039; ibid., 17 ed., p. 926; ibid., 18 ed., p. 924.)

The oil of orange peel yields on distillation, besides a resinous product of the composition $C_{20}H_{30}O_3$, a hydrocarbon, hesperidene, $C_{10}H_{16}$, boiling at 178°C. (352.4°F.).

Marais, ---. 1872

(Eau de fleur d' orange.)

Journ. de Pharm., et de Chimie, s. 4, v. 16, p. 132. (Am. Journ. Pharm., 44, p. 424 & 473; Am. Journ. Pharm., 45, p. 41.)

Comments on the statements of Vualflart relative to orange flower water. States that orange flower water distilled with steam presents many advantages over that distilled over the open fire, and that its conservation is as easy and as certain.

Schramm, H. 1872

(Aldulteration of Oil of Neroli.)

Dingl. Pol. Journ., 201, p. 375. (Pharm. Journ., 31, p. 878.)

(Gives a method of detecting copaiba oil in oil of Neroli.)

Vuaflart, M. 1872

Observations sur l'eau de fleur d'oranger distillée à la vapeur.

Journ. de Pharm., et de Chimie, s. 4, v. 16, p. 49. (Am. Journ. Pharm., 44, p. 424; Yrbk. Brit. Pharm. Conf., 13, p. 314.)

Orange flower water distilled by steam, which though at first is very pleasant, loses its odor soon after being opened.

Malenfant, L. 1873

(Distilled orange flower water.)

L'Union Pharm., ---, p. -----. (Am. Journ. Pharm., 45, p. 267; Dispensat. U.S.A., 15 ed., p. 232; ibid., 16 ed., p. 236; ibid., 17 ed., p. 206; ibid., 18 ed., p. 208; ibid., 19 ed., p. 174; ibid., 20 ed., p. 172; ibid., 21 ed., p. 167; Journ. de Pharm. et de Chimie, s. 3, 17, p. 379; Yrbk. Brit. Pharm. Conf., 10, p. 261.)

(Distilled orange flowers with water to develop an orange water that would keep better in the light than those prepared by other methods.)

Wright, C. R. A. 1873

On the Essential Oil of Orange (Portugal).

Pharm. Journ., 33, p. 311; Yrbk. Brit. Pharm. Conf., 10, p. 518. (Am. Journ. Pharm., 45, p. 545; Proc. Am. Pharm. Assoc., 22, p. 215.)

Discusses the constituents of the oil of orange with much additional data on hesperidin.

Hanbury, D. & Flückiger, F. A. 1874

Orange Flower Water.

Pharmacographia, 1 ed., p. 114; ibid., 2 ed., p. 127. (Am. Journ. Pharm. 50, p. 582; Pharm. Journ., 38, p. 236.)

Orange flower water acidulated with nitric acid acquires a pinkish hue more or less intense which disappears on saturation with an alkali.

Stabler, R. H. 1874

An Essay on the Active Constituents of Bitter Orange Peel, with special reference to the Bitter Principle.

Proc. Am. Pharm. Assoc., 22, p. 391; ibid., 22, p. 507.

Discusses several chemical reactions of the active constituents of bitter orange peel.

Hilger, A. 1876

Ueber Hesperidin.

Ber. d. D. Chem. Gesel., 9, pp. 9, 26 & 685. (Dispensat. U.S.A., 16 ed., pp. 276 & 1039; ibid., 17 ed., pp. 247 & 926; ibid., 18 ed., pp. 251 & 924; ibid., 19 ed., pp. 218 & 835; ibid., 20 ed., pp. 211 & 752.)

The bitter principle, hesperidin, $C_{22}H_{26}O_{12}$, was discovered by Lebreton in 1828, but its character as a glucoside was established by Hilger and Hoffman, Ed. It is best prepared from unripe bitter oranges. Its formula is $C_{22}H_{26}O_{12}$, and upon hydrolysis with H_2SO_4, it yields hesperitin, $C_{16}H_{14}O_6$ and glucose, $C_6H_{12}O_6$.

Paterno, E. & Briosi, G. 1876

Ueber Hesperidin.

Ber. d. D. Chem. Gesel., 9, p. 250. (Dispensat. U.S.A., 15 ed., p. 270; ibid., 16 ed., p. 276; ibid., 17 ed., p. 247; ibid., 18 ed., p. 251; ibid., 19 ed., p. 219; ibid., 20 ed., p. 212; ibid., 21 ed., p. 207.)

The bitter principle of the orange, hesperidin, was discovered by Lebreton in 1828. It is crystalline, and may be prepared.

Brady, H. B. 1878

The Medicinal Properties of Orange Flower Water.

Pharm. Journ., 38, p. 298.

Discusses the medicinal properties of Orange Flower Water.

Reynolds, R. & Bothamley, C. H. 1878

A Reaction of Orange Flower Water.

Pharm. Jour., 38, p. 248; Yrbk. Brit. Pharm. Conf., 15, p. 583. (Dispensat. U.S.A., 15 ed., p. 233; ibid., 16 ed., p. 237; ibid., 17 ed., p. 206; ibid., 18 ed., p. 209; ibid., 19 ed., p. 175; ibid., 20 ed., p. 172; Am. Journ. Pharm., 50, p. 582; Proc. Am. Pharm. Assoc., 27, p. 64.)

Nitric, sulphuric, or hydrochloric acid produce a red coloration with orange flower water: particularly if the water be shaken with ether to take up the oil and the acid added to the ethereal solution.

Landerer, X. 1879

Contributions from the Orient.
On Orange Flower Water.

New Rem., 8, p. 135. (Proc. Am. Pharm. Assoc., 27, p. 63.)

Discusses the trade and uses of orange flower water in Greece.

Rush, W. B. 1879

Orange Flowers and Oranges from the Southern States.

Pharm. Journ., 38, p. 915.

Several experiments were made on the production of orange flower, and the uses of orange flower water in the United States.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1879

Aqua Aurantii Florum, U.S.--Orange Flower Water.

The Nat. Dispensat., (1 ed.), p. 210; ibid., 2 ed., p. 213; ibid., 3 ed., p. 239; ibid., 5 ed., p. 254.

Gives synonyms in 3 languages, preparation, pharmaceutical uses, and medical action and uses of Orange Flower Water.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1879

Aurantii Amari Cortex, U.S.--Bitter Orange Peel.

The Nat. Dispensat., (1 ed.), p. 257; ibid., 2 ed., p. 258; ibid., 3 ed., p. 288.

Gives synonyms in 4 languages, pharmacopoeial definition and description of bitter orange peel.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1879

Aurantii Dulcis Cortex, U.S.--Sweet Orange Peel.

The Nat. Dispensat., (1 ed.), p. 259; ibid., 2 ed., p. 261; ibid., 3 ed., p. 289; ibid., 5 ed., p. 312.

Gives synonyms in 3 languages, pharmacopoeial definition, botanical origin, description, composition, and official preparations of Sweet Orange Peel.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1879

Aurantii Flores, U.S.--Orange Flowers.

The Nat. Dispensat., (1 ed.), p. 259; ibid., 2 ed., p. 261; ibid., 3 ed., p. 290; ibid., 5 ed., p. 313.

Gives synonyms in french and german, pharmacopoeial definition, botanical origin, description, constituents, pharmaceutical uses, and medical action and uses, of Orange Flowers.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1879

Aurantii Fructus, Br. Add.--Bitter Orange.

The Nat. Dispensat. (1 ed.), p. 257; ibid., 2 ed., p. 259; ibid., 3 ed., p. 288.

Gives synonyms in 3 languages, pharmacopoeial definition, botanical origin, description of the fruit, peel, and leaves, their constituents, physiological action and uses.

Bentley, R. & Trimen, H. 1880

Citrus Aurantium, Risso.

Med. Plants, v. 1, plate 51. (Dispensat. U.S.A., 15 ed., p. 269; ibid., 16 ed., p. 274; ibid., 17 ed., pp. 205 & 246; ibid., 18 ed., p. 250; ibid., 19 ed., p. 217; King's Am. Dispensat., 18 ed., v. 1, p. 310; The Nat. Dispensat., (1 ed,), p. 259; ibid., 2 ed., p. 261; ibid., 3 ed., p. 290; ibid., 5 ed., p. 312.)

Gives colored picture of the Sweet Orange Tree, Citrus Aurantium, Risso with a detailed description of the plant and its uses.

Bentley, R. & Trimen, H. 1880

Citrus vulgaris, Risso.

Med. Plants, v. 1, plate 50. (King's Am. Dispensat., 18 ed, v. 1, p. 309; The Nat. Dispensat., 2 ed., p. 259; ibid., 3 ed., p. 288; ibid., 5 ed., p. 310; The British Pharmacopoeia, 4 ed., p. 49.)

Gives a color plate of the Bitter Orange tree, Citrus vulgaris, Risso with a detailed description of the plant and its uses.

(Committee) 1882

Aqua Florum Aurantii.

Pharmacopoeia Germanica, 2 ed., p. 32. (Am. Journ. Pharm., 55, p. 307.)

Give no formula but a description as follows: Clear or slightly opalescent, colorless, of the agreeable odor of orange flowers; preserve it in a dark place.

Wilder, H. M. 1883

Artificial Distilled Waters. Orange Flower Water.

Drugg. Circ., 26., 26, p. 171. (Yrbk. Brit. Pharm. Conf., 20, p. 307.)

Gives a formula for an artificial orange flower water.

Wood, G. B. & Bache, F. 1883

Oleum Aurantii Corticis. U.S. Oil of Orange Peel.

Dispensat. U.S.A., 15 ed., p. 1001; ibid., 16 ed., p. 1038; ibid., 17 ed., p. 925; ibid., 18 ed., p. 924; ibid., 19 ed., p. 834.

Gives definition, 3 methods of preparation, and the properties of Oil of Orange Peel, synonyms in 3 languages and official preparations.

Wood, G. B. & Bache, F. 1883

Oleum Aurantii Florum. U.S.

Dispensat. U.S.A., 15 ed., p. 1002; ibid., 16 ed., p. 1039; ibid., 17 ed., p. 926; ibid., 18 ed., p. 925; ibid., 21 ed., p. 745; ibid., 22 ed., p. 732.

Gives definition, synonyms in 3 languages, reasons for its employment, properties and official preparation.

Flückiger, F. A. 1884

Die Industrie der ätherischen Oele in Grasse.

Archiv. d. Pharm., 222, p. 473. (Am. Journ. Pharm., 57, p. 131; Proc. Am. Pharm. Assoc., 33, p. 254.)

Discusses the essential oil industry in Grasse, France and gives the method of preparing the Oil of Orange. Citrus vulgaris is used in perfumery.

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

Oleum Aurantii Corticis, U.S.--Oil of Orange Peel.

The Nat. Dispensat., 3 ed., p. 1048; ibid., 5 ed., p. 1111.

Gives synonyms in 2 languages, pharmacopoeial definition, natural order, method of preparation, properties, composition, official preparations, medical action and uses of Oil of Orange Peel.

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

Oleum Aurantii Florum, U.S., P. G.--Oil of Orange-Flowers.

The Nat. Dispensat., 3 ed., p. 1049; ibid., 5 ed., p. 1112.

Gives synonyms in 3 languages, pharmacopoeial definition, natural order, method of preparation, properties, composition, official preparation, medical action and uses of Oil of Orange Flowers.

Williams, J. 1884

Note on Certain Anhydrous Essential Oils.

Yrbk. Brit. Pharm. Conf., 21, p. 528. (Proc. Am. Pharm. Assoc., 33, p. 256.)

Gives the amount of pure anhydrous oil of orange obtained from oil of orange.

Eccles, R. G. 1885

Infected Solutions.

Proc. Am. Pharm. Assoc., 33, p. 441.

Shows a picture of the fungi in orange flower water and gives a method for the sterilization of the water.

Kline, M. N. 1885

Oils, Bergamot, Lemon and Orange.

Proc. Am. Pharm. Assoc., 33, p. 366.

Mentions the market price of oil of orange.

Lemberger, J. L. 1885

Orange Flower Water.

Proc. Penn. Pharm. Assoc., 8, p. 149. (Am. Journ. Pharm., 57, p. 365; Pharm. Journ., 45, p. 95.)

Showed that orange flowers gathered in Florida, salted, distilled and after 4 months yielded a very good water.

Reynolds, F. 1885

Aqua Aurantii Floris.

Pharm. Journ., 45, p. 444.

Criticized the new British Pharmacopoeia as to the strength of Orange Flower Water.

Wallach, O. 1885

Pomeranzenschalenöl (Ol. cort. aurant.).

Liebig's Annalen, 227, p. 289. (Am. Journ. Pharm., 80, p. 474.)

Oil of Orange consists of about 90 per cent of d-limonene, a small quantity of citral and l-limonene.

Creuse, J. 1886

Collecting the Orange Flower Crop in France.

Drugg. Circ., 30, p. 154. (Pharm. Journ., 46, p. 66.)

Gives an account of collecting the orange flowers.

De Vilmorin, H. 1886

Orange Rind.

Pharm. Journ., 46, p. 509.

Discusses the histological origin of the rind of the orange.

Noel, M. Ch. 1886

Note sur les essences des aurantiacées.

Journ. de Pharm., et de Chimie, s. 5, v. 13, p. 415. (Archiv. d. Pharm., v. 65, p. 723; Dispensat. U.S.A., 16 ed., p. 1039; ibid., 17 ed., p. 927; ibid., 18 ed., p. 925; ibid., 21 ed., p. 745; Proc. Am. Pharm. Assoc., 35, p. 251.)

Gives a method of distinguishing between the different volatile oils of orange "tribe".

Tanret, C. J. 1886

Sur quelques principes immediats de l'ecorce d'orange amère.

Comptes Rendus, 102, p. 518. (Pharm. Journ. 46, p. 839; Dispensat. U.S.A., 16 ed., p. 276; ibid., 17 ed., p. 247; ibid., 18 ed., p. 251; ibid., 19 ed., p. 219; ibid., 20 ed., p. 212; ibid; 22 ed., p. 207; Proc. Am. Pharm. Assoc., 34, p. 437; Yrbk. Brit. Pharm. Conf., 33, p. 198.)

Found in the rind of the bitter orange, 1. A crystalline acid, $C_{44}H_{28}O_{14}$; 2. a non-crystalline resinous body; 3. hesperidin; 4. isohesperidin, a crystalline glucoside isomeric with hesperidin; 5. aurantiamarin, a new glucoside to which the bitterness of the peel is due.

Barnouvin, H. 1887

Organismes de L'eau de fleurs d' oranger.

Repertoire de Pharmacie, 15, p. 475. (Drugg. Circ., 31, p. 275; Proc. Am. Pharm. Assoc., 36, p. 237.)

Calls attention to the presence of a microbe in orange flower water which differs from the microbes generally found in distilled waters.

Rizzuto, C. 1889

Manufacture of Peel Essences.

Chem.& Drugg., 35, p. 269. (Proc. Am. Pharm. Assoc., 38, p. 585.)

Tells how the oil of orange is extracted from the peel by machine.

Kauffeisen, M. Ca. 1890

(Distilled Water in Metallic Containers.)

Bull. de la Soc. des Phar. de la Cote d' Or., ---, p. ---. (Am. Journ. Pharm., 62, p. 336; Proc. Am. Pharm. Assoc., 39, p. 282.)

(Thinks that iron from the containers in orange flower water may be removed by stirring in a small quantity of carbonate of magnesia and filtering.)

Girling, R. N. 1891

Notes on the Orange and Lemon, and their Cultivation in the Southern States.

Proc. Am. Pharm. Assoc., 39, p. 97.

Gives useful information regarding the cultivation of the orange and lemon trees in the United States.

Schimmel & Co. 1891

Orange flower Oil.

Report, April, 1891, p. 45. (Report, April, 1893, p. 34.)

Tells of the time of collection of Orange flowers, their distillation and the variety of Orange flowers from Chio.

Schimmel & Co. 1891

Orange Flower Oil.

Report , Oct., 1891, p. 34. (Pharm. Journ., 51, p. 292; Proc. Am. Pharm. Assoc., 40, p. 754.)

Distilled Orange Flower Oil from orange flowers obtained from the Riviera, France and found that their distillates showed many variations from the best French distillates of commerce.

Simmonds, P. L. 1891

The Medicinal and Other Useful Plants of Algeria.

Am. Journ. Pharm., 63, p. 10.

Tells of the cultivation of orange varieties in Algeria and their products.

Eccles, R. G. 1892

Impurities in Orange Flower Water.

Drugg. Circ., 36, p. 219. (Proc. Am. Pharm. Assoc., 41, p. 399.)

Reports finding lead in orange flower water which came from the solder of the cans in which the water had been shipped.

Wood, H. C. & Others. 1892

Aurantii Fructus, Br. Bitter Orange.

Dispensat. U.S.A., 16 ed., p. 273; ibid., 17 ed., p. 245.

Gives the part official and its description.

Schimmel & Co. 1893

Orange Oil, sweet.

Report, April, 1893, p. 34. (Dispensat. U.S.A., 21 ed., p. 745; ibid., 22 ed., p. 732; Powers, Essential Oils & Org. Chem. Prep., p. 23.)

Oil of neroli of excellent quality is now produced artificially; it contains pinene, camphene, dipentene, terpineol, phenyl-acetic acid, benzoic acid, decylic aldehyde, and alcohol.

Oil of Bitter Orange Peel and Oil of Sweet Orange Peel have the same specific gravity: 0.848 to 0.854.

Tiemann, F. & Krüger, P. 1893

Ueber Veilchenaroma.

Ber. d. D. Chem. Gesel., 26, p. 2706. (Dispensat. U.S.A., 21 ed., p. 745.)

Under the name of nerolin an artificial product has been placed upon the market in the form of a white crystalline powder, soluble in alcohol and fixed oils and almost insoluble in water. It is used by soap manufactures as a substitute for oil of neroli, and is said to be 10 times as strong. This compound is said to be the ethyl ether of B-naphthol. It is also used in the manufacture of eau-de-Cologne with advantage instead of neroli oil.

Tiemann, F. & Semmler, F. W. 1893

Uber Verbindungen der Citral-(Geranial-) reihe.

Ber. d. D. Chem. Gesel., 26, p. 2711. (Dispensat. U.S.A., 18 ed., p. 925; King's Am. Dispensat., 18 ed., vol. 2, p. 1343; Power's, Essential Oils & Org. Chem. Prep., p. 23.)

Oil of orange flowers contains about 20 per cent of limonene, 30 per cent of linalool, $C_{10}H_{18}O$; 40 per cent of linaloyl acetate, and 3 per cent, of geraniol.

Clayton, E. G. 1894

Note on Lemon and Orange Peel.

Analyst, 19, p. 134. (Dispensat. U.S.A., 18 ed., p. 251; ibid., 19 ed., p. 218; Am. Journ. Pharm., 66, p. 361; King's Am. Dispensat., 18 ed., 3 rev., v. 1, p. 31; Proc. Am. Pharm. Assoc., 42, p. 933; Yrbk. Brit. Pharm. Conf., 31, p. 167.)

As lemon peel is sometimes substituted for orange peel, a means of distinguishing between them has been devised as follows: touch small fragments of peel with a glass rod dipped in hydrochloric acid. Orange peel is colored a rich dark green; the color of lemon peel is unaffected.

Power, F. B. 1894

Oleum Aurantii Corticis.

Oil of Orange Peel.

Essential Oils & Org. Chem. Prep., p. 23. (King's Am. Dispensat., 18 ed., 3 rev., v. 2, p. 1343.)

Gives description, definition, specific gravity, optical rotation, constituents and use of the Oil of Orange Peel.

Power, F. B. 1894

Oleum Aurantii Florum.
Oil of Orange Flowers.

Essential Oils & Org. Chem. Prep., p. 23.

Gives definition, description, specific gravity, optical rotation, constituents and use of the oil of orange flowers.

Schimmel & Co. 1894

Neroli Oil.

Report, April, 1894, p. 36. (Power's, Essential Oils & Org. Chem. Prep., p. 23.)

Good commercial neroli oils vary in optical rotation from about $+96^{\circ}$ to $+99^{\circ}$.

Schimmel & Co. 1894

Sweet Orange Oil.

Report, Oct., 1894, p. 26. (Proc. Am. Pharm. Assoc., 43, p. 1035.)

State that every adulteration of orange oil has the effect of reducing the specific rotatory power. Also gives the lowest rotatory power limit of reliable sweet orange oil.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1894

Aqua Aurantii Florum Fortior, U.S.--Stronger Orange-Flower Water; Triple Orange-Flower Water.

The Nat. Dispensat., 5 ed., p. 255.

Gives pharmacopoeial definition, method of preparation, action and uses of stronger orange-flower water.

Stille, A., Maisch, J. M. & Caspari, H. C. C. 1894

Aurantium Amarum, U.S., Br., P. G.-Bitter Orange.

The Nat. Dispensat., 5 ed., p. 310.

Gives synonyms in 5 languages, natural order, official parts, botanical origin, description of the fruit, peel, and leaves, constituents, pharmaceutical preparations, action and uses.

Wallach, O. 1894

Zur Kenntniss der Terpene und der ätherischen Oele.

Liebig's Annalen, 278, p. 318. (Power's, Essential Oils & Org. Chem. Prep., p. 24.)

Oil of Orange Peel contains an aldehyde, citral which has the formula $C_{10}H_{18}O$.

Wood, H. C. & Others. 1894

Aqua Aurantii Florum Fortior, U.S. Stronger Orange Flower Water. (Triple Orange Flower Water.)

Dispensat. U.S.A., 17 ed., p. 206; ibid., 18 ed., p. 209; ibid., 19 ed., p. 175; ibid., 20 ed., p. 172.

Gives official definition, method of preparation and preservation of Stronger Orange Water.

Schimmel & Co. 1895

Orange Oil, sweet.

Report, April, 1895, p. 38. (Am. Journ. Pharm., 80, p. 475.)

Show that the optical rotation of orange oil varies greatly with changes in temperature of the oil.

Umney, J. C. 1895

Bitter Orange Oils.

Pharm. Journ., 54, p. 1039. (Proc. Am. Pharm. Assoc., 43, p. 1035; Yrbk. Brit. Pharm. Conf., 32, p. 168.)

Discusses the most desirable requirements for Bitter Orange Oils.

Cave, J. 1896

Oleum Neroli.

Am. Journ. Pharm., 68, p. 404.

Considers the synthetic Oil of Neroli finer than the natural oil.

Hill, S. H. 1896

(Oil of Orange.)

Proc. Penn. Pharm. Assoc., 19, p. 121. (Proc. Am. Pharm. Assoc., 45, p. 641.)

Keeps the oil of orange from oxidizing by the addition of 1 ounce of alcohol and 1 ounce of glycerin to each pound of the oil.

Schimmel & Co. 1896

Orange Oil.

Report, October, 1896, p. 48. (Pharm. Journ., 57, p. 358; Proc. Am. Pharm. Assoc., 45, p. 630.)

Gives the specific gravity, optical rotation and a method of distillation by which adulterants may be detected.

Bush, W. J. & Co. 1897

Notes on Essential Oils.

Chem. & Drugg., 50, p. 53. (Dispensat. U.S.A., 18 ed., p. 925, ibid., 21 ed., p. 745; ibid., 22 ed., p. 732.)

Discusses the use of the official oil of neroli and describes inferior qualities of orange oils.

Engler, A. 1897

Citrus Aurantium L.

Die naturlichen Pflanzenfamilien, 1 ed., v. 4, p. 201. (Dispensat. U.S.A., 21 ed., p. 206; ibid., 22 ed., p. 206.)

Divides the species Citrus Aurantium L. into a number of sub-species, some of which have been considered by others as distinct species, as follows:

C. aurantium amara L. (C. Bigardia Duhamel; C. aurantium var. Bigardia Hook. f.) known as the bitter or Seville orange, or Bigarade;
C. aurantium sinensis Gallesi (C. aurantium var. dulcis L.), sweet orange or Malta orange;
C. aurantium Bergamia (Risso et Poyteau) Wight et Arnott which is the Bergamot; and several other varieties which are not of medicinal importance.

Schimmel & Co. 1897

Orange Oil, sweet.

Report, April, 1897, p. 21. (Dispensat. U.S.A., 18 ed., p. 925; King's Am. Dispensat., 18 ed., 3 rev., v. 2, p. 1343; Power's Essential Oils & Org. Chem. Prep., p. 23.)

Gives data on the foreign trade, yield and states that the oil contains a small am't of paraffin.

(Committee) 1898

Aurantii Cortex Recens.
Fresh Bitter Orange Peel.

The British Pharmacopoeia, 4 ed., p. 49. (Pharm. Journ., 64, p. 142.)

Gives the official definition and characters of Fresh Bitter Orange Peels.

(Committee) 1898

Aurantii Cortex Siccatus.

The British Pharmacopoeia, 4 ed., p. 50.

Gives the official definition and characters of the dried bitter-orange peel.

Felter, H. W. & Lloyd, J. U. 1898

Aqua Aurantii Florum (U.S.P.)-Orange Flower Water.

King's Am. Dispensat., 18 ed., v. 1, p. 244.

Gives method of preparation, action, medical uses, and dosage of Orange Flower Water.

Felter, H. W. & Lloyd, J. U. 1898

Aqua Aurantii Florum Fortior (U.S.P.)--
Stronger Orange Flower Water.

King's Am. Dispensat., 18 ed., v. 1, p. 244.

Gives Synonyms, botanical Source, History, Tests, Description, and Uses of Stronger Orange Flower Water.

Felter, H. W. & Lloyd, J. W. 1898

Aurantii Amari Cortex (U.S.P.)-Bitter Orange Peel.

King's Am. Dispensat., 18 ed., v. 1, p. 309.

Gives natural order, common names, pharmacopoeial definition, botanical source, description of the rind, fruit and leaves, chemical composition, and the action and medical uses of Bitter Orange Peel.

Felter, H. W. & Lloyd, J. U. 1898

Aurantii Dulcis Cortex (U.S.P.)-Sweet Orange Peel.

King's Am. Dispensat., 18 ed., v. 1, p. 310.

Gives pharmacopoeial definition, natural order, common names, illustration, botanical source, description, history, chimical composition, test, action, medicinal uses, and dosage of sweet orange peel.

Felter, H. W. & Lloyd, J. U. 1898

Aurantii Flores.--Orange Flowers.

King's Am. Dispensat., 18 ed., v. 1, p. 311.

Gives pharmacopoeial definition, natural order, description, chemical compostion, action, medical uses, and dosage of orange flowers.

Flatau, J. & Labbé, H. 1898

Sur l'essence de Portugal.

Bull. d. Soc. Chem., Paris, 19, p. 361. (Am. Journ. Pharm., 80, p. 474; Pharm. Journ. 61, p. 458; Comptes Rendus, 126, p. 1876.)

State that myristinic acid and myristicol are present in Oil of Orange in small quantities, besides traces of citronellol and a new aldehyde with a characteristic odor of oranges.

They also separated an ester in the form of an amorphous powder. Its melting point is 64° to 65°C. and it has a strong orange odor.

Southwell, C. & Co. 1898

(Rind of the Seville Orange).

Pharm. Journ., 61, p. 620 d.

States that they will be in a favorable position to supply the rind of the Seville orange, either dried or in a fresh condition, for making Tinct. Aurant. B. P. 1898.

Boring, E. M. & Shinn, ---. 1899

(Oil of Orange.)

Am. Journ. Pharm., 72, p. 48.

At a meeting of the pharmaceutical society gave a method of preservation for Oil of Orange.

Idris, T. H. W. 1899

Examination of the Terpeneless Oils of Lemon and Orange in the Market.

Yrbk. Brit. Pharm. Conf., 36, p. 447; Pharm. Journ., 63, p. 103. (Am. Journ. Pharm., 71, p. 452.)

Examined the terpeneless oils of lemon and orange on the market, and records the results, which show great difference in the value of the respective products. Users of terpeneless oils are warned to exercise caution in purchasing so-called "terpeneless" and "concentrated"lemon oils offered at absurd prices.

Robins, H. H. 1899

Bitter Oranges.

Pharm. Journ., 63, p. 495.

Gives the commercial source of bitter oranges and the various uses of the peel.

Schimmel & Co. 1899

Oleum Aurantii Florum.
Oil of Orange Flowers.

Report, April, 1899, p. 32. (King's Am. Dispensat. 18 ed., vol. 2, p. 1344.)

Discovered in 1894 that the oil contained small quantities of anthranilic acid methyl-ester ($NH_2.C_6H_4.COOCH_3$), melting at 25°C. (77°F.), to the presence of which the fragrance and the flouresscence of the oil are due.

Schimmel & Co. 1899

Orange Flower Oil.

Report, Oct., 1899, p. 41. (Proc. Am. Pharm. Assoc., 48, p. 746.)

Report the characters of 25 distillates of orange flower oil obtained from France.

Watts, H. 1899

Orange Peel.

Proc. Am. Pharm. Assoc., 47, p. 553.

Ascertained the relative portion of peel, white of peel and juice from 2 lots of Seville oranges.

Gras, J. 1900

Orange Flower Oil.

Proc. Am. Pharm. Assoc., 48, p. 746.

Reports the yield of orange flower oil on an industrial scale.

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

Oleum Aurantii Corticis (U.S.P.)-Oil of Orange Peel.

King's Am. Dispensat., 18 ed., v. 2, p. 1342.

Gives pharmacopoeial definition, synonym, source and preparation, chemical composition, description and tests, and action and uses of Oil of Sweet Orange Peel.

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

Oleum Aurantii Florum (U.S.P.)-Oil of Orange Flowers.

King's Am. Dispensat., 18 ed., v. 2, p. 1343.

Gives pharmacopoeial definition, natural order, synonyms, preparation and history, description, chemical composition, and uses of Oil of Orange Flowers.

Parry, E. J. 1900

Oil of Orange.
A New Constituent.

Chem. & Drugg., 56, p. 462. (Am. Journ, Pharm., 80, p. 474; Proc. Am. Pharm. Assoc., 48, p. 745; Yrbk. Brit. Pharm. Conf., 33, p. 94.)

First detected the presence of the methyl ester of anthranilic acid in sweet orange oil.

Schimmel & Co. 1900

Oil of Orange, Sweet.

Report, April, 1900, p. 20. (Am. Journ. Pharm., 80, p. 474.)

Confirmed the presence of the methyl ester of anthranilic acid in sweet orange oil.

Schimmel & Co. 1900

Orange Oil, Mandarin.

Report, Oct., 1900, p. 31. (Yrbk. Brit. Pharm. Conf., 38, p. 95.)

Identified the methyl-ester, of anthranilic acid in Mandarin Orange Oil. It is to this compound that the fine blue fluorescence of solutions of mandarin oil is due.

Schimmel & Co. 1900

Orange Oil, Sweet.

Report, Oct., 1900, p. 31. (Yrbk. Brit. Pharm. Conf., 38, p. 94.)

Sweet orange oil contains besides terpenes, decylic aldehyde, dextro-linalool, dextro-terpineol, nonyl alcohol, and caprylic acid.

Wardleworth, T. H. 1900

Oranges (Citrus aurantium, Citrus vulgari, etc.).

Pharm. Journ., 65, p. 162.

States that the climate of Jamaica is admirably suited for the growth of all descriptions of oranges and that it is possible for Jamaica to produce an unlimited supply of orange peel of excellent quality.

Hesse, A. & Zeitschel, O. 1901

Breitrag zur Kenntniss der Flechten und ihrer charakteristischen Bestandtheile.

Jour. f. Prakt. Chem., 63, p. 525. (Dispensat. U.S.A., 19 ed., p. 174; ibid., 20 ed., p. 172; ibid., 21 ed., p. 167.)

They found by exhausting with ether the orange flower water obtained in the distillation of the orange blossoms that the quantity of oil dissolved in the water represented about one-third of the total amount of oil from the blossoms.

Hesse, A. & Zeitschel, O. 1901

Ueber Orangenblüthenöl I.

Jour. f. Prakt. Chem., 64, p. 245. (Schimmel's Report, April, 1901, p. 50; Proc. Am. Pharm. Assoc., 50, p. 969.)

Detected in oil of orange flower water, phenyl-ethyl alcohol, phenyl-acetic acid and geraniol.

Stephan, R. 1901

Pommeranzen-Oel, süss.

Pharm. Zeit., 46, p. 110. (Pharm. Journ., 66, p. 517.)

Gives the percentage composition of sweet orange oil.

Van Italie, L. 1901

(Pommeranzen-Oel)

Pharm. Weekblad, 28, p. ---. (Pharm. Centrahl., 42, p. 538; Proc. Am. Pharm. Assoc., 50, p. 970.)

(Reported on an inferior quality of Oil of Orange.)

Cooban, B. S. 1902

Orange Flower Skin Food.

Bull. Pharm., 16, p. 159. (Pharm. Journ., 68, p. 485; ibid., 69, p. 343; Pharm. Era, 28, p. 526.)

Gives a formula and uses of a "skin food" containing Orange Flower Water.

Hesse, A. & Zeitschel, O. 1902

Orange Flower Oil Obtained by Enfleurage.

Proc. Am. Pharm. Assoc., 50, p. 969.

In a communication to the society, gave the characters of Orange Flower Oil obtained by enfleurage of the flowers.

Hesse, A. & Zeitschel, O. 1902

Orange Flower Oil obtained by extraction.

Proc. Am. Pharm. Assoc., 50, p. 969.

In a communication to the society, gave the characters of Orange Flower Oil obtained by extraction of the blossoms with volatile solvents.

Hesse, A. & Zeitschel, O. 1902

Orange Flower Water.

Proc. Am. Pharm. Assoc., 50, p. 969.

In a communication to the society they give the chief characters of orange flower water.

1902

Manseau, ---.

(Orange Flower Water.)

Bulletin de la Société de Pharm. de Bordeaux, ---, p. -----. (Chem. & Drugg., 60, p. 216; Proc. Am. Pharm. Assoc., 50, p. 702.)

(By shaking orange-flower water which has become yellow, cloudy or full of growths, with sand it can be clarified and made suitable for purposes other than medicinal.)

1902

Ogston, G. H. & Moore, W. F.

Oil of Sweet Orange.

Chem. & Drugg., 60, p. 155. (Am. Journ. Pharm., 80, p. 476.)

Discuss the physical properties of Oil of Sweet Orange and state that the distillate from pure oil has a rotation of at least 1° above that of the original oi; if the increase in rotation be less, or below that of the original oil, there must be a strong suspicion that the oil has been adulterated with lemon oil or terpenes of lemon oil.

1902

Theulier, E.

Étude sur l'essence de fleurs d'orangers douces ou néroli portugal.

Bull. d. Soc. Chem., 27, p. 278. (Proc. Am. Pharm. Assoc., 50, 969; ibid., 51, p. 905; Schimmel's Report, Oct., 1902, p. 52.)

Reported on the physical and chemical constants of a large number of oils of orange flowers from different sources.

1902

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

(Chinese Oil of Neroli.)

Pharm. Journ., 69, p. ---. (Am. Journ. Pharm., 74, p. 570.)

(Describe Chinese Oil of Orange).

Charabot, E. & Laloue, G. 1903

Production et distribution de quelques substances organiques chez le Mandarinier.

Comptes Rendus, 137, p. 996. (Pharm. Journ., 73, p. 813; Proc. Am. Pharm. Assoc., 53, p. 650.)

Discuss the development and distribution of proximate constituents of the Mandarin Orange Tree.

Schimmel & Co. 1903

Orange Flowers, Essential Oil of.

Report, Oct., 1903, p. 50. (Yrbk. Brit. Pharm. Conf., 41, p. 129.)

Reports on the physical characters of oil of orange flowers.

Stanley, H. 1903

Some Cellulosic Constituents of Orange-Peel.

Chem. News, 87, p. 220. (Proc. Am. Pharm. Assoc., 51, p. 783.)

Discusses the chemical composition of the inner and outer layer of orange peel.

Wilbert, M. I. 1903

Some Further Notes on Essential Oils.

Am. Journ. Pharm., 75, p. 221.

Describes Oil of Orange Flowers, a synthetic product and Oil of Orange.

Charabot, E. & Laloue, G. 1904

Rescherches sur le mécanisme de la circulation des composés odorants chez la plante.

Bull. d. Soc. Chem., 31, p. 937. (Pharm. Journ., 73, p. 583.)

Discusses the formation of Oil of Neroli in Orange Flowers.

Hesse, A. & Zeitschel, O. 1904

(Oil of Neroli.)

Pharm. Weekblad, 41, p. 61. (Pharm. Journ., 73, p. 179.)

(Gives the constituents and physical properties of Oil of Neroli.)

Umney, J. C. & Bennett, C. T. 1904

South American Orange Oil.

Pharm. Journ., 72, p. 217. (Proc. Am. Pharm. Assoc., 52, p. 872; Yrbk. Brit. Pharm. Conf., 41, p. 129.)

Report on the South American Oil of Orange and contrast it with other commercial varieties of Orange Oil.

Berté, E. & Gulli, S. 1905

Mandarin Oil.

Chem. & Drugg., 67, p. 445. (Proc. Am. Pharm. Assoc., 54, p. 882; Yrbk. Brit. Pharm. Conf., 43, p. 49.)

Give the yield, characters and constants of Mandarin Orange Oil.

Litterer, G. 1905

Étude sur l'essence de feuilles et de tiges d'oranger à fruits doux.

Bull. d. Soc. Chem., 33, p. 1079. (Pharm. Journ., 76, p. 109; Proc. Am. Pharm. Assoc., 54, p. 882; Yrbk. Brit. Pharm. Conf., 43, p. 57.)

Discusses the composition of sweet orange oil.

Schimmel & Co. 1905

Orange, Bitter, Aldulterated Essential Oil of.

Report, Nov., 1905, p. 32. (Yrbk. Brit. Pharm. Conf., 43, p. 57.)

Reports on a sample of bitter orange oil adulterated with resin.

Charabot, E. & Laloue, G. 1906

Formation et distribution des composés terpéniques chez l'oranger à fruits amers.

Comptes Rendus, 142, p. 798. (Pharm. Journ., 76, p. 641.)

Discuss the formation of the oil in the rind of the bitter oranges.

Schimmel & Co. 1906

Orange Oil.

Report, Nov., 1906, p. 34. (Proc. Am. Pharm. Assoc., 55, p. 882; Yrbk. Brit. Pharm. Conf., 44, p. 118.)

Give a correction of the constants for bitter and sweet orange oil.

Bernegau, H. L. 1907

Comments on Some Official Standards and Tests.

Am. Journ. Pharm., 79, p. 554.

A sample of Oil of Orange stood the U.S.P. tests for specific gravity, solubility, general appearance, odor, etc., but did not answer U.S.P. requirements in regard to optical rotation.

Dowzard, E. 1908

Oil of Orange

Am. Journ. Pharm., 80, p. 474. (Proc. Am. Pharm. Assoc., 57, p. 315.)

Gives the specific gravity, optical rotation and adulterants of 17 samples of sweet orange oil.

Greenwalt, W. G. 1908

Orange Flower as a Perfume and Flavor.

Proc. Penn. Pharm. Assoc., 31, p. 280. (Proc. Am. Pharm. Assoc., 57, p. 65.)

Discusses the use of Orange Flower Water as a perfume and flavor.

Humphrey, J. 1910

Orange Flower Water.

Pharm. Journ., 84, p. 74.

In a reply to an inquiry of E. Q. states that Orange Flower Water may be made simply by shaking the essential oil with hot water and, also, gives a method of making concentrated water of orange flowers.

Tschirch, A. 1910

Quelques étymologies de noms de plantes médicinales et de drogues.

Journ. de Pharm. et de Chimie, s. 7, v. 2, Suppl., p. 2. (Dispensat. U.S.A., 20 ed., p. 210.)

The word orange is derived from the sanscrit Nagaranga or Naranga.

Zickgraf, G. 1910

Ueber die Verwendung von Limonen anstatt Terpentinöl bie Lungenkranken.

Müchner Medizinische Wochenschrift, 57, p. 1070. (Dispensat. U.S.A., 20 ed., p. 752; ibid., 22 ed., p. 731.)

The oil of orange is used chiefly as a flavoring agent but it has beneficial effects in chronic bronchitis for the same class of cases in which the oil of turpentine is used. It has the advantages over the latter of being much more pleasant to take and non irritant to the kidneys.

Brooks, B. T. 1911

New Philippine Essential Oils.

Philipp. Journ. of Sc. 6, a. 345. (Schimmel's Report, April, 1912, p. 78; Yrbk. Am. Pharm. Assoc., 1, p. 341.)

It appears possible to prepare an orange oil in the Philippine Islands from the peel of the fruit of Citrus reticulata, Blanco, known locally as naranjita, which is almost identical with Italian orange oil.

Lloyd, J. U. & C. G. 1911

Aurantii Dulcis et Amari Cortex.

Bull. Lloyd Libr., 18, p. 7. (Dispensat. U.S.A., 20 ed., p. 210.)

The orange was unknown to the ancient Greeks and Romans and was probably introduced into Europe by the Arabians.

Schimmel & Co. 1911

Mandarin Oil from unripe fruits.

Report, Oct., 1911, p. 46. (Proc. Am. Pharm. Assoc., 59, p. 388.)

Describe the characters of Mandarin-Orange Oil.

Fritzche Brothers. 1912

Report on Market Conditions for Messina Essences During the Fall and Winter Seasons 1911-1912.

Am. Journ. Pharm., 84, p. 226.

Reports on the market conditions of Sweet Orange Oil and Bitter Orange Oil for the above period of time.

Harlay, V. 1912

Pectines d'Aucuba et d'écorces d'oranges douces.

Journ. de Pharm. et de Chimie, s. 7, v. 5, p. 345. (Yrbk. Brit. Pharm. Conf., 49, p. 207.)

Gives a method by which the pectins of sweet orange peel may be extracted.

Rosenthal, G. 1915

L'écorce d'orange dans l'hygiène intestinale du soldat.

Journ. de Pharm. et de Chimie, s. 7, v. 12, p. 234. (Pharm. Journ., 95, p. 613; Yrbk. Brit. Pharm. Conf., 53, p. 295.)

Stated at a recent meeting of the Société de Therapeutique that exhausted orange peel had been used with success in the French army for the treatment of chronic constipation as a substitute for agar-agar.

Guyot, R. 1916

Altération colorée des eaux distillées en général, de l'eau de fleur d' oranger en particulier.

Journ. de Pharm. et de Chimie, s. 7, v. 13, p. 37. (Pharm. Journ., 96, p. 165; ibid., 98, p. 43; Yrbk. Am. Pharm. Assoc., 5, p. 62; Yrbk. Brit. Pharm. Conf., 53, p. 348.)

Explains that the cause of the green coloration in Orange Flower Water and gives methods of removing it.

Guyot, R. 1917

Bacilles chromogènes des eax de fleur d'oranger. Morphologie. Milieux de culture.

Journ. de Pharm. et de Chimie, s. 7, v. 15, p. 12. (Yrbk. Am. Pharm. Assoc., 6, p. 64; Yrbk. Brit. Pharm. Conf., 54, p. 262.)

Gives additional data on the bacillus producing the green color in orange flower water.

Hood, S. C. 1917

Relative Oil Yield of Florida Oranges.

Am. Perfumer, 12, p. 297. (Yrbk. Am. Pharm. Assoc., 6, p. 345.)

Gives the yield of Oil of Orange from Florida fruit.

Mach, F. & Lederle, P. 1917

Die Schalen und Kerne der Apfelsinen und Citronen.

Chem. Zeit., 41, p. 830. (Journ. Soc. Chem. Ind., 37, p. 105 A; Yrbk. Am. Pharm. Assoc., 7, p. 266.)

Gives the constituents of orange peel and seed and Citron peels.

Wood, H. C. & Others. 1918

Aurantii Cortex Indicus. Br.
Indian Orange Peel.

Dispensat. U.S.A., 20 ed., p. 209; ibid., 21 ed., p. 205.

Gives the B. P. definition, description and uses of Indian Orange Peel.

Wood, H. C. & Others. 1918

Aurantii Cortex Recens, Br.
Fresh Bitter-Orange Peel.

Dispensat. U.S.A., 20 ed., p. 209; ibid., 21 ed., p. 205.

Gives the U.S.P. definition and description of Bitter Orange Peel.

Wood, H. C. & Others. 1918

Oleum Aurantii U.S.

Dispensat. U.S.A., 20 ed., p. 751; ibid., 21 ed., p. 743; ibid., 22 ed., p. 730.

Gives official definition, uses, properties, synonyms in 3 foreign languages, and a list of the preparations in which oil of orange is used.

Albes, E. 1919

Scented Soap from Paraguay Oranges.

Sci. Am. Supp., 88, p. 382. (Yrbk. Am. Pharm. Assoc., 8, p. 409.)

Discusses the distillation of oil of petit grain, used for scenting toilet soaps, from the leaves of bitter orange or bigarade (Citrus bigardia).

Kopf, A. A. 1919

Process for Increasing Orange Oil.

Pharm. Era, 52, p. 286. (Yrbk. Am. Pharm. Assoc., 8, p. 409.)

Suggests increasing the amount of orange oil by preparing it from local fruit.

--------, ---. 1919

Lemon and Orange Peeling.

Chem. & Drugg., 91, p. 450. (Yrbk. Am. Pharm. Assoc., 8, p. 252.)

The Home Office has issued a poster dealing with the steps to be taken to prevent and treat acid "holes" or ulcers caused on the skin of workers who peel lemons or oranges.

Bonis, A. 1923

L'eau de fleur d'oranger et ses falsifications.

Annales des Falsifications, 16, p. 260. (Jorn. de Pharm. et de Chimie, s. 7, v. 29, p. 159; Pharm. Journ., 113, p. 199; Yrbk. Am. Pharm. Assoc., 12, p. 335; ibid., 13, p. 357; ibid., 14, p. 57; Bull. Sci. Pharmacol., 38, p. 209; Yrbk. Brit. Pharm. Conf., 61, p. 395; Chem. & Drugg., 99, p. 900.)

Describe methods by which various adulterants of Orange Flower Water may be detected.

Wood, H. C. & Others. 1926

Oleum Aurantii Amarae. N.F.
Oil of Bitter Orange Ol. Aurant. Amar.

Dispensat. U.S.A., 21 ed., p. 744; ibid., 22 ed., p. 731.

Gives official definition, description, physical properties, dose, official preparation, and synonyms.

Lippmann, E. O. 1927

Kleinere pflanzenchemische Mitteilungen.

Ber. d. D. Chem. Gesel., 60, pt. 1, p. 161. (Pharm. Centralhl., 68, p. 291; Yrbk. Am. Pharm. Assoc., 16-17, p. 183; Yrbk. Brit. Pharm. Conf., 64, p. 208.)

Found a network of fine, white crystals on the peel of a number of oranges that had by chance been left in a dry place and were greatly shrunken. He determined that the crystals consisted of rhamnose, and believes that they originated from the hesperidin of the orange.

Maunier, E. 1927

(Petitgrain Oil.-Mandarin.)

Parfumes de France, ---, p. ---. (Chem. Abs., 21, p. 1518; Yrbk. Am. Pharm. Assoc., 16-17, p. 470.)

(Describes the method of obtaining Petitgrain Oil, method of obtaining Petitgrain Oil, the physical constants and its use in the manufacture of perfumes and liqueurs.)

Tedesko, E. 1927

(Oil of Orange Peel.--Spanish.)

Parfum. moderne, ---, p. ---. (Chem. Abs., 21, p. 1519; Yrbk. Am. Pharm. Assoc., 16-17, p. 467.)

(Gives the constants of Spanish Oil of Orange Peel obtained by a new process (not specified, but probably extraction with volatile solvents.)

Willimot, S. & Wokes, F. 1927

Some Constituents of Citrus Fruits.

Chem. & Drugg., 107, p. 32. (Dispensat. U.S.A., 22 ed., p. 208.)

State that the rind of the orange is rich in vitamin A.

Mattlack, M. B. 1929

A Chemical Study of the Rind of California Oranges.

Journ. Am. Pharm. Assoc., 18, p. 25. (Yrbk. Am. Pharm. Assoc., 18, p. 124.)

Reports the results of a chemical study of the rind of California oranges.

Guyot, R. 1930

(Hydrogen Sulfide Fermentation in Orange Flower Water).

Bull. d. Soc. d. Pharm. de Bordeaux, 68, p. 171. (Yrbk. Am. Pharm. Assoc., 19, p. 38.)

(States that hydrogen sulfide fermentation in samples of orange flower water is due to the action of certain microorganisms on calcium sulfate.)

Brooks, R. O. 1931

(Orange Oils.)

Aromatics, 13, p. 36. (Squibb Abstr. Bull., 4, A-429; Yrbk. Am. Pharm. Assoc., 20-21, p. 163.)

(Calls attention to the disagreement between the federal food standard and the U.S.P. standard for orange oils.)

Gregoire, F. & Ripert, J. 1931

La fluorescence des eaux d'oranger.

Bull. d. Sci. Pharmacol., 38, p. 209. (Yrbk. Am. Pharm. Assoc., 20-21, p. 192.)

Describe a method of differentiating between waters prepared from the oil from the leaves and from the flowers by their fluorescence.

Bennett, A. H. 1932

Some Notes on Orange Oil.

Perf. & Ess. Oil Rec., 23, p. 2. (Yrbk. Am. Pharm. Assoc., 20-21, p. 473.)

Discusses several points in connection with orange oil.

Gwathemy, J. J. 1932

Oil of Orange in Ether Anaesthesia.

Pharm. Journ., 128, p. 528.

States that Oil of Orange disguises the odor and adds to the value of ether administered as an anesthetic. Also, gives a formula for an ether-oil of orange anesthetic.

Poore, H. D. 1932

Composition of Californian Lemon and Orange Oils.

Perf. & Ess. Oil Rec., 23, p. 166. (Yrbk. Am. Pharm. Assoc., 20-21, p. 470.)

Discusses the composition of Californian Orange Oils.

Gilmour, J. P. 1933

Perfumery Material From French Guinea.

Pharm. Journ., 130, p. 520.

Discusses the quality of Oil of Orange from French Guinea and its use in perfumery.

LIST OF BOOKS CONSULTED.

Bigelow, J., Mater(ia) Med(ica), 1 ed., 1822.

Coxe, J. R., (The) Am(erican) Dispensat(ory), 1 ed., 1806; 4 ed., 1818; 6 ed., 1825; 7 ed., 1827; 8 ed., 1830; 9 ed., 1831.

Ewell, J., The Medical Companion or Family Physician, (1 ed), 1817; 7 ed., 1827.

Felter, H. W. & Lloyd, J. U. King's Am(erican) Dispensatory, 18 ed., v. 1, 1898; v. 2, 1900.

King, J., (The) Am(erican) Dispensat(ory), 6 ed., 1864; 8 ed., 1872; 10 ed., 1875; 15 ed., 1881; 16 ed., 1889.

King, J. & Newton, R. S., (The) Eclectic Dispensat(ory) (of the) U(nited) S(tates) (of) A(merica), 1 ed, 1852.

Stille, A. & Maisch, J. M., The Nat(ional) Dispensat(ory), (1 ed.), 1879; 2 ed., 1879; 3 ed., 1884; 5 ed., 1894.

Thacher, J., N(ew) Dispensat(ory), 1 ed., 1810; 2 ed., 1813; 4 ed., 1821.

Willdenow, C. L., Linne's Species Plantarum, 4 ed., v. 1, pt. 2, 1797.

Wood, G. B. & Bache, F., (The) Dispensat(ory) (of the) U(nited) S(tates) (of) A(merica). 2 ed., 1834; 3 ed., 1836; 4 ed., 1839; 5 ed., 1843; 6 ed., 1845; 7 ed., 1847; 8 ed., 1849; 9 ed., 1851; 10 ed., 1854; 11 ed., 1858; 12 ed., 1869; 13 ed., 1871; 14 ed., 1879; 15 ed., 1883; 16 ed., 1892; 17 ed., 1894; 18 ed., 1899; 19 ed., 1907; 20 ed., 1918; 21 ed., 1926; 22 ed., 1937.

Woodville, W., Med(ical) Bot(any), 2 ed., v. 4, 1810.

LIST OF JOURNALS CONSULTED.

Am(erican) Journ(al of) Pharm(acy), v. 1-108; 1825-1936.

Pharm(aceutical) Journ(al), v. 1-139; 1841-1937.

Proc(eedings of the) Am(erican) Pharm(aceutical) Assoc(iation), v. 1-59; 1851-1911.

Y(ea)rb(oo)k (of the) Am(erican) Pharm(aceutical) Assoc(iation), v. 1-23; 1912-1934.

Y(ea)rb(oo)k (of the) Brit(ish) Pharm(aceutical) Conf(erence), 1-64; 1864-1927.

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

SWEET AND BITTER ORANGE PEEL

U.S.P., 1820 (Wash.) p. 30.

Aurantii Cortex — Citrus aurantium. W. III. 1427.

Orange peel — Cortex fructus. The rind of / the fruit.

U.S.P., 1830 (N.Y.), p. 21

Aurantii Cortex. — Citrus Aurantium.

Bitter or Seville Orange-peel.

Prop. Odour fragrant; taste bitter, aromatic.

Med. Oper. Carminative, stomachic.

U.S.P. 1830 (Phil.), p. 6

Aurantii Cortex — Citrus aurantium. W. III. 1427.

Orange Peel — Fructus cortex exterior.

The outer rind of the fruit.

U.S.P., 1840, p. 14

Aurantii Cortex. — Orange Peel

The outer rind of the fruit of Citrus vulgaris / or Citrus Aurantium (De Candolle).

U.S.P., 1850, p. 16

Aurantii Cortex. — Orange Peel.

The outer rind of the fruit of Citrus vulgaris / or Citrus Aurantium (De Candolle).

U.S.P., 1860, p. 18

Aurantii Amari Cortex. — Bitter Orange Peel.

The rind of the fruit of Citrus vulgaris.

U.S.P., 1860, p. 18

Aurantii Dulcis Cortex. — Sweet Orange Peel.

The rind of the fruit of Citrus Aurantium.

U.S.P., 1870, p. 19

Aurantii Amari Cortex. Bitter Orange Peel.

The rind of the fruit of Citrus vulgaris.

U.S.P., 1870, p. 20

Aurantii Dulcis Cortex. Sweet Orange Peel.

The rind of the fruit of Citrus Aurantium.

U.S.P., - 1880, p. 51

Aurantii Amari Cortex.

Bitter Orange Peel.

The rind of the fruit of Citrus vulgaris Risso (Nat. Ord., Aurantiaceae).

In narrow, thin bands or in quarters; epidermis of a dark brownish-green color, / glandular, and with very little of the spongy, white, inner layer adhering to it; it / has a fragrant odor, and an aromatic, bitter taste.

Preparations: Extractum Aurantii Amari Fluidum. Tinctura Aurantii Amari.

U.S.P., - 1880, p. 51

Aurantii Dulcis Cortex

Sweet Orange Peel

The rind of the fruit of Citrus Aurantium Risso (Nat. Ord., Aurantiaceae).

Closely resembling Bitter Orange Peel, but having an orange-yellow color. / It has a sweetish, fragrant odor, and an aromatic, slightly bitter taste.

Preparations: Syrupus Aurantii. Tinctura Aurantii Dulcis.

U.S.P., - 1890, p. 61

Aurantii Amari Cortex

Bitter Orange Peel

The rind of the fruit of Citrus vulgaris Risso (Nat. Ord. Rutaceae).

In narrow, thin bands, or in quarters; epidermis of a dark brownish-green / color, glandular, and with very little of the spongy, white, inner layer ad- / hering to it; it has a fragrant odor, and an aromatic, bitter taste.

Preparations: Extractum Aurantii Amari Fluidum. Tinctura Aurantii Amari.

U.S.P., - 1890, p. 61

Aurantii Dulcis Cortex

Sweet Orange Peel

The rind of the fresh fruit of Citrus Aurantium Linne (Nat. O Rutaceae).

Closely resembling Bitter Orange Peel, but having an orange-yellow color. / It has a sweetish, fragrant odor, and an aromatic, slightly bitter taste.

Preparations: Syrupus Aurantii. Tinctura Aurantii Dulcis.

U.S.P., - 1900, p. 64

Aurantii Amari Cortex

Bitter Orange Peel

The dried rind of the unripe fruit of Citrus vulgaris Risso (Fam. / Rutaceae).

In narrow, thin bands, or in quarters; epidermis of a brownis green color; / outer layer with numerous oil reservoirs; inner layer spongy, light yellowish- / brown; odor fragrant; / taste aromatic and bitter.

Average Dose. - 1 Gm. (15 grains).

U.S.P., - 1900, p. 64

Aurantii Dulcis Cortex

Sweet Orange Peel

The recently separated outer rind of the ripe fruit of Citrus Auran- / tium Linne (Fam. Rutaceae).

Outer surface orange-yellow, with numerous oil reservoirs; odor highly / fragrant, taste pungently aromatic.

Average Dose.- 1 Gm. (15 grains).

U.S.P., - 1910, p. 69

Aurantii Amari Cortex

Bitter Orange Peel

Aurant. Amar. Cort.

The rind of the fruit of Citrus Aurantium amara Linne (Fam. / Rutaceae).

In narrow, thin bands (ribbons), or more often elliptical, flattened, more or / less curved, pieces (quarters), varying from 3 to 6 cm. in length; outer surface / convex, varying from reddish- or yelowish- brown (ribbons) to greenish-brown / (quarters), coarsely reticulate and with the edges recurved; inner surface con- / cave, whitish, with numerous conical projections and yellowish-white, linear / more or less anastomosing fibro-vascular bundles; fracture hard; transverse / section light brown, somewhat spongy, outer layer with 1 or 2 rows of oil reser- / voirs; odor fragrant; taste aromatic and bitter.

The powder is yellowish-white or light brown; fragments of parenchyma cells / numerous, the walls from 0.004 to 0.012 mm. in thickness; few fragments of / trachae with close spiral markings or simple pores; occasional membrane crystals./
Powdered Bitter Orange Peel is colored yellowish upon the addition of potassium / hydroxide T.S..

Bitter Orange Peel yields not more than 7 per cent of ash.

Preparations: Fluidextractum Aurantii Amari. Tinctura Aurantii Amari. / Tinctura Cinchonae Composita. Tinctura Gentianae Composita.

Average Dose.- Metric, 1 Gm. - Apothecaries, 15 grains.

U.S.P., - 1910, p. 69

Aurantii Dulcis Cortex

Sweet Orange Peel

Aurant. Dulc. Cort.

The outer rind of the fresh, ripe fruit of Citrus Aurantium sinensis / Gallesio (Fam. Rutaceae).

The outer, orange-yellow layer recently separated by grating or paring and / consisting of epidermal cells, parenchyma cells of the sarcocarp with chromo- / plastids, oil reservoirs and globules of volatile oil; odor highly fragrant; taste / pungently aromatic.

Preparation- Tinctura Aurantii Dulcis.

U.S.P., - 1920, p. 70

Aurantii Amari Cortex

Bitter Orange Peel

Aurant. Amar. Cort.

Bitter Orange Peel is the dried rind of the unripe fruit of Citrus Auran- / tium Linne (Fam. Rutaceae).

Description and physical properties.

Unground Bitter Orange Peel - Thin, irregular bands (ribbons) or quarters; outer / surface yellowish- or reddish- or greenish-brown with numerous, minute pits / and fine reticulate ridges; inner surface whitish with many slight conical pro- / jections and fine anastomosing lines formed by the vascular bundles; fracture / hard, short; odor fragrant and aromatic; taste aromatic and bitter.

Structure - An epidermis of small, angular cells; an outer parenchyma of thick- / walled cells containing chloroplasts or chromoplasts and occasionally calcium / oxalate prisms, and bearing the large oil reservoirs, arranged mostly in two / irregular rows; an inner spongy parenchyma of branched cells surrounding / large intercellular spaces, and bearing delicate, anastomosing vascular bundles.

Powdered Bitter Orange Peel - Yellowish-gray or light brown; fragments of paren- / chyma abundant, the cell walls from 0.004 to 0.012 mm. thick; tracheae very / small with close spiral markings or simple pores; calcium oxalate prisms from / 0.020 to 0.045 mm. long.

Test for identity - Powdered Bitter Orange Peel is colored yellow upon the addi- / tion of sodium hydroxide T.S..

Preparations - Tinctura Aurantii Amari, Tinctura Cinchonae Composita, Tinctura Gentianae Composita.

Average Dose - Metric, 1 Gm. - Apothecaries, 15 grains.

U.S.P., - 1920, p. 71

Aurantii Dulcis Cortex

Sweet Orange Peel

Aurant. Dulc. Cort.

Sweet Orange Peel is the fresh, outer rind of the ripe fruit of Citrus / Aurantium var. sinensis Linne (Fam. Rutaceae).

Description and Physical Properties.

Unground Sweet Orange Peel - The outer; orange-yellow layer recently separated / by grating or paring and consisting of epidermal cells, parenchyma and oil / reservoirs with globules of volatile oil; odor highly fragrant; taste pungently / aromatic.

The inner, white portion of the rind should not be used.

Preparation - Tinctura Aurantii Dulcis.

U.S.P., - 1930, p. 78

Aurantii Amari Cortex

Bitter Orange Peel

Aurant. Amar. Cort.

Bitter Orange Peel is the dried rind of the unripe fruit of Citrus / Aurantium Linne (Fam. Rutaceae).

Description and physical properties -

Unground Bitter Orange Peel - In irregular bands (ribbons) or quarters from 2 to / 6 mm. in thickness; outer surface greenish- or reddish- or yellowish-brown / with numerous, minute pits and fine reticulate ridges; inner surface whitish / with many slight conical projections and fine anastomosing lines formed by / the vascular bundles; fracture hard, short; odor fragrant and aromatic, / taste aromatic and bitter.

Structure - An epidermis of small, angular cells; an outer parenchyma of thick- / walled cells containing chloroplasts or chromoplasts and occasionally calcium / oxalate prisms, and bearing the large oil reservoirs, arranged mostly in two / irregular rows; an inner spongy parenchyma of branched cells surrounding / large intercellular spaces, and bearing delicate, anastomosing vascular bundles.

Powdered Bitter Orange Peel - Yellowish-gray or light brown; fragments of paren- / chyma abundant, the cells from 0.004 to 0.012 mm. thick; tracheae / very small with close spiral markings or simple pores; calcium oxalate prisms / from 0.020 to 0.045 mm. long.

Test for identity - Powdered Bitter Orange Peel is colored yellow upon the addition / of sodium hydroxide T.S..

Preparations - Tinctura Aurantii Amari, Tinctura Cinchonae Composita, Tinctura Gentianae Composita.

U.S.P., - 1930, pp. 78 & 79

Aurantii Dulcis Cortex

Sweet Orange Peel

Aurant. Dulc. Cort.

Sweet Orange Peel is the fresh, outer rind of non-artificially colored, / ripe fruit of Citrus Aurantium var. sinensis Linne (Fam. Rutaceae)

Description and physical properties--

Unground Sweet Orange Peel - The outer, orange-yellow layer recently separated / by grating or paring and consisting of epidermal cells, parenchyma, and oil / reservoirs with globules of volatile oil; odor highly fragrant; taste pungently / aromatic.

The inner, portion of the rind should be excluded.

Preparation - Tinctura Aurantii Dulcis.

SUMMARY OF U.S.P. AND N.F. DATA

OF

SWEET AND BITTER ORANGE PEEL

Official in:

U.S.P., 1820; '30 (N.Y.); '30 (Phil.); '40; '50; '60; '70; '80; '90; 1900; '10; '20; '30.

Official Latin Title:

Aurantii Cortex, U.S.P., 1820; '30 (N.Y.); '30 (Phil.); '40; '50.

Aurantii Amari Cortex, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Aurantii Dulcis Cortex, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Official English Title:

Orange Peel, U.S.P., 1820; '30 (Phil.); '40; '50.

Bitter or Seville Orange-Peel, U.S.P., 1830 (N.Y.).

Bitter Orange Peel, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Sweet Orange Peel, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Official Abbreviation:

Aurant. Amar. Cort., U.S.P., 1910; '20; '30.

Aurant. Dulc. Cort., U.S.P., 1910; '20; '30.

Official Synonym:

Official Scientific Name:

Citrus aurantium, U.S.P., 1820; '30 (N.Y.); '30 (Phil.).

Citrus vulgaris or Citrus Aurantium (De Candolle), U.S.P., 1840; '50.

Citrus vulgaris, U.S.P., 1860; '70.

Citrus Aurantium, U.S.P., 1860; '70.

Citrus vulgaris Risso, U.S.P., 1880; '90; 1900.

Citrus Aurantium Risso, U.S.P., 1880.

Citrus Aurantium Linne, U.S.P., 1890; 1900; '20; '30.

Citrus Aurantium amara Linne, U.S.P., 1910.

Citrus Aurantium sinensis Gallesio, U.S.P., 1910.

Citrus Aurantium sinensis Linne, U.S.P., 1920; '30.

Official Family:

(Nat. Ord., Aurantiaceae), U.S.P., 1880.

(Nat. Ord., Rutaceae), U.S.P., 1890.

(Fam. Rutaceae), U.S.P., 1900; '10; '20; '30.

Official Product and Part Used:

The rind of the fruit, U.S.P., 1820; '60; '70; '80; '90; 1910.

The outer rind of the fruit, U.S.P., 1830 (Phil.); '40; '50.

The rind of the fresh fruit, U.S.P., 1890.

The dried rind of the unripe fruit, U.S.P., 1900; '20; '30.

The recently separated outer rind of the ripe fruit, U.S.P., 1900.

The outer rind of the fresh, ripe fruit, U.S.P., 1910.

The fresh, outer rind of the ripe fruit, U.S.P., 1920.

The fresh, outer rind of non-artificially colored, ripe fruit, U.S.P., 1930.

Official Description:

U.S.P., 1920; '30.

Official Preparations:

Extractum Aurantii Amari Fluidum, U.S.P., 1880; '90.

Tinctura Aurantii Amari, U.S.P., 1880; '90; 1910; '20; '30.

Syrupus Aurantii, U.S.P., 1880; '90.

Tinctura Aurantii Dulcis, U.S.P., 1880; '90; 1910; '20; '30.

Fluidextractum Aurantii Amari, U.S.P., 1910.

Tinctura Cinchonae Composita, U.S.P., 1910; '20; '30.

Tinctura Gentianae Composita, U.S.P., 1910; '20; '30.

Official Average Dose:

Bitter Orange Peel.

1 Gm. (15 grains), U.S.P., 1900.

Metric, 1 Gm.--Apothecaries, 15 grains, U.S.P., 1910; '20.

Sweet Orange Peel.

1 Gm. (15 grains), U.S.P., 1900.

Official Physical Properties:

U.S.P., 1830 (N.Y.); 1920; '30.

Official Medical Operations:

Carminative, stomachic, U.S.P., 1830 (N.Y.).

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

OIL OF ORANGE (SWEET)

U.S.P., - 1890, pp. 272 & 273

Oleum Aurantii Corticis.

Oil of Orange Peel.

A volatile oil obtained by expression from the fresh peel of either / the Bitter Orange, Citrus vulgaris Risso, or the Sweet Orange, Citrus / Aurantium Linne (nat. ord. Rutaceae).

It should be kept in well-stoppered bottles, in a cool place.

A pale yellowish liquid, having the characteristic, aromatic odor of orange, / and an aromatic and, when obtained from the bitter orange, somewhat bitter / taste.

Specific gravity: about 0.850 at 15° C. (59° F.). Its optical rotation should / not be less than 95° to the right in a 100 Mm. tube, and at a temperature of / about 15° to 20°C. (59° to 68°F.).

Soluble in about four times its volume of alcohol, this solution being neutral / to litmus paper; also soluble, in all proportions, in absolute alcohol or in carbon / disulphide, and in an equal volume of glacial acetic acid.

When kept for some time, the Oil should not develop a terebinthinate odor / or taste (absence of oil of turpentine or of other oils containing pinene).

Preparations: Spiritus Aurantii. Spiritus Aurantii Compositus.
Spiritus Myrciae.

U.S.P., - 1900, p. 308

Oleum Aurantii Corticis

Oil of Orange Peel

A volatile oil obtained by expression from the fresh peel of the / Sweet Orange. It should be kept in small, well-stoppered, amber- / colored bottles, in a cool place, so as to avoid, as far as possible, the /

development of a terebinthinate odor. Oils that have developed such / an odor should not be dispensed.

A pale yellow liquid, having the characteristic, aromatic odor of orange, and / an aromatic taste.

Specific gravity: 0.842 to 0.846 at 25°C. (77°F.).

Its optical rotation should be dextrogyrate, not less than 95° in a 100 Mm. / tube, at a temperature of about 25°C. (77°F.) (absence of oil of turpentine, / etc.).

When subjected to careful fractional distillation, any Oil coming over below / 170°C. (338°F.) should not yield pinene nitrosochloride and nitrosopinene / (derived from added oil of turpentine) when tested in the following manner:

Dissolve 5 cc. of the fraction to be tested in one-half its volume of glacial / acetic acid, add 5 cc. of amyl nitrite, cool thoroughly in a freezing mixture, and / add, very gradually, 5 cc. of a mixture of equal volumes of hydrochloric acid / and glacial acetic acid. Collect any crystals which separate from the blue or / greenish liquid upon standing, on a force filter, and wash them with a little alco- / hol. Transfer the crystals to a flask, add 5 cc. of alcoholic potassium hydroxide / T.S., and heat on a water-bath fifteen minutes. Pour the solution into cold / water, collect the precipitate, and wash it with cold water. Recrystallize the / dried precipitate from alcohol, and determine the melting point of the crystals. / Nitrosopinene melts at 132°C. (269.6°F.), whereas nitrosolimonene or carvoxime / (from limonene, one of the normal constituents of Oil of Orange Peel) melts at / 72°C. (161.6°F.).

Average dose. - 0.2 cc. (3 minims).

U.S.P., - 1910, p. 287

Oleum Aurantii

Oil of Orange

Ol. Aurant.-Oleum Aurantii Corticis, U.S.P. VIII Orange Oil Oil of Sweet Orange

A volatile oil obtained by expression from the fresh peel of sweet / orange, Citrus Aurantium sinensis Gallesio (Fam. Rutaceae), and its / varieties. Preserve it in small, well-stoppered, amber-colored bottles, in a cool place, protected from light. Oil of Orange having a terebinthinate odor is not to be dispensed.

Oil of Orange is a yellow liquid having the characteristic odor and taste of / orange peel.

Specific gravity: 0.842 to 0.846 at 25°C.

Refractive Index: 1.4723 to 1.4737 at 20°C. (see Part II, Test No. 22)

Its optical rotation is not less than +94° in a 100 mm. tube at 25°C. (see Part II, Test No. 21).

Introduce 50 mils of Oil of Orange into a 200 mil, three-bulb Ladenburg / flask of approximately the following dimensions: The lower or main bulb 6 cm. / in diameter with the smaller condensing bulbs 3.5 cm., 3.0 cm. and 2.5 cm. in / diameter, respectively; with the distance from the bottom of the flask to the side / arm 20 cm. Then distil the Oil at the rate of one drop per second until 5 mils / has been obtained. The angle of rotation of the distillate thus obtained is / equal to or only slightly greater than that of the original Oil, and the refractive / index of this portion, at 20°C., is not less than 0.0008 nor more than 0.0015 / lower than that of the original Oil at 20°C.

Preparation-Spiritus Aurantii Compositus.

Average Dose-Metric, 0.2 mil-Apothecaries, 3 minims.

U.S.P., - 1920, pp. 251 & 252

Oleum Aurantii

Oil of Orange

Ol. Aurant.-Orange Oil, Oil of Sweet Orange

The volatile oil obtained by expression from the fresh peel of the ripe / fruit of Citrus Aurantium var. sinensis Linne (Fam. Rutaceae). Oil of / Orange which has a terebinthinate odor must not be dispensed.

Description and physical properties--A yellow liquid, having the characteristic / odor and taste of the outer part of sweet orange peel.

Tests for identity and purity--The Oil does not form a clear solution with 2 volumes / of 90 per cent alcohol, by volume, (washed citrus oils). It is soluble in all / proportions in dehydrated alcohol and in carbon disulphide, and in an equal / volume of glacial acetic acid.

Specific gravity: 0.842 to 0.846 at 25°C.

Optical rotation: not less than +94° and not more than +99° in a 100 mm. / tube at 25°C., page 447.

Refractive index: 1.4723 to 1.4737 at 20°C., page 456.

A solution of recently expressed Oil of Orange in dehydrated alcohol is neu- / tral to moistened litmus paper.

The Oil meets the requirements of the test for heavy metals in volatile oils. / page 439.

A 25 Gm. portion of Oil of Orange evaporated to dryness at a temperature / not exceeding 100°C. yields not less than 2 per cent of residue (washed / citrus oils).

Place 50 cc. of Oil of Orange in a 250 cc. three-bulb Ladenburg flask of / approximately the following dimensions: The lower or main bulb, 6 cm. in / diameter, with the smaller condensing bulbs 3.5 cm., 3.0 cm. and 2.5 cm., / respectively, in diameter; the distance from the bottom

of the flask to the side / arm, 20 cm. Distil the Oil at the rate of 1 drop per second until the distillate / measures 5 cc.: the angle of rotation of the distillate is equal to that of the / original Oil, or does not differ more than 2 degrees from it, and the refractive / index of the distillate is not less than 0.0008 and not more than 0.0015 lower / than that of the original Oil at 20°C.

Preserve in small, completely filled, well-stoppered, amber-colored bottles, in a / cool place, protected from light.

Preparation-Spiritus Aurantii Compositus.

Average Dose - Metric, 0.1 cc. - Apothecaries, 1½ minims.

U.S.P., - 1930, p. 249

Oleum Aurantii

Oil of Orange

Ol. Aurant. - Orange Oil, Oil of Sweet Orange

Oil of Orange is the volatile oil obtained by expression from the fresh / peel of the ripe fruit of Citrus Aurantium var. sinensis Linne (Fam. / Rutaceae).

Note--Oil of Orange which has a terebinthinate odor must not be used or dispensed.

Description and physical properties--An intense yellow, orange or deep orange / liquid, having the characteristic odor and taste of the outer past of sweet / orange peel.

Tests for identity and purity--The Oil does not form a clear solution with 2 volumes / of 90 per cent alcohol, by volume (washed citrous oils). It is soluble in all / proportions in dehydrated alcohol and in carbon disulfide, and in an equal / volume of glacial acetic acid.

Specific gravity: 0.842 to 0.846 at 25°C.

Optical rotation: not less than + 94° and not more than +99° in a

100-mm. / tube at 25°C., page 459.

Refractive index: 1.4723 to 1.4737 at 20°C., page 454.

A solution of recently expressed Oil of Orange in dehydrated alcohol is / neutral to moistened litmus paper.

The Oil meets the requirements of the test for heavy metals in volatile oils, / page 447.

Evaporate a 5-Gm. portion of Oil of Orange to constant weight at a tem- / perature not exceeding 100°C.: the residue weighs not less than 0.1 Gm. / (washed citrus oils).

Place 50 cc. of Oil of Orange in a 250-cc., three-bulb Landenburg flask of / approximately the following dimensions: the lower or main bulb 6 cm. in / diameter, with the smaller condensing bulbs 3.5 cm., 3.0 cm. and 2.5 cm., / respectively, in diameter; the distance from the bottom of the flask to the / side arm 20 cm. Distil the Oil at the rate of 1 drop per second until the / distillate measures 5 cc.: the specific rotation of the distillate is equal to / that of the original Oil, or does not differ from it by more than 2 degrees,/ and the refractive index of the distillate is not less than 0.0008 and not more / than 0.0015 lower than that of the original Oil at 20°C.

Storage--Preserve Oil of Orange in well-filled bottles, in a cool place and protected / from light.

Preparation--Spiritus Aurantii Compositus.

Average Dose--Metric, 0.1 cc. - Apothecaries, 1½ minims.

SUMMARY OF U.S.P. AND N.F. DATA

OF

OIL OF ORANGE (SWEET)

Official in:

U.S.P., 1890; 1900; '10; '20; '30.

Official Latin Title:

Oleum Aurantii Corticis, U.S.P., 1890; 1900.

Oleum Aurantii, U.S.P., 1910; '20; '30.

Official English Title:

Oil of Orange Peel, U.S.P., 1890; 1900.

Oil of Orange, U.S.P., 1910; '20; '30.

Official Abbreviation:

Ol. Aurant., U.S.P., 1910; '20; '30.

Official Synonyms:

Oleum Aurantii Corticis, U.S.P., 1910.

Orange Oil, U.S.P., 1910; '20; '30.

Oil of Sweet Orange, U.S.P., 1910; '20; '30.

Official Scientific Name:

Citrus vulgaris Risso or Citrus Aurantium Linne, U.S.P., 1890.

(Citrus Aurantium Linne, U.S.P., 1900.)

Citrus Aurantium sinensis Gallesio and its varieties, U.S.P., 1910.

Citrus Aurantium var. sinensis Linne, U.S.P., 1920; '30.

Official Family:

(Nat. Ord., Rutaceae), U.S.P., 1890.

(Fam. Rutaceae), U.S.P., (1900); '10; '20; '30.

Official Product and Part Used:

A volatile oil obtained by expression from the fresh peel, U.S.P., 1890; 1900; '10.

The volatile oil obtained by expression from the fresh peel of the ripe fruit, U.S.P., 1920; '30.

Official Description:

U.S.P., 1920; '30.

Official Preparations:

Spiritus Aurantii, U.S.P., 1890.

Spiritus Aurantii Compositus, U.S.P., 1890; 1910; '20; '30.

Spiritus Myrciae, U.S.P., 1890.

Official Average Dose:

0.2 cc. (3 minims), U.S.P., 1900.

Metric, 0.2 mil.-Apothecaries, 3 minims, U.S.P., 1910.

Metric, 0.1 cc. -Apothecaries, 1½ minims, U.S.P., 1920; '30.

Official Physical Properties:

U.S.P., 1920; '30.

Official Medical Operations:

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

OIL OF ORANGE (BITTER)

N.F., - 1916, p. 322

Oleum Aurantii Amari

Oil of Bitter Orange

Ol. Aurant. Amar.

A volatile oil obtained by expression from the fresh peel of the bitter / orange, Citrus Aurantium amara Linne (Fam. Rutaceae). Preserve it in / small, well-stoppered, amber-colored bottles, in a cool place, protected / from light. Oil of Bitter Orange having a terebinthinate odor is not to / be dispensed.

Oil of Bitter Orange is a pale yellow liquid, having the characteristic, aromatic / odor of the Seville orange, and an aromatic somewhat bitter taste.

Soluble in 4 volumes of alcohol, the solution being neutral to litmus paper. Also / soluble in all proportions in dehydrated alcohol and in an equal volume of glacial / acetic acid.

Specific gravity: 0.842 to 0.848 at 25°C.

It is dextrorotatory, the angle of rotation varying from +92° to +98°; in a 100 / mm. tube, at 25°C.

Introduce 50 mils. of Oil of Bitter Orange, into a 200 mil, three-bulb, fractionating / flask. Distil the Oil at the rate of 2 mils. per minute until a distillate measuring / 5 mils has been collected. The angle of rotation of this distillate is equal to, or / only slightly lower than, that of the original Oil.

Average Dose - Metric, 0.2 mils - Apothecaries, 3 minims.

N.F., - 1926, p. 366

Oleum Aurantii Amari

Oil of Bitter Orange

Ol. Aurant. Amar.

A volatile oil obtained by expression from the fresh peel of the bitter / orange, Citrus Aurantium Linne (Fam. Rutaceae).

Description and physical properties.--Oil of Bitter Orange is a pale yellow liquid, / having the characteristic, aromatic odor of the Seville orange, and an aromatic / somewhat bitter taste.

Soluble in 4 volumes of alcohol, the solution being neutral to litmus paper. / Also soluble in all proportions in dehydrated alcohol and in an equal volume of / glacial acetic acid.

Tests for identity and purity: Specific gravity: 0.842 to 0.848 at 25°C.

It is dextrorotatory, the angle of rotation varying from +88° to +98°, in a 100 / mm. tube, at 25°C.

Introduce 50 cc. of Oil of Bitter Orange into a 200 cc. three-bulb, fractionating / flask of approximately the following dimensions: the lower or main bulb 6 cm. / with the smaller condensing bulbs 3.5 cm., 3.0 cm. and 2.5 cm. in diameter, / respectively, and the distance from the bottom to the side arm 20 cm. Distil / the Oil at the rate of 2 cc. per minute until a distillate measuring 6 cc. has / been collected. The angle of rotation of this distillate is equal to, or only slightly / lower than, that of the original Oil.

Preserve it in small, well-stoppered, amber-colored bottles, in a cool place, pro- / tected from light. Oil of Bitter Orange having a terebinthinate odor is not to be / dispensed.

Preparation: Elixir Aurantii Amari.

Average Dose - Metric, 0.1 cc. - Apothecaries, 1½ minims.

N.F., - 1936, p. 268

Oleum Aurantii Amari

Oil of Bitter Orange

Ol. Aurant. Amar.

Oil of Bitter Orange is a volatile oil obtained by expression from the / fresh peel of the fruit of Citrus Aurantium Linne (Fam. Rutaceae)

Description and physical properties.--Oil of Bitter Orange is a pale yellow or yellowish brown liquid, with the char- / acteristic, aromatic odor of the Seville orange, and an aromatic, somewhat bitter / taste. Oil of Bitter Orange having a terebinthinate odor is not to be dispensed. /

The Oil is soluble in 4 volumes of alcohol, in all proportions in dehydrated / alcohol, and in an equal volume of glacial acetic acid.

The specific gravity of the Oil at 25°C. is between 0.845 and 0.851.

The angle of optical rotation of the Oil in a 100 mm. tube at 25°C. is between / +88° and +98°.

Tests for identity and purity.

An alcoholic solution of Oil of Bitter Orange is neutral to litmus paper.

Introduce 50cc. of the Oil into a 200-cc., 3-bulb fractionating flask of approxi- / mately the following dimensions: the lower or main bulb 6 cm., with the smaller / condensing bulbs 3.5 cm., 3.0 cm., and the / distance from the bottom to the side arm, 20 cm. Distil the Oil at the rate of 2 cc. / per minute until a distillate measuring 6 cc. has been collected: the angle of rota- / tion of this distillate is equal to, or only slightly lower than, that of the original Oil.

Storage.

Keep the Oil in small, well-closed containers, in a cool place, protected from light.

Preparation: Elixir Aurantii Amari.

Average Dose: Metric, 0.1 cc. - Apothecaries, 1½ minims.

SUMMARY OF U.S.P. AND N.F. DATA

OF

OIL OF ORANGE (BITTER)

Official in:

N.F., 1916; '26; '36.

Official Latin Title:

Oleum Aurantii Amari, N.F., 1916; '26; '36.

Official English Title:

Oil of Bitter Orange, N.F., 1916; '26; '36.

Official Abreviation:

Ol. Aurant. Amar., N.F., 1916; '26; '36.

Official Synonym:

Official Scientific Name:

Citrus Aurantium amara Linne, N.F., 1916.

Citrus Aurantium Linne, N.F., 1926; '36.

Official Family:

(Fam. Rutaceae), N.F., 1916; '26; '36.

Official Product and Part Used:

A volatile oil obtained by expression from the fresh peel, N.F., 1916; '26.

A volatile oil obtained by expression from the fresh peel of the fruit, N.F., 1936.

Official Description:

N.F., 1926; '36.

Official Preparation:

Elixir Aurantii Amari, N.F., 1926; '36.

Official Average Dose:

Metric, 0.2 mil. - Apothecaries, 3 minims, N.F., 1916.

Metric, 0.1 cc. - Apothecaries, 1½ minims, N.F., 1926; '36.

Official Physical Properties:

N.F., 1926; '36.

Medical Operations:

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

WATER OF ORANGE

U.S.P., - 1820, pp. 84 & 85

Aqua Aurantii Corticis.	Water of Orange Peel.
RX. Aurantii corticis recentis libras duas;	Take of Fresh orange peel, two pounds;
His effundatur aquae satis ad evitandum empyreuma. Post / macerationem debitam distillentur octantes decem.	Pour upon it water enough to prevent empyreuma, and after / due maceration distil ten pints.

U.S.P., - 1830 (N.Y.), p. 78

Aqua Aurantii Corticis.	Water of Orange Peel.
RX. Aurantii corticis recentis libras duas;	Take of Fresh orange peel, two pounds;
His effundatur aquae satis ad evitandum / empyreuma. Post macerationem debitam / distillentur octantes decem.	Pour upon it water enough to prevent / empyreuma, and after due maceration dis- / til ten pints.

U.S.P., - 1830 (Phil.), pp. 68 & 69

Aqua Aurantii Corticis.	Water of Orange Peel.
RX. Aurantii Corticis recentis libras duas;	Take of Fresh Orange Peel, two pounds;
Aquae quantum satis sit; Alcoholis Diluti fluiduncias quatuor.	Water a sufficient quantity; Diluted Alcohol four fluidounces.
Aurantii Cortici affunde tantum Aquae, ut, post de- / stillationem, supersit quod satis sit ad prohibendum em- / pyreuma. Destillet congius, eique adjice Alcohol Di- / lutum.	Pour upon the Orange Peel so much Water, that, af- / ter the distillation, sufficient may remain to prevent / empyreuma. Then distil a gallon, and add the Diluted / Alcohol.

U.S.P., - 1860, p.99

Aqua Aurantii Florum.

Orange Flower Water.

Take of Orange Flowers forty-eight troyounces;

Water sixteen pints.

Mix them, and distil eight pints.

U.S.P., - 1870, p. 92

Aqua Aurantii Florum.

Orange Flower Water.

Take of recent Orange Flowers forty-eight troyounces.

Water sixteen pints.

Mix them, and, by means of steam, distil eight pints.

U.S.P., - 1880, p. 42

Aqua Aurantii Florum.

Orange Flower Water.

Recent Orange Flowers, forty parts.....40

Water, two hundred parts.....200

To make one hundred parts.....100

Mix them, and, by means of steam, distil one hundred (100) parts. / Keep the product in well-stoppered bottles, excluded from light.

Orange Flower Water should remain unaffected by hydrosulphuric acid or sul- / phide of ammonium (metallic impurities), and should not be mucilaginous.

U.S.P., - 1890, p. 48

Aqua Aurantii Florum.

Orange Flower Water.

Stronger Orange Flower Water,

Distilled Water, of each, one volume.

Mix them immediately before use.

Preparation: Syrupus Aurantii Florum.

U.S.P., - 1890, p. 48

Aqua Aurantii Florum Fortior.

Stronger Orange Flower Water.

(Aqua Aurantii Florum, Pharm. 1880. Triple Orange Flower / Water.

Water saturated with the volatile oil of fresh Orange Flowers, ob- / tained as a by-product in the distillation of the Oil of Orange Flowers.

It should be kept in loosely-stoppered bottles in a dark place.

Stronger Orange Flower Water should be neutral to litmus paper, and possess / a strong odor of fresh orange flowers.

It should be colorless and clear, or only faintly opalescent, not mucilaginous, / and give no reaction with hydrogen sulphide T.S. or ammonium sulphide T.S. / (absence of metallic impurities).

Preparation: Aqua Aurantii Florum.

U.S.P., - 1900, p. 52

Aqua Aurantii Florum

Orange Flower Water

Stronger Orange Flower Water,

Distilled Water, each, one volume.

Mix them immediately before use.

Average dose. - 16 cc. (4 fluidrachms).

U.S.P., - 1900, p. 52

Aqua Aurantii Florum Fortior

Stronger Orange Flower Water

Water saturated with the volatile oil of fresh orange flowers / obtained as a byproduct in the distillation of the oil of orange / flowers. It should be kept in bottles loosely stoppered with a pledget / of purified cotton, and in a dark place.

Stronger Orange Flower Water should be neutral to litmus paper, and have / a strong odor of fresh orange flowers.

It should be colorless and clear, or only faintly opalescent, not mucilaginous, / and should give no reaction with hydrogen sulphide T.S. or ammonium sul- / phide T.S. (absence of metallic impurities).

Average dose. - 8 cc. (2 fluidrachms).

U.S.P., - 1910, p. 55

Aqua Aurantii Florum

Orange Flower Water

Aq. Aurant. Flor.

Stronger Orange Flower Water,

Distilled Water, recently boiled, each, one volume.

Mix them immediately before use.

Orange Flower Water complies with the tests for identity and purity given / under Aqua Aurantii Florum Fortior.

Preparation - Syrupus Aurantii Florum.

U.S.P., - 1910, p. 55

Aqua Aurantii Florum Fortior

Stronger Orange Flower Water

Aq. Aurant. Flor. Fort.

The saturated aqueous distillate prepared by distilling the fresh / flowers of Citrus Aurantium amara Linne (Fam. Rutaceae) with water. / Preserve it in bottles stoppered with a pledget of purified cotton and in / a dark, cool place.

Stronger Orange Flower Water is colorless and clear or only faintly opalescent, / and possesses a strong and pleasant odor and taste of orange blossoms, and / must be free from empyreuma, mustiness, or mucoid growths.

It is neutral or only slightly acid to litmus, and 100 mils, when evaporated / to dryness on a water bath and the residue subsequently dried in an oven to / constant weight at 100°C., yields not more than 0.001 Gm. of residue. It / gives no reaction with hydrogen sulphide T.S. or with sodium sulphide T.S. / (metallic impurities).

Preparation - Aqua Aurantii Florum.

U.S.P., 1920, p. 57

Aqua Aurantii Florum

Orange Flower Water

Aq. Aurant. Flor. - Aqua Aurantii Florum Fortior U.S.P. IX

A saturated solution of the odoriferous principles of the flowers of / Citrus Aurantium (var. amara) Linne (Fam. Rutaceae), prepared by dis- / tilling the fresh flowers with water and separating the clear, saturated / portion of the distillate. Its odor is best preserved by allowing a limited / access of fresh air to the container.

Description and physical properties - Nearly colorless or only faintly / opalescent, possessing a strong, pleasant odor and taste of orange blossoms. / It must be free from empyreuma, mustiness, or fungoid growths.

Tests for purity - Orange Flower Water is neutral or only slightly acid to litmus / paper.

Evaporate 100 cc. of the Water on a water bath, and dry the residue to con- / stant weight at 100°C.: not more than 0.001 Gm. of residue remains.

Orange Flower Water shows no reaction with hydrogen sulphide T.S. or / with sodium sulphide T.S. (metallic impurities).

Preparation - Syrupus Aurantii Florum.

U.S.P., - 1930, p. 64

Aqua Aurantii Florum

Orange Flower Water

Aq. Aurant. Flor.

Orange Flower Water is a saturated solution of the odoriferous / principles of the flowers of Citrus Aurantium Linne (Fam. Rutaceae), / prepared by distilling the fresh flowers with water and separating the / excess volatile oil from the clear, aqueous portion of the distillate. Its / odor is best preserved by allowing a limited access of fresh air to the container.

Description and physical properties - Nearly colorless, clear or only faintly opales - / cent, and possessing the pleasant odor and taste of orange blossoms.

It must be free from empyreuma, mustiness, and fungoid growths.

Tests for purity - Orange Flower Water is neutral or only slightly acid to litmus paper.

Evaporate 100 cc. of the Water on a water bath, and dry the residue to / constant weight at 100°C.: not more than 0.001 Gm. of residue remains.

Orange Flower Water does not respond to the test for heavy metals, page 447.

Preparation - Syrupus Aurantii Florum.

SUMMARY OF U.S.P. AND N.F. DATA

OF

WATER OF ORANGE

Official in:

U.S.P., 1820; '30 (N.Y.); '30 (Phil.); '60; '70; '80; '90; 1900; '10; '20; '30.

Official Latin Title:

Aqua Aurantii Corticis, U.S.P., 1820; '30 (N.Y.); '30 (Phil.).

Aqua Aurantii Florum, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Aqua Aurantii Florum Fortior, U.S.P., 1890; 1900; '10.

Official English Title:

Water of Orange Peel, U.S.P., 1820; '30 (N.Y.); '30 (Phil.).

Orange Flower Water, U.S.P., 1860; '70; '80; '90; 1900; '10; '20; '30.

Stronger Orange Flower Water, U.S.P., 1890; 1900; 1910.

Official Abbreviation:

Aq. Aurant. Flor., U.S.P., 1910; '20; '30.

Aq. Aurant. Flor. Fort., U.S.P., 1910.

Official Synonyms:

Aqua Aurantii Florum, U.S.P., 1890.

Triple Orange Flower Water, U.S.P., 1890.

Aqua Aurantii Florum Fortior, U.S.P., 1920.

Official Scientific Name:

Citrus Aurantium amara Linne, U.S.P., 1910.

Citrus Aurantium (var. amara) Linne, U.S.P., 1920.

Citrus Aurantium Linne, U.S.P., 1930.

Official Family:

(Fam. Rutaceae), U.S.P., 1910; '20; '30.

Official Product and Part Used:

Of fresh peel, U.S.P., 1820; '30 (N.Y.); '30 (Phil.).

Of flowers, U.S.P., 1860.

Of recent flowers, U.S.P., 1870; '80.

Water saturated with the volatile oil of fresh flowers, U.S.P., 1890; 1900.

The saturated aqueous distillate from the fresh flowers, U.S.P., 1910.

A saturated solution of the odoriferous principles of the flowers, U.S.P., 1920, '30.

Official Description:

U.S.P., 1920; '30.

Official Preparations:

Syrupus Aurantii Florum, U.S.P., 1890; 1910; '20; '30.

Aqua Aurantii Florum, U.S.P., 1890; 1010.

Official Average Dose:

Orange Flower Water.

16 cc. (4 fluidrachms), U.S.P., 1900.

Stronger Orange Flower Water.

8 cc. (2 fluidrachms), U.S.P., 1900.

Official Physical Properties:

U.S.P., 1920; '30.

Official Medical Operations:

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

ORANGE FLOWERS

U.S.P., - 1860, p. 18

Aurantii Flores. Orange Flowers.

The flowers of Citrus Aurantium, and of Citrus / vulgaris.

U.S.P., - 1870, p. 20

Aurantii Flores. Orange Flowers.

The flowers of Citrus Aurantium, and of Citrus / vulgaris.

U.S.P., - 1880, p. 51

Aurantii Flores.

Orange Flowers.

The partly expanded, fresh flower of Citrus vulgaris and Citrus Auran- / tium Risso (Nat. Ord., Aurantiaceae).

When it is desired to keep fresh Orange Flowers for some time, they / may be preserved by mixing them well with half their weight of chloride / of sodium, pressing the mixture in a suitable jar and keeping it, well- / closed, in a cool place.

About half an inch (12 millimeters) long; calyx small, cup-shaped, five-toothed; / petals five, oblong, obtuse, rather fleshy, white and glandular-punctate; stamens / numerous, in about three sets; ovary globular, upon a small disk, with cylin- / drical style, and a globular stigma; odor very fragrant; taste aromatic and some- / what bitter.

Preparation: Aqua Aurantii Florum

SUMMARY OF U.S.P. AND N.F. DATA

OF

ORANGE FLOWERS

Official in:

U.S.P., 1860; '70; '80.

Official Latin Title:

Aurantii Flores, U.S.P., 1860; '70; '80.

Official English Title:

Orange Flowers, U.S.P., 1860; '70; '80.

Official Abbreviation:

———————

Official Synonym:

———————

Official Scientific Name:

Citrus Aurantium and Citrus vulgaris, U.S.P., 1860; '70.

Citrus vulgaris and Citrus Aurantium Risso, U.S.P., 1880.

Official Family:

(Nat. Ord., Aurantiaceae), U.S.P., 1880.

Official Product and Part Used:

The flowers, U.S.P., 1860; '70.

The partly expanded, fresh flowers, U.S.P., 1880.

Official Description:

———————

Official Preparation:

Aqua Aurantii Florum, U.S.P., 1880.

Official Average Dose:

———————

Official Physical Properties:

Official Medical Operations:

UNITED STATES PHARMACOPOEIA (O-XI)

(1820 - 1930)

and

NATIONAL FORMULARY (I-VI)

(1888 - 1936)

HISTORY

OF

OIL OF ORANGE FLOWERS

U.S.P., - 1880, p. 234

Oleum Aurantii Florum.

Oil of Orange Flowers.

(Oil of Neroli)

A volatile oil distilled from fresh Orange Flowers.

A yellowish or brownish, thin liquid, having a very fragrant odor of orange flow- / ers, an aromatic, somewhat bitter taste, and a neutral reaction. Sp. gr. 0.850 to / 0.890. It is soluble in an equal weight of alcohol. If a little alcohol be poured / on the surface of the Oil and the mixture gently undulated, a bright, violet fluor- / escence will be observed.

Preparation: Spiritus Odoratus.

U.S.P., - 1890, p. 273

Oleum Aurantii Florum.

Oil of Orange Flowers.

(Oil of Neroli)

A volatile oil distilled from the fresh flowers of the Bitter Orange, / Citrus vulgaris Risso(Nat. Ord. Rutaceae).

It should be kept in well-stoppered bottles, in a cool place, protected / from light.

A yellowish or brownish, thin liquid, having a very fragrant, somewhat bitter taste.

Specific gravity: 0.875 to 0.890 at 15°C. (59°F.).

Soluble in an equal volume of alcohol, the solution being neutral to litmus / paper.

If a little alcohol be poured on the surface of the Oil, and the mixture / gently undulated, a bright, violet fluorescence will usually be observed.

In contact with a saturated solution of sodium bisulphite it assumes a / handsome and permanent purplish-red color.

N.F., - 1916, pp. 322 & 323

Oleum Aurantii Florum

Oil of Orange Flowers

Ol. Aurant. Flor. Oil of Neroli

A volatile oil distilled from the fresh flowers of the bitter orange, / Citrus Aurantium amara Linne (Citrus vulgaris Risso, Citrus Bigaradia / Risso) (Fam. Rutaceae).

Preserve it in small, amber-colored, well-stop- / pered bottles in a cool place, protected from light.

Oil of Orange Flowers is a pale yellow, slightly fluorescent, neutral liquid, having / a distinctive fragrant odor similar to that of orange blossoms and an aromatic, at / first sweet then somewhat bitter taste.

It is soluble in an equal volume of alcohol, the solution having a violet fluorescence / and a neutral reaction to litmus paper. Also soluble in two volumes of 80 per / cent. alcohol, the solution becoming cloudy on the further addition of alcohol of the / same percentage.

Specific gravity: 0.868 to 0.880 at 25°C.

It is dextrorotatory, the angle of rotation varying from +1° 30' to 5°, in a 100 / mm. tube, at 25°C..

When agitated with a concentrated solution of sodium bisulphate it assumes a / permanent purple red color.

N.F., - 1926, pp. 366 & 367

Oleum Aurantii Florum

Oil of Orange Flowers

Ol. Aurant. Flor. Oil of Neroli

A volatile oil distilled from the fresh flowers of the bitter orange, / Citrus Aurantium Linne (Citrus vulgaris Risso, Citrus Bigaradia Risso) / (Fam. Rutaceae).

Description and physical properties.--Oil of Orange Flowers is a pale yellow, / slightly fluorescent, neutral liquid, having a distinctive fragrant odor, similar to / that of orange blossoms, and an aromatic, at first sweet then somewhat bitter taste.

Tests for identity and purity: It is soluble in an equal volume of alcohol, the solu- / tion having a violet fluorescence and a neutral reaction to litmus paper. Also / soluble in two volumes of 80 per cent alcohol, the solution becoming cloudy / on the further addition of alcohol of the same percentage.

Specific gravity: 0.868 to 0.880 at 25°C.

It is dextrorotatory, the angle of rotation varying from +1°30' to +5° in a / 100 mm. tube, at 25°C.

Preserve it in small, well-stoppered, amber-colored bottles, in a cool place, pro- / tected from light.

Preparation: Spiritus Odoratus.

N.F., - 1936, p. 269

Oleum Aurantii Florum

Oil of Orange Flowers

Ol. Aurant. Flor. Oil of Neroli

Oil of Orange Flowers is a volatile oil distilled from the fresh flowers of / Citrus Aurantium Linne (Fam. Rutaceae).

Description and physical properties.

Oil of Orange Flowers is a pale yellow, slightly fluorescent, neutral liquid, which / becomes a reddish brown on exposure to light and air. It has a distinctive, fragrant / odor, similar to that of orange

blossoms, and an aromatic, at first sweet, then / somewhat bitter, taste. The Oil may become turbid or solid at low temperatures.

The Oil is soluble in an equal volume of alcohol and in 2 volumes of 80 per cent / alcohol, the solution becoming cloudy on the further addition of alcohol of the same / percentage.

The specific gravity of the Oil at 25°C. is between 0.863 and 0.880.

The angle of optical rotation of the Oil in a 100 mm. tube at 25°C. is between / +1° 30' and +9° 8'.

Tests for identity and purity.

An alcoholic solution of the Oil has a violet fluorescence, and a neutral reaction / to litmus paper.

Storage.

Keep the Oil in small, well-closed containers, in a cool place, protected from light.

Preparation: Spiritus Odoratus.

SUMMARY OF U.S.P. AND N.F. DATA

OF

OIL OF ORANGE FLOWERS

Official in:

U.S.P., 1880;'90.

N.F., 1916; '26; '36.

Official Latin Title:

Oleum Aurantii Florum, U.S.P., 1880; '90.

N.F., 1916; '26; '36.

Official English Title:

Oil of Orange Flowers, U.S.P., 1880; '90.

N.F., 1916; '26; '36.

Official Abbreviation:

Ol. Aurant. Flor., N.F., 1916; '26; '36.

Official Synonym:

Oil of Neroli, U.S.P., 1880; '90.

N.F., 1916; '26; '36.

Official Scientific Name:

Citrus vulgaris Risso, U.S.P., 1890.

Citrus Aurantium amara Linne (Citrus vulgaris Risso, Citrus Bigardia Risso), N.F., 1916.

Citrus Aurantium Linne (Citrus vulgaris Risso, Citrus Bigardia Risso), N.F., 1926.

Citrus Aurantium Linne, N.F., 1936.

Official Family:

(Nat. Ord., Rutaceae), U.S.P., 1890.

(Fam. Rutaceae), N.F., 1916; '26; '36.

Official Product or Part Used:

A volatile oil distilled from fresh flowers, U.S.P., 1880.

A volatile oil distilled from the fresh flowers, U.S.P., 1890.

N.F., 1916;
'26; '36.

Official Description:

N.F., 1926; '36.

Official Preparation:

Spiritus Odoratus, U.S.P., 1880.

N.F., 1926; '36.

Official Average Dose:

Official Physical Properties:

N.F., 1926; '36.

Official Medical Operations:

APPROVED BY W.O. Richtmann

Prof. of Pharmacognosy