BIBLIOGRAPHY

OF

MANNA

BY

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A THESIS SUBMITTED FOR THE DEGREE OF

BACHELOR OF SCIENCE
(Pharmacy)

UNIVERSITY OF WISCONSIN

1936

Moses ca. 1450 B.C.

(Manna.)

Exodus, Chap. 16, verse 4.

"And the Lord said to Moses: Behold I will rain bread from heaven for you: let the people go forth and gather what is sufficient for every day, that I may prove them whether they will walk in my law or no."

Moses ca. 1450 B.C.

(Manna.)

Exodus, Chap. 16, verses 13-15. (Cath. Ency., v.9, p.604; Compt. Rend., 53, p.71; Ency. Brit., ed. 14, v.14; Amer., v.13; Jour. de Pharm. et de Chim., 14, p.120; Amer. Jour. Pharm., 34, p.71; Phar. Jour. 2 (20) p.169; Ibid., 92, p.174; Chem. & Drugg. 64, p.89.)

"And in the morning, a dew lay round about the camp.

"And when it had covered the face of the earth, it appeared in the wilderness, small, and as it were beaten with a pestle, like unto the hoar-frost on the ground.

"And when the children of Israel saw it, they said one to another: Manhu! which signifieth: What is this! for they knew not what it was. And Moses said to them: This is the bread which the Lord hath given you to eat."

Moses ca. 1450 B.C.

Manna.

Exodus, Chap. 16, verses 31 & 33.

"And the house of Israel called the name thereof Manna: and it was like coriander seed white, and the taste thereof like to flour with honey.

"And Moses said to Aaron: Take a vessel and put manna into it, as much as a gomor can hold: and lay it up before the Lord to keep unto your generations."

Moses ca. 1450 B.C.

Manna.

Exodus, Chap. 16, verse 35.

"And the children of Israel ate manna forty years, till they came to a habitable land: with this meat were they fed, until they reached the borders of the land of Chanaan."

Moses ca. 1450 B.C.

Manna.

Numbers, Chap. 11, verses 6-9.

"Our soul is dry, our eyes behold nothing else but manna.

"Now the manna was like coriander-seed, of the color of bdellium.

"And the people went about, and gathering it, ground it in a mill, or beat it in a mortar, and boiled it in a pot, and made cakes thereof of the taste of bread tempered with oil.

"And when the dew fell in the night upon the camp, the manna also fell with it."

Asaph ca. 1000 B.C.

Manna.

Psalms, Psalm 77, verses 23 & 24. (Exod., Chap. 16, verse 14.)

"And He had commanded the clouds from above, and had opened the doors of heaven.

"And had rained down manna upon them to eat, and had given them the bread of heaven."

Eliachim ca. 650 B.C.

(Manna.)

Judith, Chap., 5, verse 15. (Exod., Chap., 16, verse 35.)

"There bitter fountains were made sweet for them to drink and for forty years they received food from heaven."

Esdras ca. 536 B.C.

Manna.

2 Esd., Chap.9, verses 20 & 21. (Exod., Chap. 16, verse 35.)

"And Thou gavest them thy good Spirit to teach them, and thy manna Thou didst not withhold from their mouth, and Thou gavest them water for their thirst.

"Forty years didst thou feed them in the desert, and nothing was wanting to them: their garments did not grow old and their feet were not worn."

Theophrastus 373-288 B.C.

(de Melle.)

Fragment., ed., Heinsius. (Adams, Gen. Works of Hippocrates, v. 2, p.800; Adams, The Seven Books of Paulus Aegineta, v.1, p.179.)

(A sweet exudation formed on the juniper tree in hot countries.)

The original was not available.

Hippocrates (350 B.C.)

(Cedar Honey.)

De Ulceribus, Edit. Foefii, p.876. (Adams, The Genuine Works of, v.2, p.80; Phil. Trans.,v.43, p.90.)

Gives a little cedar honey (sweet exudation forming on juniper tree in hot countries) mixed with wine, etc. as a medicine for ulcers.

The original was not available.

Actuarius, J. _____

(Manna.)

Method. Medend. L.5.c.8. (Phil. Trans., v.43, p.93.)

(Mentions "manna" only once, as a purg. somewhat stronger than Cassia.)

The original was not available.

Mylii, Conf.

(Manna.)

Delic. Physic, v.2, Sect. 20, p.731. (Triller, Dispens. Pharm., v.1, p.259.)

The original was not available.

Pliny, C.S. 40-79

(Bdellium.)

Liber 1, 21, c.9. (Numbers, Chap. 11, verse 7.)

(Bdellium was the color of a man's nail, white, and bright.)

The original was not available.

St. John ca.95

Manna.

Latin Vulgate, 1582. (Compston, Dictionary of the Bible, v.1, p.576; Cath. Ency. v.9, p.604.)

Ver. 31: "Our fathers did eat manna in the desert as it is written: He gave them bread from heaven to eat."

Ver. 49: "Your fathers did eat manna in the desert and are dead."

Ver. 59: "This is the bread that came down from heaven. Not as your fathers did eat manna and are dead. He that eateth this bread shall live forever."

Galenus, C. (ca. 200)

(De Simpl.)

Lib. 3 De alimentis. (Tschirch, Handbuch der Pharm., 1 ed., v. 2, p.111; Adams, The Seven Books of Paulus Aegineta, v.1, p. 178; Adams, the Gen. Works of Hippocrates, v.2, p.800; Phil. Trans., v.43, p.91.)

("Jupiter melle pluit." Gives climatic conditions favoring, opinion of naturalists of that time as to cause and frequency of occurrence in Mt. Lebanon.)

The original was not available.

Beithar, Ebn. ca. 1248

(Oak Manna.)

Tacuini Sanitatis, Ed. Sontheimer, v.1, p.375. (Flückiger & Hanbury, Pharmacographia, 2 ed., p.415.)

(A saccharine substance exudes from the oak.)

The original was not available.

Pegolotti (ca. 1340)

(Messina and Palerma.)

——— (Year-bk. Brit. pharm. Conf., 7, p.82.)

(Names manna apparently as a foreign production.)

The original was not available.

Pontano, G.G. (ca. 1475)

(De Pruinâ; et Rore, et Mannâ.)

Liber Meteororum. (Yr.-bk. Brit. pharm. Conf., 7, p.82.)

(Contains a poem which states that the peasants collected manna on the banks of the Crate in Calabria, and describes the production of the drug.)

The original was not available.

Saladinus 1488

(Manna.)

Compendium Aromatariorum. (Year-bk. Brit. Pharm. Conf. 7, p.82.)

Rauwolf, L. 1537

Trunschibel.

Itinerarium Orientarum. P. Vander Aa, De Aanmerkenswaardige Voyagien. (Fothergill, Phil. Trans. v.43, p.89; Lewis, Mat. Med., p.361; Nicolai, Syst. Mat. Med., p.319; Triller, Dispens. Pharm., p.259; Du Hamel du Monceau, Traite des Arbes, v.1, p. 250.)

Gives an account of this manna, large quantities of which were brought from Persia to Aleppo.

Palea, A. 1543

(Manna.)

(O'Rorke, Pharm. Jour. 2 (20), p. 170.)

(Proved that Sicilian manna was produced from the juice of the ash.)

The original was not available.

Alberti, J. 1550

(Manna.)

Descrittione di tutta Italia. (Yr.-bk. Brit. Pharm. Conf., 7, p. 83.)

(Mentions manna as found in Calabria.)

The original was not available.

Belon, P. 1556

(Tereniabin.)

Observationes. (Pharm. Jour., 112, p.387; Fothergill, Phil. Trans., v.43, p.90; Schroderus, Pharm., v.4, p.257; Pharm. Schrod.-Hoffmann. Lib. IV, p.570.)

(Gives native name for Alhagi manna and states that this manna is the "Mel" of Galena Hippocrates.)

The original was not available.

D'Orta, G. 1563

(Manna.)

_____ (Yr.-bk. Brit. Phar. Conf., 7, p.83.)

(Describes different Oriental mannas and contrasts them with that of Calabria.)

The original was not available.

Altomari, D.A. 1570

(De mannae, ut aiunt, differentiis ac viribus, deque eas dignoscendi via et ratione.)

Nonnulla opuscula, etc. ff. 118-139; Ibid., Opera omnia, fol., ff. 364-374. (S.G.L.I., v.8, p.582; Ibid 2 Ser., v.10, p.111; Tschirch, Handbuch der Pharm., 1 ed., v.2, p.112; Triller, Dispens. Pharm., v.1, p.259; Yr.-bk. Brit. Pharm. Conf., 7, p.84.)

The original was not available.

Salmasius, C. 1588-1653

(Manna of the Persians.)

Commentar. de Manna, p. 254. (Triller, Dispens. Pharm., v.1, p.258.)

The original was not available.

Mesue, J.D., Jr. ____

(De Simpl. c.8.)

De re medica libri tres, Iacobo Sylvio interprete. (Phil. Trans., v.43, p.92.)

(Galen mixed Manna with Scammony.)

The original was not available.

Clusius, C. 1605

De Manna
Cap. 11

Exoticorum Libri Decem, v.2, p.164. (Phil. Trans., v.43, p.89; Lewis, Mat. Med., p.361.)

Gives a brief account of three varieties of manna, including Xirquest and Trungibin.

Acosta, C. 1619

De la Manne.

Traicte Des Drogues et Medicamens, Liv. iii, p.18. (Hist. Des Drogues Espiceries et De Ceteris Mendicamens, Yr.-bk. Brit. Pharm. Conf., 7, p.83.)

Gives a description of a manna which was transported to the Indies, its properties, adulteration and comparison with Calabrian manna.

Garcie du Iardin 1619

De la Manne

Hist. Des Drogues, Espiceries, et Medicaments Simples, Livre i, p. 71. (Histoire De Drogues, Espisceries, et De Certains Mendicamins.)

Gives a brief discussion of Xirquest, Triamiabin, and of a third kind of manna.

Magnenus, J.C. 1648

(De Manna.)

De Manna. (S.G.L.I., 2 ser., v.10, p.111.)

The original was not available.

Bauhin, J. & Cherler, H. 1650

(Fraxinus Ornus.)

Hist. Plant., v.1, p. 177. (Woodville, Med. Bot., p. 589; Dale, Pharmacologia, v.1, 2 ed., p.363.)

The original was not available.

Deusingius, A. 1659

(Manna.)

Dissertationes de mannâ et saccharo Gronig. 1659, 12°., et aussi la dissert. de Cl. Saumaise, de mannâ et saccharo, à la suite de ses homonymes de matière médicale etc. (Journ. de Pharm. et de Chem. 4, p.120; Fathergill, Phil. Trans., v. 43, p. 89, Triller, Dispens. Pharm., v.1, p. 260.)

The original was not available.

Johnstonus, J. 1662

(Fraxinus rotundiore folio.)

Dendrographias, sive etc., p. 291. (Pharmacologia, v.1, 5 ed., p. 363.)

The original was not available.

Morison, R. 1669

(Fraxinus florifera botryoides.)

Praelud. p. 265. (Willdenow, Linné's Species plantarum, 4 ed., v. 4, p. 1104.)

The original was not available.

Schroderus, J. 1669

Manna.

Pharmacopoeia, v. 4, p. 256. (Pharmacologia, 5 ed., v. 1, p. 363.)

Gives synonyms according to seven ancient authors and in

Arabian; the two kinds official, varieties, description, uses, and seven preparations.

Bauhin, C. 1671

Fraxinum humilior, sive altera Theophrasti, minore and tenuiore folio.

Pinax et Prodromus, 2 ed., p. 416. (Woodville, Med. Bot., 2 ed., v. 3, p. 589; Dale, Pharmacologia, 5 ed., v. 1, p. 363; Nicolai, Systema Materiae Medicae, p. 319; Du Hamel du Monceau, Traité des Arbres, etc., v. 1, p. 247.)

Gives four pre-Linnéan synonyms.

Labat, J.B.

(Manna.)

Itiner. Hispan. & Ital. Tom. 5, cap. 11. (Triller, Dispens. Pharm., v.1, p. 259.)

The original was not available.

Fritschius, P. 1677

(Manna.)

De Manna. (S.G.L.I., v.8, p. 582.)

The original was not available.

Chabraeus, D. 1677

(Frax. rotundiore folio.)

Stirp. Icones & Sciagraphia, p. 62. (Pharmacologia, 5 ed., v.1, p. 363.)

The original was not available.

Matthiolus, P.A. 1680

De la Manne d'encens dite en Latin, Manna thuris.

Les Commentaires sur Les Six Livres de La Matiere Medicinale De Pedacius Dioscoride, Liv. 1, pp. 48.2, 66 ff. (Pharm. Jour., 2(20) p.170; Pharmacopoea Schrod.-Hoffmann., Lib.iv, p. 570; Yr.-bk. Brit. Pharm. Conf. 7, p. 83.)

Gives description according to three ancient authors, how manna of the ancients differs from manna laxative and from the Tereniabin of the Arabs.

Ange, Father 1681

(Shukkar Treghal or Tigal.)

Pharmacopoeia Persica. (Chem. & Drugg. 36, p. 856.)

(The cocoons "Schakar tigal", which produce Trehala or Syrian manna are described by him.)

The original was not available.

Hoffmannus, F. 1683

Manna

Pharmacopoea Schrodero-Hoffmanniana, Book 4, p. 570. (Triller, Dispens. Pharm., v.1, p. 259.)

Gives synonyms of various ancient authors, kinds, description, use, dosage, and preparations of Calabrian manna.

Ludovicus, D. 1685

Laxativa

De Pharmacia Moderno Seculo Applicanda, p. 149.

A discussion of various manna preparations is given.

Hermannus, P. 1687

(Fraxinus rotundiore folio.)

Catalogus Hort. Lugd. Bat. v.-, p. 261. (Pharmacologia, 5 ed. v.1, p. 363.)

The original was not available.

Raius, J. 1688

De Fraxino

Histoire Plantarum, v. 2, p. 1703. (Pharmacologia, v.1, 5 ed., p. 363.)

A general account of the tree is given with uses according to ancient authors.

Raius, J. 1688

Fraxinus rotundiore folio J.B.C.B.

Histoire Plantarum, v.2, p.1703. (Pharm. v.1, 5 ed., p. 363.)

Gives an account of prod. of manna in Calabria, how it differs from various Oriental Mannas (honeydews) according to Altomari, and uses.

Pomet, P. 1694

Des Gommes

Hist. Gén. des Drogues, p. 238. (Pharm. Jour., 112, p. 390.)

Gives etymology of "manna", and discusses the origin of the manna of the Israelites, of the commercial manna of his time, and of Briançon and liquid mannas, with an illustration.

Tournefort, P. 1694

(Fraxinus rotundiore folio.)

Elements de Botanique, etc., p. 448. (Pharmacologia, v.1, 5 ed., p. 363.)

The original was not available.

Bocconis, S. 1697

(I Anmerkungen von der Italiänischen Manna.)

Curiöse Anmerkungen über Ein unnander natürliche Dinge. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v.2, p.113.)

(So in diesem Seculo Zusammeln angefangen worden.)

The original was not available.

Riedlin,-- 1699

(Manna.)

Lin. Med. Ann. 1699, Mens. Novemb. Obs. 10, p. 1199; Ibid., 1695, Mens. Aug., Obs. 9, p. 237. (Triller, Dispens. Pharm. v.1, p.259.)

The original was not available.

Tournefort, P. 1700

(Fraxinus rotundiore folio.)

Instit. Rei Herbariae, p. 577. (Pharmacologia, 5 ed., v.1, p. 363.)

The original was not available.

Picolo, Father F. 1702

(California Manna.)

Lettres édifiantes et curieuses, écrites des Missions étrangères. (Kip, Historical Scenes from the Jesuit Missions, 1875, p. 50; Amer. Jour. Pharm., v.69, p. 50.)

(In April, May, and June, a kind of manna falls with the dew, which hardens on the leaves of the reeds from which it is gathered. It is a little darker than sugar but has all its sweetness.)

The original was not available.

Tournefort, J.P. 1716

Manna

Materia Medica, or a Description of Simple Medicines, 2 ed., p. 12. (Monro, Treat. on Med. & Pharm. Chem.)

Gives description, opinions of origin, three kinds, dose, and various uses.

Tournefort, J. P. 1717

La Manne.

Voyage to the Levant, v.1, p. 324. (Phil. Trans. v.43, p. 89; Triller, Dispens. Pharmaceut., p. 259; Amer. Jour. Phar., 34, p. 71; Du Hamel du Monceau, Traité des Arbres, v.1, p. 250.)

The Persian name for Alhagi manna (Trungibin) is the same as that of Avicenna and Serapione. Gives also a discussion of Alhagi manna.

Volckmann, G. I. 1725

(De manna.)

De manna, ejusque praestantissimo in medicina usu. (S.G.L.I. v.10, p.111.)

The original was not available.

Bielitz, J. 1725

(Manna)

De manna, et speciatim de securo ac proficuo ejus usu in variolis confluentibus ad imminuendam et tollendam febrem maturationis tempore oriundam. (S.G.L.I. v.8, p.582.)

The original was not available.

Ruppius, H.B. 1726

(Fraxinus rotundiore folio.)

Flora Jenensis, v.-, p.269. (Pharmacologia, 5 ed., v.1, p.363.)

The original was not available.

De Sailly, P.F. (1740)

(De Manna.)

Dissertationes. (S.G.L.I., 2 ser., v.10, p.111; Triller, Dispens. Pharm., v.1, p.260.)

The original was not available.

Hoyberg, W. 1743

(Manna.)

Dissertatiunculae de collesti illo cibo man dicto, è Exod.xvi, particul. resp. Frid. Rossingius, Hafmae 1743, 4°, 16 pag. (Journ. de Pharm. et de Chem. 4, p. 120.)

The original was not available.

Wilhelm, H. 1744

(Manna.)

Dissertatio inaugur. de manna. (Journ. de Pharm. et de Chem. 4, p. 120.)

The original was not available.

Heusterus, C. ———

(Manna.)

——— (Triller, Dispens. Pharm. v.1, p.260.)

The original was not available.

Fothergill, J. 1746

Observations on the Manna Persicum.

Philosophical Transactions, v.43, p.86. (Jour. de Pharm. et de Chemie, 4, p. 120.)

Read Apr. 26, 1744, and printed 1746 with additions. This manna is the Terengjabin of the old Arabians, and is the same as that of Clusius, Rauwolf, Tournefort, and Matthiolus. Gives its description, history, origin, seven names, and a brief account of the official manna. No kind of manna was in common use either with Hippocrates or with Galen.

Cartheuser, F. 1749

Saccharo, De Manna et Melle.

Fundamenta Materiae Medicae, Part 1, Sect. 8, Cap. 6, p. 462. (Triller, Dispens. Pharm., v.1, p.259.)

Discusses Calabrian manna and states that it alone is prescribed by physicians.

Nicolai, E.A. 1751

De Manna.

Systema Materiae Medicae Ad Praxin Applicatae, p. 319.

Gives a 24 pp. discussion of oriental and European mannas particularly of Calabrian manna.

Dale, S. 1751

Mannifera arbor. Offic.

Pharmacologia, 5 ed. v.1, p.363.

Gives a discussion of the official manna and reasons why it is not a honey dew.

Dale, S. 1751

De Gramine Dactyloide.

Pharmacologia, 5 ed., v.1, p. 289. (Watson, Geolog. Sur. of Calif., v.2, p. 307; Ency. Brit., 14 ed., v.10, p. 657.)

Gives various scientific names and brief description of 2 varieties of Manna Grass.

Linné, C. 1753

Fraxinus.

Species Plantarum, 1 ed., v.2, p. 1057. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v.2, p. 103; Lindley, Med. Bot., p. 547; Woodville, Med. Bot., p. 589; Quincy, Eng. Dispens., 15 ed., p. 167.)

Gives pre-Linnéan names and habitat of 3 species of Fraxinus.

Du Hamel du Monceau, H.L. 1755

Fraxinus Tournef. et Linn. Fresne.

Traité des arbres et Arbustes, v.1, p. 247. (Willdenow, Linné's Species plantarum, 4 ed., v. 4, p. 1104; Pharm. Jour. 112, p. 390.)

Gives description of the tree and a brief account of Calabrian and of Persian mannas, with 2 illustrations.

Du Hamel du Monceau, H. L. 1755

Larix, Mélese.

Traité des Arbres et Arbustes, v. 1, p. 339. (Du Hamel du Monceau; Traité des Arbres et Arbustes, v.1, p. 250.)

Gives an account of Larch Manna.

Pontoppidan, J. 1756

(Manna.)

Dissertationes de mannâ Israëlitar; pars I, resp. Erasm. Lindegaard Hauniae. (Journ. de Pharm. et de Chem., 4, p. 120.)

The original was not available.

Lewis, W. 1761

Manna.

An Experimental History of the Materia Medica, p. 360.

Gives definition and botanical origin, description, properties, uses of manna.

Triller, D. W. 1764

Manna Calabrina, la Manne en Larmes, Manne.

Dispensatorium Pharmaceuticum Universale, p. 258.

Gives botanical source, habitat, methods of production, kinds, uses of Calabrian manna with references to ancient authors.

Geoffrey, E. F. 1765

Manne de Calabre.

Matiére Médicale. (De Garsault, Explication Abrégée, etc., v.1, p. 70; Phil. Trans., v. 43, p. 90.)

A discussion of the manna ash and its manna is given, with a brief description of Briançon manna.

Geoffrey, E. F. 1765

Alhagi, Manne d' Orient, Viv.

Matiére Médicale. (De Garsault, Explication Abrégés, etc., v.1, p. 71; Phil. Trans., v. 43, p. 90; Ency. Brit., 9 ed., v. 15, p. 493; Nicolai, Syst. Mat. Med., p. 319; Triller, Dispens. Pharm., p. 259.)

Gives definition, description of plant, habitat, and chief properties of the manna.

De Garsault, F. A. 1765

A. Fraxinus Excelsior.

Les Figures Des Plantes et Animaux, v. 1, Pl. 277.

Gives an illustration of F. Excelsior.

Dietrich, K. F. 1770

(Ornus europaea.)

Species plantarum, v.1, p. 248. (Lindley, Med. Bot. p. 547.)

The original was not available.

Linné, C. 1772

Fraxinus, foliis serratis, floribus corollatis.

Mat. Med., 2 ed., p. 222. (Willdenow, Linné's Species Plantarum, 4 ed., v. 4, p. 1104.)

Gives pre-Linnéan name, geographical habitat, description, properties, and use of the drug.

Riedesel, J. H. 1773

(Calabrian Manna.)

Travels thru Sicily and that part of Italy formerly called Magna Graecia, Eng. transl., p.--. (Pharm. Jour. 32, p. 421.)

(The best manna and in the greatest quantity is collected around Calabria. The owners of the trees are obliged to sell their manna to the king for a fixed price.)

The original was not available.

Houttuyn, M. 1777

(Fraxinus Ornus.)

Pflanzen System, v.2, p. 526. (Willdenow, Linné's Species plantarum, 4 ed., v. 4, p. 1104.)

The original was not available.

Dillon, J. T. 1780

(Manna.)

Travels through Spain, etc., p. 127. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 417.)

(Manna is yielded in Spain by Cistus ladaniferus L.)

The original was not available.

Quincy, J. 1782

Manna.

A Complete English Dispensatory, 15 ed., Part 1, p. 167.

Gives a brief discussion of manna, much used in his time.

Monro, D. 1788

Manna.
Manna Calabrina.

A Treatise on Medical and Pharmaceutical Chemistry and the Materia Medica, v. 2, p. 452.

Gives definition, botanical sources, kinds, chief properties, different ways of using it.

Clavijero, Father F. H. 1789

(California Manna.)

Extracts from a History of Old or Lower California, p.--. (Taylor, A Sketch of the Settlement & Exploration of Lower Calif., p. 155; Amer. Jour. Pharm., 69, p. 338.)

(There is a reed-grass growing in lower California near running streams which yields manna.)

The original was not available.

Villars, D. 1789

(Larch Manna.)

Histoire des Plantes du Dauphiné, v. 3, p. 808. (Pharm. Jour., 112, p. 387.)

(Gives a description of larch manna.)

The original was not available.

Posnerus, __ ____

(Manna.)

_____ (Triller, Dispens. Pharm. v. 1, p. 259.)

The original was not available.

Lamarch, M. le Chevalier de 1790

(Fraxinus foliolis acutis, serratis petiolatis, panicula terminali, floribus tetrapetalis.)

Encyclopédie Methodique: Botanique, v.2, p. 541. (Willdenow, Linné's Species Plantarum, 4 ed., v. 4, p. 1104.)

The original was not available.

Trainer, G. A. B. 1793

(Manna.)

Examen chemicum mannae. (S.G.L.I., v.8, p. 582.)

The original was not available.

Woodville, W. 1793

Fraxinus Ornus.

Medical Botany, 1 ed., v. 3, p. 589, t. 209; Ibid., 2 ed., v.3, p. 589, t. 209. (Wood & Bache, Dispens. U.S.A., 2 ed., p. 421; Ibid., 3 ed., p. 412; Ibid., 4 ed., p. 425; Ibid., 5 ed., p. 446; Ibid., 6 ed., p. 447; Ibid., 7 ed., p. 447; Ibid., 8 ed., p. 447; Ibid., 9 ed., p. 463; Ibid., 10 ed., p. 586; Ibid., 11 ed., p. 485; Ibid., 12 ed., p. 532; Ibid., 13 ed., p. 546; Ibid., 14 ed., p. 572.)

Gives a discussion of fraxinus ornus and states that manna is "succus proprius" of the tree; not the honey-dew of the ancient Israelites.

Astuto, L. 1794

(Lettera sulla manna pioruta in Vizzini.)

Ann. di chim. e stovia nat., 6, p. 3. (S.G.L.I., 2 ser., v. 10, p. 111.)

The original was not available.

Persoon, C. H. 1805

Ornus europaea.

Synops. Plant., v.I, p. 9. (Wood & Bache, Dispens. U.S.A., 5 ed., p. 447; Ibid., 6 ed., p. 447; Ibid., 7 ed., p. 447; Ibid., 8 ed., p. 447; Ibid., 9 ed., p. 463; Ibid., 10 ed., p. 464; Ibid., 11 ed., p. 486; Ibid., 12 ed., p. 533; Ibid., 13 ed., p. 547; Ibid., 14 ed., p. 572; Ibid., 15 ed., p. 922; Ibid., 16 ed., p. 955; Ibid., 17 ed., p. 851; Ibid., 19 ed., p. 764; Lindley, Med. Bot., p. 547; Stille, Maisch & Caspari, The Nat. Dispens., p. 1017; King, Am. Dispens., 18 ed., p. 1236; Berg, Pharmakog., 2 ed., p. 476; Cauvet, D'Histoire Naturelle Médicale, v.2, p. 560.)

Gives brief technical description of the plant.

Willdenow, C. L. 1805

Fraxinus Ornus.

Linné's Species Plantarum, 4 ed., v.4, p. 1104. (Wood & Bache, Dispens. U.S.A., 2 ed., p. 421; Ibid., 3 ed., p. 412; Ibid 4 ed., p. 425; Ibid., 5 ed., p. 446; Ibid., 6 ed., p. 446; Ibid 7 ed., p. 447; Ibid., 8 ed., p. 447; Ibid., 9 ed., p. 463; Ibid., 10 ed., p. 464; Ibid., 11 ed., p. 486; Ibid., 12 ed., p. 533; Ibid., 13 ed., p. 547; Ibid., 14 ed., p. 572; Ibid., 15 ed., p. 922; Ibid., 16 ed., p. 955; Ibid., 17 ed., p. 851; Ibid., 19 ed., p. 764; An Amer. Phys., Eclec. and Gen. Dispens., p. 175.)

Gives 4 pre-Linnéan names, German title, and habitat.

Coxe, J. R. 1806

Fraxinum Ornus. Succus concretus. Ed.
Manna. L. D.

Am. Dispens., 1 ed., p. 351; Ibid., 4 ed., p. 257; Ibid., 6 ed., p. 378; Ibid., 7 ed., p. 391; Ibid., 8 ed., p. 406; Ibid., 9 ed., p. 449.

Gives product used, synonyms in ten different languages, botanical origin, method of preparation, commercial varieties, medical properties, and official preparations.

Proust, J. L. 1806

Sur le Sucre et ses espèces.

Ann. d. Chim. et de phys., 57, p. 145. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681; Proc. Amer. Pharm. Assoc., 46, p. 802.)

Various tests show that California manna is different from cane sugar and honey. It grows abundantly in America and, according to Father Picolo, exudes from certain bushes in California in April, May, and June.

Sibthorp, J. 1806

(Fraxinus Ornus.)

Flora Graeca, t. 4. (An Amer. Phys., Eclec. and Gen. Dispens., p. 175.)

The original was not available.

Trommsdorff, J. B. 1806

Manna (Manna.)

Handbuch der Pharmaceutischen Waarenkunde, v.2, p. 511.

Gives definition, description, and properties of the commercial varieties, and source and manner of production of ash manna.

Morelot, S. 1807

Manne.

Dictionnaire Des Drogues, v. 2, p. 9.

Gives definition, botanical source, habitat, chief qualities of 4 commercial Italian mannas, and a brief account of 5 kinds of manna.

Esper, E. 1810

(Bemerkungen zur Naturgeschichte der Manna.)

Abhandl . d. Phys. Med. Soc. zu Erlang. i, 131-134. (S.G.L.I., v.8, p. 582.)

The original was not available.

Thacher, J. 1810

Fraxinus Ornus. Manna ash.

Amer. New Dispens., 1 ed., p. 126; Ibid., 2 ed., p. 222; Ibid., 4 ed., p. 228.

Gives product used, botanical source, habitat, two kinds, physical properties of each, medicinal properties, and dosage.

Aiton, W. 1811

Fraxinus, foliis ovato - oblongis, serratis petiolatis, floribus corollatis.

Hortus Kewensis, 1 ed., v. 3, p. 445. (Willdenow, Linné's Species plantarum, 4 ed., v. 4, p. 1104.)

Gives pre-Linnéan name, Linnéan name, geographical habitat, date of introduction into England, and time of flowering.

Murray, J. 1815

Manna

A System of Materia Medica and Pharmacy, v.1, p. 265.

Gives 2 sources, habitat, manner of production, physical and chemical properties, dose, and official preparation.

Bouillon La Grange, E.J.B. 1817

Experiences sur la Manne.

Jour. de Pharm. et de Chim., 13, p. 10. (Tschirch, Handbuch der Pharm., 1 ed., v. 2, p. 110.)

Gives characteristics of true manna and results of various chemical tests.

Ewell, J. 1817

Manna.

Med. Compan., 3 ed., p. 632; Ibid., 7 ed., p. 798.

Gives dosage and chief qualities of manna.

Virey, J.J. 1818

Rechérches Historiques et Bibliques.

Journ. de Pharm. et de Chim., 4, p. 120. (Pharm. Journ., 3, p. 274.)

"Manna" is an Arabian, Hebrew, and Chaldean word meaning a sort of honey dew formed on leaves and branches of trees, and translated by biblical authors as "la manna". The Arabian doctors were the first to use it as medicine. Avicenne, Galen, Aristotle, Dioscorides, Theophrastus, and Athénée use the term, "heavenly honey". The Arabs kept the term "manna", but the Greeks, Romans did not use it; the Romans did not even gather the manna in Calabria to use as medicine.

There is much alhagi manna in the desert of Mt. Sinai.

Gives reasons for the miraculous regarding the manna of Mt. Sinai.

Craven, R. K. 1821

(Calabrian Manna.)

Tour thru Southern Provinces of Kingdom of Naples, p.---. (Pharm. Journ., 32, p. 421.)

(The forests which clothe the summits of the mountains furnish quantities of that species of ash which produces manna, a considerable branch of commerce in this province, and more particularly esteemed from this district.)

The original was not available.

Bigelow, J. 1822

Manna.

A Sequel to the Pharmacopoeia of the United States, p. 254.

Gives botanical source of two kinds of manna, and their properties, uses, and dosage.

Burckhardt, J. L. 1822

(Manna.)

Travels in Syria, p. 600. (Cath. Ency., v.9, p. 604; Phar. Jour., 2 (20), p. 170.)

The original was not available.

Physician, An Amer. 1827

Fraxinus.
Officinal. Manna, Lond. Dub. Edin. Manna.

Dispens., Eclectic & Gen., p. 175.

Gives synonyms in 6 different languages, botanical and geographical origin, kinds, qualities, medical properties and uses, dosage and official preparations.

Stephenson, J. & Churchhill, J.M. 1827

(Ornus europaea.)

Medical Botany, v.1, t.53. (Lindley, Med. Bot., p. 547.)

The original was not available.

Nees, Th. Fr. L. v. Esenbeck & Weyhe, M. F. 1828

Fraxinus Excelsior L.
(Die gemeine Esche.)

Plantae Medicinales Taf. 374, v.1, p. 161. (Pabst- Köhler's Medizinal-Pflanzen, Taf. 115.)

Gives classification according to Linné and Jussieu, general characteristics, specific characteristics and authors using them, name in 14 different languages, habitat, and description of plant, 10 volumes having illustrations, and an illustration.

Nees, Th. Fr. L. v. Esenbeck & Weyhe, M. F. 1828

Fraxinus Ornus L.
(Die blühende Esche oder die Mannaesche.)

Plantae Medicinales Taf. 374, v.1, p. 162. (Pabst- Köhler's Medizinal-Pflanzen, Taf. 115.)

Classifies the plant according to Linné and Jussieu, gives general characteristics, specific characteristics and authors using them, name in 13 different languages, habitat and description of the plant, physical properties, and description of three varieties of manna, characteristics which distinguish true from false mannas, composition of syrup of manna, and illustration.

Hochstetter, C. F. 1831

Manna.

Populäre Botanik, v.1, p. 81; Ibid., Cas. Med. 8, Decad. 4, p. 429. (Triller, Dispens. Pharm. v.1, p. 259.)

Gives a description of the manna-ash.

———— 1833

New Manna from Australia.

Amer. Jour. Pharm. 5, p. 86.

Gives brief description of Eucalyptus mannifera and of production and properties of manna produced from it.

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

Manna. U.S., Lond., Ed., Dub.

Dispens. U.S.A., 2 ed., p. 420; Ibid., 3 ed., p. 412; Ibid., 4 ed., p. 424; Ibid., 5 ed., p. 446; Ibid., 6 ed., p. 446; Ibid., 7 ed., p. 447; Ibid., 8 ed., p. 447; Ibid., 9 ed., p. 463; Ibid., 10 ed., p. 586; Ibid., 11 ed., p. 485; Ibid., 12 ed., (1865) p. 532; Ibid., 12 ed., (1869) p. 532; Ibid., 13 ed., p. 546; Ibid., 14 ed., p. 572; Ibid., 15 ed., p. 921; Ibid., 16 ed., p. 954; Ibid., 17 ed., p. 850; Ibid., 18 ed., p. 1236; Ibid., 19 ed., p. 763; Ibid., 20 ed., p. 682; Ibid., 21 ed., p. 679.

Gives product used, synonyms, botanical origin with generic and specific characters, method of preparation, commercial varieties, properties, medical properties, one use, and official preparations.

Bennett, G. 1834

(Australisches Manna.)

Wanderings in New South Wales, etc., v.--, p.--. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v.2, p. 113.)

The original was not available.

Adams, C. B. 1834

On Honey and Hydromel or Honied Water.

The Seven Books of Paulus Aegineta, v.1, p. 178. (Adams, the Gen. Works of Hippocrates, v.2, p. 800.)

Gives Galen's account of a "honey shower", the opinion of E. Faber that this honey is the manna of cedars, and states that the saccharum of Theophrastus, Disocorides, Galen, Strabo, Pliny, and other ancient authors was a natural concretion, forming on various reeds especially upon the bamboo cane noticed by Herodotus and Ctesias.

Guibourt, N.J.B.G. 1836

De la Manne.

Hist. Abrégée des Drogues Simples, 3 ed., v.2, p. 467. (Pharm. Jour., v.3, s.2, p. 274; Chem. & Drugg. 36, p. 865.)

Gives a description of the manna ash and brief discussions of Briançon, Alhagi, and tarandjabin mannas.

Dausse, M. 1837

Method of Purifying Common Manna and of Converting it into Flake Manna.

Amer. Jour. Pharm. 9, p. 45.

Gives method of preparing flake manna artificially, and comparison of its properties with those of true manna.

Lindley, J. 1838

Ornus europaea.

Flor. Med., p. 547. (Wood & Bache, Dispens., U.S.A., 5 ed., p. 447; Ibid., 6 ed., p. 447; Ibid., 7 ed., p. 447; Ibid., 8 ed., p. 447; Ibid., 9 ed., p. 463; Ibid., 10 ed., p. 464; Ibid., 11 ed., p. 486; Ibid., 12 ed., p. 533; Ibid., 13 ed., p. 547; Ibid., 14 ed., p. 572; Ibid., 15 ed., p. 922; Ibid., 16 ed., p. 955; Ibid., 17 ed., p. 851; Ibid., 19 ed., p. 764.

Gives botanical origin and description of the plant, three varieties of manna and their uses.

(Editorial) 1839

Falsification of Manna

Amer. Jour. of Pharm., 11, p. 87.

Manna of sorts was found by a French pharmacist to be adulterated with sugar of amidon.

Erichson, W. T. 1842

Psylla luteola, Psylla subfasciata.

Archiv. für Naturgeschichte, 8, p. 286. (Proc. Roy. Soc. N.S.W., 30, p. 305.)

Gives description and two illustrations of psyllae which produce Australian manna.

Wilkes, C. 1844

Pinus Lambertiana.

Narrative of the U. S. Exploring Expetition, v.5, p. 247. (Amer. Jour. Pharm.,69, p. 337.)

The sugar of this tree has strongly cathartic properties.

Leuchtweiss, A. 1845

Untersuchung mehrerer Mannasorten des Handels.

Annalen der Chem. u. Pharm. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 685; Pharm. Jour., 4, p. 567; Berg, Pharmakog. des Planzenreichs, 2 ed., p. 476.)

Gives constituents of the 3 common varieties of commercial manna.

Stokes, J. L. 1846

(Surgeon Bynoes's Account of his Observations on Cicadas and Manna.)

Discoveries in Australia etc., v.1, p. 286; Ibid., v.2, p. 482. (Proc. Roy. Soc. New South Wales, v.30, p. 291.)

(A species of cicada plentiful on the north Coast of Australia produces manna.)

The original was not available.

Stettner, J. 1848

Ueber die Manna.

Archiv. der Pharm., 103, p. 193. (Jahr. der Pharm., 8, p. 35; Amer. Jour. Pharm., 22, p. 78.)

Gives habitat, description of the manna ash, and manner of production of 3 kinds of Sicilian manna.

Wiggers, A. 1848

Manna.

Jahr. der Pharm., 8, p. 35. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 411.)

Gives geographical habitat of the best kind of Sicilian manna, description of the tree, and manner of production of two kinds of Sicilian Manna.

Anderson, T. 1849

(On a new kind of Manna from New South Wales.)

Edin. New Philosoph. Journ. 1849. (Proc. Roy. Soc. Van Diemen's Land, v.1, 1851; Journ. für Prakt. Chemie, 47, p. 449.)

(Gives an account of the author's analysis of a sample of lerp received from the northwestern part of Victoria.)

Ehrenberg, C. & Hemprich, --

1850

(Coccus manniparus.)

Symbolae Physicae, etc., Zoologica, ii, Insecta 8. (Pharm. Jour., 3, p. 274; Amer. Drugg., 30 (366), p. 136.)

(The manna found at present in the mountains of Sinai and eaten by the indigenous Arabs and Greek monks flows from Tamarix mannifera, and is produced under the influence of the puncture of an insect, cocus manniparus.)

The original was not available.

Laurent, A.

1850

Note sur le dulcose.

Compt. Rend. 30, 339. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 114.)

The sugar dulcose is not the same as mannite according to M. Soubeyran.

Thomas, R. P.

1851

Fictitious Manna.

Am. Jour. Pharm., 24, p. 208. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 684.)

Gives tests which distinguish false from true mannas.

Dobson, T.

1851

(On Laarp, or Lerp, the cup-like coverings of Psyllidae found on the leaves of certain Eucalypti.)

Proc. Royal Soc. Van Diemen's Land, v.1, p. 235. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 417; Proc. Roy. Soc. New South Wales, 30, p. 304; Edin. New Philosoph. Journ., July, 1849; Journ. für Prakt. Chemie, 47, p. 449; Ency. Brit., 9 ed., v.15, p. 493.)

(Gives description and drawings of several species of Psyllidae found in Tasmania with two plates.)

The original was not available.

King, J. & Newton, R. 1852

Ornus Europaea. Manna Tree.

Eclectic Dispens. U.S., 1 ed., p. 285.

Gives product used, history, properties and uses.

Mundy, G. C. 1852

Collecting Manna at Bathurst, N.S.W.

Our Antipodes, 3 ed., v.1, 79, p. 176. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

The white sweet manna found under Eucalyptus mannifera is eagerly sought as food.

Bonsall, C.T. 1853

Neue Bereitungswiese des Mannite.

Archiv. der Pharm., 134, 70. (Rem. & Wood, Dispens.,U.S.A.,20 ed., p.686; Ibid., 21 ed., p.681; Am. Jour. Pharm., 25, p.297.)

Gives method of extracting mannite from flake manna.

Landerer, H. 1853

Varieties of Manna not produced by the ash.

Pharm. Jour., 13, p. 411. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681; S.G.L.I., v.8, p. 582; Amer. Jour. Pharm., 49, p. 156; Proc. Amer. Pharm. Assoc., 25, p. 141; S.G.L.I., v.8, p. 582; Echo Med. Neuchat., v.3, p.452.)

Wiggers, A. 1853

Fraxineae.

Grundriss der Pharmacognosie, p. 330.

A brief discussion is given of Calabrian manna and of other kinds.

Names 8 varieties of manna not produced by the ash, with botanical origin, manner of production, and uses of Cistus, Alhagi, and Tamarisk, commonly called Manna Israëlitarum.

Rebling, A. 1855

Fraxineae. Fraxineen.

Jahresber. d. Pharm., 15, p. 44. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v.2, p. 110; Archiv. der Pharm., 81, p. 281; Berg, Pharmakognosie des Pflanzenreichs, 2 ed., p. 476.)

Ash manna is formed by the prick of the insect, Cicada Orni. Gives percentage of mannite, of fruit sugar and of water in 4 kinds of manna.

Berthelot, M. 1856

Sur quelques matières sucrées.

Comptes Rendus, 41, p. 392. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681; Amer. Jour. Pharm., 28, p. 157; Tschirch, Handbuch der Pharmacognosie, 1 ed., v.2, p. 103.)

Gives physical and chemical properties of melitose and eucalyne from Australian manna (Manna of Eucalyptus), and of pinite from the manna of Pinus Lambertiana (California Manna). (The author also extracted a sugar from certain ciders, isomeric with mannite.)

Hayne, F. G. 1856

Ornus Europaea.

Arzneigew. aechse, v.13, p. 11. (Kohler's Medizinal-Pflanzen, Taf. 115.)

Gives classification and description of plant, habitat, 4 varieties, and 2 methods of production of ash manna, description, properties and uses of different varieties, and an illustration.

Berg, O. 1857

Manna.

Pharmakognosie des Pflanzenreichs, 2 ed., p. 476.

Gives a discussion of the manna ash, of production and varieties of commercial mannas, and of 8 other kinds of manna.

Newberry, J. S. 1857

Pinus Lambertiana.

Bot. Report of U.S. Pacific R. R. Surveys in Calif. & Ore., v. 6, p. 42. (Am. Jour. Pharm., 69, p. 337; Pharm. Jour., 36, p. 893; New Remedies, 6, p. 110.)

The resin of this tree resembles manna very closely in physical and medical properties.

Gray, A. 1847

Manna-Grass.

Botany, New Lessons, p. 626. (Amer. Jour. Pharm., 69, p.337.)

This grass (Glyceria) is named from a sweet principle contained in the grain.

Hanbury, D. 1858

Note on Two Insect-products from Persia.

Journ. Linn. Soc., Zoology, 3, p. 178. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 417.)

Gives description, origin, and use of Tréhala manna, description of the insect producing the saccharine substance on Echinops persicus, Fisch, and 4 illustrations.

West, T. 1858

(An Account of Lerp or Laarp.)

Sydney Magazine of Science and Art, v.1, p. 75. (Proc. Roy. Soc. New South Wales, v.30, p. 291.)

(Gives a brief description of a singular insect production found in some parts of Australia.)

The original was not available.

Berthelot, M. 1858

Sur le mélézitose, nouvelle espèce de sucre.

Comptes Rendus, 47, p. 224. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681; Am. Journ. Pharm. 31, p. 61.)

Gives a method of extraction and chemical and physical properties of melezitose from Briançon manna.

Mason, F. 1860

(Manna of Myrtle.)

Burmah, Its People & Natural Productions, etc., 2 ed., p.--. (Yr.-bk. Brit. Pharm. Conf., 27, p. 506.)

(A species of myrtle exudes a manna-like substance from branches and trunk.)

The original was not available.

Backhaus, R. 1861

Chemical Researches on Mannite and Manna.

Am. Jour. Pharm., 33, p.26. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 685.)

Gives tests for purity of mannite and mannitan.

O'Rorke, M. 1861

On the Manna of the Hebrews.

Pharm. Jour., 2(20), p. 169. (Pharm. Jour., 2(20), p. 434; Amer. Drugg. Circ. & Chem. Gaz., 4, p. 315; Journ. de Pharm. et de Chim., 1860.)

Gives discussion of the statement that the manna of the Israelites is the "Leconora esculenta" of Acharius.

Soubeiran, J. L. 1861

Note on the Manna of Alhagi Maurorum, D.C.

Pharm. Jour., 2,(20), p. 434.

Gives description of shrub, and its exudation, use, and relation to the manna of the Israelites.

Warncke, T. S. 1862

Manna, Manna calabrina.

Laeren om Laegemidlernes physiologiske Virkninger og therapeutiske Anvendelse, p. 551.

Gives constituents, dose, and preparations.

Berthelot, M. 1862

Sur la manne du Sinaï et sur la manne de Syrie.

Comptes Rendus, 53, p. 71. (Pharm. Jour., 3, p. 274; Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Amer. Jour. Pharm., 44, p. 211; S.G.L.I., v.8, p. 582.)

Discusses the manna of the Israelites and states that it is a true honey perfected by the presence of dextrine, and almost identical chemically with the manna of Syria.

Hanbury, D. 1863

Manna.

Pharm. Jour., 22, p. 108. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 417; Amer. Jour. Pharm., 34, p. 546.)

Gives briefly description, source, and use of Diarbekir, Eucalyptus, Lerp, and Alhagi mannas.

Wigand, J. W. 1863

Manna.

Lehrbuch der Pharmakognosie, p. 229.

Gives source, habitat, definition, brief description of 3 kinds, chief constituent of manna.

Hanbury, D. 1864

Briancon Manna (Larch Manna.)

Science Papers, etc., v.--, 437. (Pharm. Journ., 112, p. 390; Ency. Brit., 9 ed., v. 15, p. 493; Chem. & Drugg., 36, p. 863.)

Gives derivation of "melezitose" and the statement of M. Turin, an intelligent pharmacien, that, "in height of summer, and in the early part of the day in Briancon, some of the larches in the forest are whitened by the manna as if there had been a sprinkling of snow on the branches."

King, J. 1864

Manna (U.S.P.) Manna.

Amer. Dispens., 6 ed., p. 669; Ibid., 8 ed., p. 586; Ibid., 10 ed., p. 586; Ibid., 15 ed., p. 586; Ibid., 16 ed., p. 586; Ibid., 18 ed.,3 rev., v.2, p. 1236.

Gives definition, botanical source, history and description, medical uses, dosage, and false mannas.

Buignet, H. 1868

Recherches sur la constitution chemique de la Manne en larmes.

Jour. de Pharm., 86, p. 401, & 87, p. 5. (Tschirch, Handbuch der Pharmacog., 1 ed., v 2., p. 110; Amer. Jour. Pharm. 40, p. 401; Cauvet, Histoire Naturelle Médicale, v.2, p. 562; Husemann & Hilger, Die Pflanzenstoffe, v.2, p. 1273.)

Gives percentage of sugar and optical properties of this manna.

Cleghorn, H. 1868

Notes on the Botany and Agriculture of Malta and Sicily.

Trans. Bot. Soc. Edinburg, 10, p. 132. (Pharm. Jour., 32, 3, p. 421.)

Fraxinus ornus and Fraxinus excelsior are the two sources of Sicilian manna, Fraxinum rotundifolia being a variation of the former. Gives 4 Italian names for Fraxinus ornus, manner of cultivation of it and the production of Calabrian and Tuscan mannas, with value of export.

Flückiger, F.A. 1868

Eine Merkwürdige Form des Stärkmehles.

Wittstein's Vierteljahresschrift, 17, p. 16. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 417.)

Gives manner of production by insects of Eucalyptus and Lerp Mannas, description, physical properties, chemical constituents of each, and shows that Lerp manna contains a substance similar to starch.

Murray, J. 1868

(Calabrian Manna.)

Handbook for Southern Italy, ed. 1868, p.--. (Pharm. Jour. 32, p. 421.)

(Calabria Citra is the principal seat of trade in manna in Italy.)

The original was not available.

Stewart, (J. L.) 1869

(Alhagi Manna.)

Punjab Plants, Lahore, v.--, p. 57 & op. 92. (Fluckiger & Hanbury, Pharmacographia, 2 ed., p. 414; Ency. Brit., 9 ed., v. 15, p. 493.)

(Alhagi manna is collected near Kandahar and Herat. It is imported into India - about 2000 lb. annually; its value is reckoned at 30 s. per lb.)

The original was not available.

Haussknecht, A. 1870

Ueber Manna Sorten des Orients.

Archiv. d. Pharmacie, 191, p. 244. (Fluckiger & Hanbury, Pharmacographia, 2 ed., p. 415; Chem. & Drugg., 36, p. 863.)

Gives botanical origin of 10 kinds of oriental manna, production, collection and uses of oak manna of Kurdistan, geographical habitat, varieties and uses of Ges-engebin, (Tamarisk), of Alhagi and of Persian manna, and states that a lichen is the probable source of Biblical manna.

Histed, E. 1870

Fictitious Manna.

Pharm. Jour., 11, p. 629. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 684; Yr.-bk. Brit. Pharm. Conf., 7, p. 45.)

Gives physical and chemical differences by which to distinguish artificial flake manna from the natural manna.

Hanbury, D. 1870

Manna.

Pharm. Jour., 11, p. 326. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 410; Chem. & Drugg., 74, p. 83; Yr.-Bk. Brit. Pharm. Conf., 7, p. 81; S.G.L.I., v.8, p. 582; Pharm. & Chem., 3, p. 7; Pharm. Centralh., 45, p. 972.)

The manna of Europe prior to 1500 was very likely Oriental manna. Collection of ash manna began in Calabria about 1450, production by incision about 1550. Mt. Gibilmanna, Sicily, was named by the Arabs before this, but this does not prove that manna was produced there earlier than in Calabria.

Ludwig, H. 1871

Fraxineae.

Proc. Amer. Pharm. Assoc., 19, p. 284. (Arch. d. Pharm., 1870.)

Gives constituents of 8 kinds of Persian manna, and properties of a fictitious manna.

Hanbury, D. 1872

On Calabrian Manna.

Pharm. Jour., 32, p. 421. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 684; Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 108; S.G.L.I., v.8, p. 582; Amer. Jour. Pharm., 42, p. 162, Pharm. Jour., 33, p. 496; Proc. Amer. Pharm. Assoc., 21, p. 219.)

Production of Calabrian manna had practically ceased in 1872. Fraxinus Rotundifolia is a variety of Fraxinus Ornus.

Ebers, G. M. 1872

(Manna.)

Flückiger, F. A. 1872

Kurdistan Manna.

Archiv. der Pharm., 200, p. 159. (Flückiger & Hanbury, Pharmacographia, 2 ed., p. 416; Husemann & Hilger, v.2, p. 1273; Pharm. Centralh., 34, p. 80.)

Discusses the constituents of Kurdistan manna.

Maisch, J. 1872

Manna of the Linden-tree.

Amer. Jour. Pharm., 44, p. 211.

Gives composition of the manna found upon the leaves of this tree according to Boussingault.

Bouchardat, G. 1873

De la production du pouvoir rotatoire dans les derivés neutres de la mannite.

Compt. Rend., 76, p. 1550. (S.G.L.I., 2 ser., v.10, p. 111.)

Gives results of experiments into rotatory power of 10 derivatives of mannite.

Flückiger, F.A. 1876

Manna of Briançon.

Amer. Jour. Pharm., 48, p. 366.

Gives source and states that the manna was not so rare an article of commerce in the 2nd half of the 16th century.

Villiers, A. 1876

African False Mannas.

Pharm. Jour., 36, p. 917. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681.)

Gives botanical origin, the manna yielding, and properties of melezitose.

Cauvet, D. 1877

Orne ou Frêne à fleurs.

Nouveaux Éléments D'Histoire Naturelle Médicale, v.2, p. 560.

Gives description of the manna ash, opinions of manner of formation of manna, constituents, 3 common sorts, use, 4 other mannas, and account of Alhagi and Australian mannas.

Thurber, G. 1877

California Manna.

New Remedies, 6, p. 110. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Pharm. Jour., 36, 893; Drugg. Cir., 21, p.52.)

Gives botanical source of 6 kinds of manna, and discusses briefly manna from Larix europaea, Pinus Lambertiana, and Libacedrus decurrens.

Some authors assert that manna of Lebanon was afforded by the Cedar of Lebanon, others that it was only a synonym for gum mastic.

Flückiger, F.A., & Hanbury, D. 1878

Manna.
Manna; angl. et allem., Manna.

Histoire Des Drogues, etc., v.2, p. 48. (Proc. Roy. Soc. New South Wales, 30, p. 304.)

Gives as source of the medicinal manna of Europe, history and method of production in Sicily, description of commercial varieties, constituents, export value of different varieties in 1869 & 1870, adulterants, uses, and discusses 9 Oriental mannas.

M'Coy, F. 1878

(Cicada moerens, The Great Black or Manna Cicada.)

Natural History of Victoria. Prodromus of the Zoology of Victoria , Decade V, plate 50. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

(Gives a life history of Cicada moerens and states that Eucalyptus manna is formed by this cicada.)

The original was not available.

Flückiger, F. & Hanbury, D. 1879

Manna.

Pharmacographia, 2 ed., p. 414. (Chem. & Drugg., 92, p. 81; Ency. Brit., 9 ed., v. 15, p. 493; Amer. Jour. Pharm., 48, p. 366; Ibid., 92, p. 175; Chem. & Drugg., 36, p. 863; Ibid., 107, p. 429; Proc. Amer. Pharm. Assoc., 43, p. 870; Ibid., 28, p. 125; Archiv. der Pharm., 232, p. 311.)

Gives botanical origin, physical and chemical properties, uses of 5 kinds of Oriental manna, and of French, Spanish, and Australian mannas.

Musset, Ch. 1879

Observations sur une pluie de séve.

Compt. Rend., 88, p. 306. (Pharm. Jour., 112, p. 388.)

A fine drizzle of honey dew was witnessed from spruce trees infested with gnats during 15 hot days of August; believes the cause to be an abnormal excretion of sap by leaves, due to lessened transpiration.

Janssen , J. 1879

Manna Production.

Year-bk. Brit. Pharm. Conf., 17, p. 216. (Pharm. Zeit., 1879; Pharm. Jour., 39, p. 407; Amer. Jour. Pharm., 51, p. 607; New Rem., 6, p. 239.)

Gives a brief account of production of manna in Italy.

Salvatore,-- 1879

(Manna.)

Malattie epatiche, v.-, p.-. (S.G.L.I., 2 ser., v.10, p. 111; Ibid., 3 ser., v.7, p. 955.)

The original was not available.
(See Gubitose, S.)

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

Manna. U.S. Br. P.A.P.G. Manna.

Nat. Dispens., 1 ed., p. 881; Ibid., 2 ed., p. 897; Ibid., 3 ed., p. 957; Ibid., 5 ed., p. 1017.

Gives synonyms in 3 different languages, botanical origin, collection, description, sophistication, constituents, different varieties, uses, and preparations.

Watson, S. 1880

(Phragmites communis.)

Geolog. Survey of Calif., v.5, p. 390. (Am. Jour. Pharm., 69, p. 337.)

(Aphides causes sweet secretions on its leaves and those of the cottonwood and other trees.)

The original was not available.

Fehling, H. V. 1881

Manna.

Handwörterbuch, v. 4, p. 263. (Tschirch, Handbuch der Pharm., 1 ed., v.2, p. 111.)

Discusses manna of the manna ash, and other products known as manna, with their botanical origin, with references.

Fehling, H. V. 1881

Mannite.

Handwörterbuch, v.4, p. 265. (Tschirch, Handbuch der Pharm., 1 ed., v.2, p. 111.)

Lists the plants yielding mannite, with references, and also chemical investigations on the substance.

Scott, J. 1882

(Revision of the British Museum Collection of Psyllidae.)

Trans. Ent. Soc. Lon., 1882, p. 449. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

(Several species of Tasmania are redescribed in this paper.)

The original was not available.

Wooster, W.H. 1882

(How the Lerp Crystal Palace is Built.)

Jour. Micros. Soc. Vict., 1, No. 4, p. 91. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

(Gives observations on a Victorian species of Psylla watched while building its cover under the microscope.)

The original was not available.

Trimble, H. 1883

An Exudation from Larix Occidentalis.

Am. Jour. Pharm., 70, p. 152. (Pharm. Jour., 112, p. 389; Proc. Amer. Pharm. Assoc., 46, p. 878.)

Gives description, botanical origin, and use of the product as food by the Indians of British Columbia.

Palmer, E. 1883

Eucalyptus terminalis.

Proc. Roy. Soc. New South Wales, 17, p. 98. (Ibid., 30, p. 291.)

Gives description of tree, methods of collection of the manna, and climatic conditions favoring its occurrence.

Tepper, J. 1883

(Remarks on the Manna or
Lerp Insect of South Australia.)

Journ. Linn. Soc. Zoology, 17, p. 109. (Proc. Roy. Soc. New South Wales, 30, p. 291; Pharm. Jour. 43, p. 161.)

(Gives a general account of the formation of Lerp manna in South Australia.)

The original was not available.

(Committee) 1883

Manna de Briançon.
(Manna Brigantina.)

Encyclopedia Britannica, 9 ed., v. 4, p. 310. (Ency. Brit., 9 ed., v. 15, p. 493.)

"A sweet exudation formed on young larches in the French Alps is weaker in cathartic properties than the official manna but is used in France for same purpose."

Beveridge, P. 1883

Of the Aborigines inhabiting the Great Lacustrine and Riverine Depression of the Lower Murray.

Proc. Roy. Soc. New South Wales, 17, p. 63. (Ibid., 30, p. 291.)

Gives insect origin, time of occurrence, description of laarp manna and fondness of the aborigines for this sweet meat.

Mueller, F. 1884

(Eucalyptus viminalis.)

Eucalyptographia, decade X, p. 464. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

(Gives observations on the manna-producing insects on the above species of Eucalyptus by authorities of varying reliability.)

The original was not available.

(Committee) 1885

Manna.

British Pharmacopoeia, p. 205. (Pharm. Jour. 32, p. 422; Amer. Jour. Pharm., 45, p. 66.)

Gives sources, manner of production, habitat of tree, properties, constituents, tests, and dose of manna.

Husemann, A. & Hilger, A. 1884

Manna.

Die Flanzænstoffe, v. 2, p. 1273.

Gives botanical source and constituents of manna.

Ince, J. 1885

Manna Mixture.

Amer. Drugg. 14, p. 218.

Manna is a safe and effective laxative for children; gives formulae for 2 mixtures thus used.

Markownikoff, V. 1883

Turkestan Manna.

Yr.-bk. Brit. Pharm. Conf., 23, p. 225. (Journ. Chem. Soc., 1885, p. 943; Journ. Russ. Chem. Soc.)

Gives a brief account of its origin, uses, properties.

Aitchison, J.E.T. 1886

Some Plants of Afghanistan, and their Medicinal Products.

Pharm. Jour., 46, p. 465. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Amer. Jour. Pharm., 59, p. 44; Chem. & Drugg., 36, p. 863; Proc. Amer. Pharm. Assoc., 35, p. 116.)

Gives botanical origin, time and manner of collection of Shir-kihst, and Taranjabin mannas, and origin of Gaz-anjabin manna.

Marmé, W. 1886

Manna.

Lehrbuch der Pharmacognosie des Pflanzen und Thierreichs, p. 608.

Gives botanical source, habitat, cultivation and production, physical and chemical properties, constituents, a brief discussion of 7 kinds, use and preparations.

Raby, L. 1889

(African False Mannas.)

L'Union Pharm., 30, p. 201. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683.)

The original was not available.

Cooper, D. 1890

Chemical Notes on Mannas.

Yr.-bk. Brit. Pharm. Conf., 27, p. 503. (Pharm. Jour., 112, p. 388.)

Gives definition, botanical origin, climatic conditions favoring, and general composition and constituents of 11 common varieties of manna.

Jackson, J. R. 1890

Manna-yielding Plants.

Chem. & Drugg., 36, p. 863. (Proc. Amer. Pharm. Assoc., 38, p. 422.)

Gives a description of 10 or more kinds of mannas and of plants yielding them.

(Editor) 1890

Showers of Manna, Edible Lichen, in Turkey in Asia.

Nature, 43, p. 255. (Rem. & Wood, Dispens. U.S.A., 20 ed., p. 682; Ibid., 21 ed., p. 679; West. Drugg., 13, p. 95.)

The lichen Leconora esculenta is believed to be the source of a manna which fell near Diarbekir, Turkey, 1890, and in Persia, 1828.

Passmore, F. W. 1891

Australian Manna.

Pharm. Jour., 50, p. 718. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Yr.-bk. Brit. Pharm. Conf., 28, p. 201; Proc. Amer. Pharm. Assoc., 39, p. 443.)

Gives chemical tests which prove that the sugar of Eucalyptus Gunnii is melitriose.

Hooper, D. 1891

Chemical Notes on Mannas.

Drugg. Circ., 35, p. 4. (Proc. Roy. Soc. New South Wales, 30, p. 291; Yr.-bk. Brit. Pharm. Conf., 27, p. 503.)

Gives definition, chemical composition, and species yielding manna, characteristics of the official ash manna, of 10 other varieties, and of 3 varieties of insect origin.

Jandrier, M. E. 1892

Sur la miellée du platane.

Compt. Rend., 117, p. 498. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 113.)

The exudation found on Platanus orientalis contains 80 to 90% mannite.

Berg, O.C. & Schmidt, C.F. 1893

Fraxinus Ornus Linné.

Atlas der Officinellen Pflanzen, v.2, p. 116. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 103.)

Gives 5 other names, a complete description of the plant, the 2 chief constituents of manna, and its production briefly.

Maiden, J. H. 1893

Myoporum Manna.

Pharm. Jour., 52, p. 608. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 113; Report on Veg. Exudat. collected by the Elder Expl. Expedit.; Proc. Roy. Soc. S.A., v.-, p.-; Proc. Roy. Soc. New South Wales, 30, p. 306; Yr.-bk. Brit. Conf., 53, p. 466; Ibid., 13, p. 166; Pharm. Centralh. 34, p. 80.)

Myoporum manna is practically identical with the manna of Fraxinus Ornus. Gives a quantitative determination of its composition.

Maquenne, M. L. 1893

Sur la composition de la miellée du tilleul.

Bull. Soc. Chim.(3), 9, p. 723. (Pharm. Jour., 112, p. 390.)

This honey dew was found to contain about 40% melizitose.

Ward, J. S. 1893

Notes on Manna Collection in Sicily.

Pharm. Jour., 53, p. 381. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 684; Ibid., 21 ed., p. 679; Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 108; Chem. & Drugg., 43, p. 686; Yr.-bk. Brit. Pharm. Conf., 31, p. 178; Pharm. Jour., (3), 24, p. 381; Drugg. Circ., 37, p. 272; Proc. Am. Pharm. Assoc., 42, p. 919.)

Gives an account of the production of manna near Palermo, Sicily.

——— 1894

Persian Manna.

Chem. & Drugg., 44, p. 790. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681.)

Gives botanical origin and use (sweetmeat) of Gez, a Perzian manna.

Flückiger, F.A. 1894

(Bemerkungen über Manna.)

Mitth. d. naturf. Gesellch. in Bern.(1893), p. 7. (S.G.L.I., 2 ser., v. 10, p. 111.)

The original was not available.

Simmonds, P. L. 1895

Notes on Some Saps and Secretions used in Pharmacy.

Amer. Jour. Pharm., 67, p. 134.

Gives botanical source, description, yield, geographical origin, kinds, use, value of export of Calabrian manna, and a brief discussion of 5 or 6 other kinds.

Peckolt, - 1896

New Sources of Mannite.

Amer. Drugg. & Pharm. Record, 29 (354), p. 4. (Apotheker Zeitung.)

Gives name, constituents and use of a South American plant yielding mannite.

Baker, R. T. & Smith, H. G. 1897

On the Presence of a True Manna on a "Blue Grass", Andropogon Annulatus, Forsk.

Jour. & Proc. Roy.Soc. New South Wales, 30, p. 291. (Rem. & Wood., Dispens., U.S.A., 20 ed., p. 684; Ibid., 21 ed., p. 682; Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 103; S.G.L.I. (2) v.10, p. 111; Chem. & Drugg., 50, p. 260, Pharm. Jour. (4), 6; Yr.-bk. Brit. Pharm. Conf. 35, p. 175; West. Drugg., 20, p. 209; Proc. Amer. Pharm. Assoc., 46, p. 775.)

Gives description of the grass and of the manna found on it, 3 habitats, proof of presence of mannite, 22 other plants having mannite, 16 others from which so-called manna has been used as food or medicine, chemical tests for mannite with 2 plates, bhief constituent of lerp, and origin of name, "manna grass". Leconora esculenta is used by the Arabians as food under name of manna; Glyceria fluitans, also used for food, is called, "manna grass" because its seeds are sweet.

Lloyd, J. U. 1897

California Manna.

Am. Jour. Pharm., 69, p. 337. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 683; Ibid., 21 ed., p. 681; West. Drugg., 19, p. 467; Proc. Amer. Pharm. Assoc., 46, p. 802.)

The saccharine deposit on Phragmites communis caused by aphides is the source of Father Picolo's manna.

Köhler, F. E. & Pabst, G. 1898

Eschenmanna.

Medizinal-flanzen, Taf. 115. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 103.)

Gives Latin and German synonyms, description of the plant, history, production, 3 kinds, chemical properties and uses of ash manna, 10 other varieties, 5 preparations and their uses in different countries, and illustrations.

Kraemer, H. 1898

Qualitative Examinations of Powdered Vegetable Drugs.

Proc. Am. Pharm. Assoc., 46, p. 334. (Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 110.)

Mannite forms long, transparent tetragonal or prismatic crystals of varying length and about 4-10 microns wide; fragments in glycerin leave clear crystals of mannite and little amorphous, opaque residue.

Walbot, A. 1898

(Manna.)

Sur les causes de la presence de la mannite dans le vin et sur les moyens de l'y doser. (S.G.L.I., 2 ser., v. 10, p. 111.)

The original was not available.

Castrey, H. 1899

The Manna of the Hebrews

Pharm. Jour., 62, p. 106a. (Pharm. Jour., 58, p. 152; Yr.-bk. Brit. Pharm. Conf., 36, p. 155; West. Drugg., 21, p. 334; Pharm. Centralh., 39, p. 822; Apoth.-Zeit., 14, p. 36; La Nature, 8.)

Gives use of this manna by the Arabs, its source, and composition.

Swann, A. T.

(Manna.)

Fighting the Slave-driver in Central Africa. (Amer. Jour. Pharm., 92, p. 176; Chem. & Drugg., 107, p. 429; Yr.-bk. Amer. Pharm. Assoc., 9, p. 298.)

(This manna is the only substance which at all agrees with the manna of Scripture.)

The original was not available.

Hooper, D. 1900

Bamboo Manna.

Pharm. Jour., 64, p. 640.

Gives derivation of name, its mention by ancient and modern authors, and properties.

Schenk, G. 1900

(Manna.)

"Over het manniet bij de oleaceae" 8° Meppel 1900. (S.G.L.I., 2 ser., v. 10, p. 111.)

The original was not available.

Marshall, D. R. & Wigner, J. H. 1902

The Pharmacological Action of Manitol Pentanitrate.

Brit. Med. Jour., 2, p. 1231. (S.G.L.I., 2 ser., v. 10, p. 111.)

Gives use, solubility, methods of preparation, pharmacological action, and comparison with erythrol tetranitrate.

Tanret, G. 1902

Chimie Analytique
Sur Deux Sucres Nouveaux Retirés de la Manne.

Compt. Rend., 134, p. 1586. (Bull. Soc. Chim. (3) 27, p. 947; Tschirch, Handbuch der Pharmacognosie, 1 ed., v. 2, p. 110; Chem. & Drugg., 61, p. 660; Yr.-bk. Brit. Pharm. Conf. 40, p. 115; Proc. Amer. Pharm. Assoc., 51, p. 750; Jour. Amer. Pharm. Assoc., 6, p. 22; Yr.-bk. Amer. Pharm. Assoc., 6, p. 208.)

The official manna is 40-60% mannite. Gives preparation, composition, and chemical and physical properties of a tri- and a tetra-saccharide contained in it.

Neuberg, C. & Mayer, P. 1903

Uber krystallisirte i-Mannose.

Ztschr. f. Physiol. Chem., 37, p. 545. (S.G.L.I., 2 ser., v. 10, p. 111.)

Gives results of experiments regarding the optical activity of crystallized i-mannose.

Roux, E. 1904

Sur la mannamine, nouvelle base dérivée du mannose.

Compt. Rend., 138, p. 503., (S.G.L.I., 2 ser., v. 10, p. 111.)

Gives preparation and properties of a derivative of mannose.

Xrayser, - 1905

Manna.

Chem. & Drugg., 64, p. 89.

Discusses briefly the etymology of "Manna."

Stapf, O. 1906

Oil Grasses of Ceylon and India.

Yr.bk. Brit. Pharm. Conf., 44, p. 204. (Proc. Roy. Soc. New South Wales, 30, p. 291.)

A wild grass called "Mana" in Ceylon and Bombe, Ind., yields citronella oil and is probably the original of the cultivated grass of Ceylon and Java.

Hooper, D. 1907

India and the East.
Manna in the Central Provinces.

Chem. & Drugg., 71, p. 75; (Yr.-Bk. Brit. Pharm. Conf., 44, p. 202; Pharm. Jour. (47), 23, p. 258.)

Manna is recorded in an official report from the Schrebera Swietwies.

Watt, G. 1908

Manna.

The Commercial Products of India, p. 929. (Ency. Brit. 14 ed., v. 14; Pharm. Jour., 64, p. 640; Chem. & Drugg., 36, p. 864.)

Under the influence of insects or otherwise, some 13 or 14 plants of India yield "manna" which is used medicinally by the Hindus.

See pp. 100, 102, 110, 111, 888 for specific plants.

Ebert, A. 1908

Beitrage zur Kenntnis einiger seltener Mannasorten und verwandter Körper.

Zeit. Oest. Apoth.-Ver., 46, p. 427. (Rem. & Wood Dispens., U.S.A., 20 ed., p. 685; Ibid., 21 ed., p. 679; Proc. Amer. Pharm. Assoc., 47, p. 357; Apoth.-Zeit., 24, p. 44.)

Discusses manner of production of different types of manna and the origin of biblical manna, with citations of all literature concerning different varieties of manna up to 1908.

Hooper, D. 1909

(Tamarisk Manna.)

Jour. & Proceed. Asiatic Soc. of Bengal, 5, No. 2. (Pharm. Jour., 83, p. 423; Proc. Amer. Pharm. Soc., 58, p. 207.)

(Gives a brief discussion of origin and properties.

The Original was not available.

——— 1909

Du Mannabaum und seine Kultur.

Pharm. Centralh., 50, p. 756. (Mariani, Rom., 1909, p. 25; Südd. Apoth. Ztg., 1909, p. 315; Apoth.-Zeit., 9, p. 248.)

Gives an account of cultivation of the ash manna in Sicily.

Bechtel, F. 1910

Manna.

Catholic Encyclopedia, v.9, p. 604.

Discusses the manna of the Israelites according to the books of the Old and New Testaments, gives references to it in Christian art and liturgy, and states why it is not identical with Tamarisk and Alhagi mannas nor with Leconora esculenta.

Herail, J. 1912

Manne.

Traité de Matière Médicale Pharmacographie, p. 20.

Gives botanical origin, habitat, production, physical and chemical properties, adulteration, uses, and an illustration..

Hooper, D. 1912

Notes on Indian Drugs.

Year-bk. Brit. Pharm. Conf., 49, p. 273. (Pharm. Jour. (4), 35, p. 391; Apoth-Zeit., 21, p. 918.)

Gives a brief account of a manna from "Gardenia turgida."

Tschirch, A. 1912

Eschenmanna.

Handbuch der Pharmakognosie, 1 ed., v.2, p. 103. (Rem. & Wood, Dispens., U.S.A., 20 ed., p. 685.)

Gives synonyms of Sicilian manna in 3 different languages, description of plant and geographical habitat, importance in medicine, cultivation in different districts, varieties, physical and chemical properties, adulteration, and brief descriptions of different historical mannas, with five illustrations.

This is probably the most comprehensive monograph on the ash manna. (Dispens., U.S.A., 21 ed., p. 679.)

Tschirch, A. 1912

"Manna" - "Man-hu."

Handbuch der Pharmacognosie, 1 ed., v. 2., p. 103.

"Manna" from Hebrew, "man", and Arabian "mann" means "Geschenk des Himmels"; or from the Hebrew "man-hu" - "Was ist das?". According to the ancients it was (Gr.)"melea" or "polumelea."

Furlong, J.R. & Campbell, L.E. 1913

New Kind of Manna from Rhodesia.

Yr.-bk. Brit. Pharm. Conf., 50, p. 282. (Proc. Chem. Soc., 29, p. 128.)

Gives a brief description of this manna and its source.

Juel, O. 1913

Ett "Manna-Regen" I Botaniska Trad-Garden I Upsala.

Svensk Bot. Tids, 7, p. 189. (Pharm. Jour., 112, p. 388.)

A rain of manna fell to the ground under an ash tree infested with larvae. The manna, excreted from the insects as a thick liquid, hardened on exposure to the sun. Chemical analysis showed 2 sugars in composition.

Basile, G. & Gallo, N. & Manna, S. 1914

(Manna.)

Traite completo di fisioterapia (etc.) 8°, Napoli. (S.G.L.I., 3 ser., v. 7, p. 955.)

The original was not available.

(Committe) 1914

Manna.

Americana, v.13, p.-.

Gives botanical origin, description, and manner of production in Sicily, properties of flake and Sicilian manna, various false mannas, describes Biblical manna, and states that it cannot be identified with other mannas known. In Australia, the waxen larvae cases of several species of flea-lice that feed upon the Eucalyptus are eaten by the natives under name of "lerp".

Berendes, I. 1914

Manna Libanu.

Paulos' von Aegina. Dis Besten Arztes Sieben Bücher.

"Pliny calls the product of this tree 'manna'".

Battandier, J. A. 1916

Manne produite par des oliviers.

J. Pharm. et de Chim., (7), 13, p. 105; Ibid., 6 s., v.13, p. 177; (S.G.L.I., 3s., v.7, p. 955; Pharm. Jour., 73, p. 303; Chem. & Drugg., 58, p. 594; Yr.-bk. Brit. Pharm. Conf., 53, p. 149; Yr.-bk. Amer. Pharm. Assoc., 5, p. 206; Drugg. Circ., 60, p. 405; Pharm. Centralh., 42, p. 770; Pharm. Zeit., 31, p. 387.)

Gives a brief account of production of manna on olives, and the opinion of a distinguished entomologist, de Pyrimhoff, as to its cause.

Hort, Sir A. 1916

Frax. Ornus.

Theophrastus, Enquiry into Plants, v.1 & 2, p. 171.

Gives habitat, discussion of growth, 2 kinds, description and uses of wood.

Maske, W. 1917

Manna as an Excipient for Soft Pill Masses.

Jour. Amer. Pharm. Assoc., 6, p. 1658. (Jahr. der Pharm., 42, p. 342; Ibid., 46, p. 246; Yr-bk. Brit. Pharm. Conf., 55, p. 307; Ibid., 49, p. 328; Pharm. Zeit., 56, p. 723.)

Gives advantages of manna as a pill excipient and 2 formulae for its use.

Wall, O. A. 1917

Manna.

Handbook of Pharmacognosy, 4 ed., p. 532.

Gives definition, botanical source, habitat, description, chief constituent, use, dose, and 2 kinds of manna.

——— 1918

Manna - Italian Varieties.

Yr.-bk. Amer. Pharm. Assoc., 7, p. 269. (Boll. Chim. Pharm; Drugg. Circ., 62, p. 501.)

Gives 6 varieties marketed in Italy and constituents briefly.

Compston, H.F.B. 1919

Manna.

Dictionary of the Bible, p. 576.

Gives origin of the word, description and properties of Biblical manna; Biblical description would not in every point support identity with Tamarisk and other mannas; it is likened to bdellium, a resinous exudation; 5 quotations which show that Biblical authors regarded this manna as miraculous.

Christ as the "living bread" is typified by manna. (John vi - 31 ff.)

Davidson, J. 1919

(Douglas Fir Manna.)

Can. Nat., p. 9. (Pharm. Jour., 112, p. 390.)

(The leaves of this tree, gorged with excess of sugar, exude from their tips on hot days, a liquid containing sugar.

This manna closely resembles larch manna and is a natural exudation from the tips of leaves - J.R.Weir.)

The original was not available.

Keller, - 1919

(Larch Manna.)

Natur u. Technik, 8, p. 233, 5. 17. (Pharm. Jour., 112, p. 390; Schweiz. Zeit. Fortwesen, June 1920, p. 216; Jour. Forest. Suisse, Oct., 1920, p. 181.)

(This manna is a honey dew voided by swarms of aphis and solidified by sun and dry air.)

The original was not available.

Laufer, B. 1919

(Arabian Tarandjabine Manna.)

Sino-Iranica, p. 343, Field Museum of Nat. Hist., Chicago, Pub. No. 201, p.-. (Pharm. Jour., 112, p. 388; S.G.L.I., 3 ser., v.7, p. 955.)

(This manna was known to the Chinese in the 7th century as "sweet dew" and "thorn honey". It was used as syrup in Central Asia and in sugar factories.)

The original was not available.

Tanret, G. 1919

Sur la miellée du Peuplier.

Compt. Rend., 169, p. 873. (Pharm. Jour., 112, p. 370; West. Drugg., 25, p. 150.)

The sugary coating of honeydew on leaves of poplars seen in hot days contains melezitose.

Wherry, E. 1919

The Crystallography of Melezitose.

Jour. Chem. Soc., 42, p. 125. (Pharm. Jour., 112, p. 390.)

Gives crystallography and optical properties of a sample from Pennsylvania.

Dickie, - (J. R. Weir) 1920

(Melezitose.)

Amer. Forestry, Feb. 1920, p. 84. (Pharm. Jour., 112, p. 387.)

(Melezitose is used as a culture medium for discrimination of pathogenic bacteria. It sold in N.Y., 1920, at $60 per lb.; it is not prepared artificially, but is found in various mannas and is the poisonous element (to bees) in honeydew gathered from pines.)

The original was not available.

Holmes, E. M. 1920

Biblical Manna.

Chem. & Drugg., 92, p. 750. (Rem. & Wood, Dispens., U.S.A., 21 ed., p. 679; S.G.L.I., 3 ser., v. 7, p. 955; Am. Jour. Pharm., 92, p. 174, Chem. & Drugg., 107, p. 429; Ibid 92, p. 25; Amer. Drugg., 68, p. 72; West. Drugg., 24, p. 499; Jour. Amer. Pharm. Assoc., i, p. 1044; Yr.-bk. Amer. Pharm. Assoc., 5, p. 203; Ibid., 9, p. 298; Ibid., 16, p. 255; Pharm. Centralh., 66, p. 806.)

The manna of the Israelites is a fungus practically identical with that found by A. T. Swann in Central Africa.

Hudson, C. & Sherwood, S. 1920

The Occurrence of Melezitose in a Manna from Douglas Fir.

Jour. Am. Chem. Soc., 42, p. 1456. (Pharm. Jour., 112, p. 388.)

Gives the percentage of melezitose found in the manna of the Douglas Fir, and in tarandjabine manna, and states that it was found in honey collected by bees in Pennsulvania in 1917.

Rose, M. S. 1920

Expts. on the Utilization of Salep Mannan.

Jour. Biol. Chem., 42, p. 159. (S.G.L.I., v.7, p. 955.)

Gives coefficient of digistibility, determination of, influence on nitrogen output, fate in diabetic organism, glycogen formation in rabbits, and a summary.

Marchmay, T. A. 1921

(What is Manna?)

Scient. Am. Month., N.Y., 3, p. 414. (S.G.L.I., 3 ser., v. 7, p. 955.)

(The modern variety is compared with the Biblical food.)

The original was not available.

Charaux, C. 1922

Sur la manne du Caroubier et le sucre retiré de cette manne.

Bull. Soc. Chim. Biol., 4, p. 597. (S.G.L.I., 3 ser., v.7, p. 955; Yr.-bk. Brit. Pharm. Conf., 60, p. 139; Jour. Pharm., et Chim., 26, p. 437.)

Gives habitat, physical and chemical properties, method of extraction of its sugar and its properties, and identity of this sugar with pinite or methyl d-inosite.

Reutter, L. 1923

Manna, Manne de Fraxinus Ornus, L.

Traité de Matière Médicale, p. 173.

Gives description of tree, and cultivation, commercial varieties, properties, adulteration, dose, constituents, 3 preparations, and sources of 5 kinds of manna.

Henry, A.? 1924

Manna of Larch and of Douglas Fir, Melezitose and Lethal Honey.)

Pharm. Jour., 112, p. 387. (Ibid., 117, p. 300.)

Gives occurrence of March manna in France and Switzerland, its similarities to Douglas Fir manna, theories of the origin of these mannas, and of most cases of manna rain, description and history of 5 other mannas, properties of honeydew collected by bees and of melezitose.

Rosenthaler, - 1926

Mannite in Jalap.

Drugg. Circ., 70, p. 929. (Arch. Pharm., 8, p. 561.)

Crystals identical with mannite were found in the water extract of jalap.

Haas, P. & Hill, T. G. 1928

Mannitol.

Chem. of Plant Products, 4 ed., v.1, p. 70.

Mannitol, a polyhydric alcohol, occurs in the official manna to the extent of 40-50%.

Haas, P. & Hill, T. G. 1928

Melecitose.

Chem. of Plant Products, 4 ed., v. 1, p. 70.

This sugar occurs in the sap of Larix europaea, in Persian manna, and especially in that exuded from Pseudotsuga Douglasii; gives chemical properties.

(Editor) 1928

Definition of Manna in Italy.

Chem. & Drugg., 108, p. 4.

Gives substance of a law of Italy of Aug. 12, 1927, regarding manna.

(Committee) 1929

Manna.

Encyclopedia Britannica, 14 ed., v. 14, p. 815; Ibid., p. 34; Ibid., p. 816; Ibid., v. 8, p. 624.

Gives a general discussion of manna and states that Biblical manna closely resembles tamarisk manna. "This manna is almost certainly a kind of honeydew".

(Committee) 1929

Calomel.

Encyclopaedia Britannica, 14 ed., v. 4, p. 620.

It was used in medicine as early as the 16th century under the name "Manna metallorum."

(Editorial) 1929

Peruvian Manna.

Pharm. Jour., 123, p. 583. (Ducloux, Rev. facultad. cieno. quim., 5 (11), 73; Chem. Abstr., 23, p. 3251.)

Gives a brief account of this manna.

Wasicky, R. 1929

Manna.

Lehrbuch der Physiopharmakognosie für Pharmazeuten, v.1, p. 285.

Gives definition, sourse, habitat, 6 Italian commercial varieties, characteristics and percent of mannite, cultivation, chemical properties, use, preparations, constituents of the official variety, use in Germany since the 16th century, and 2 probable sources of Biblical manna.

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UNITED STATES PHARMACOPOEIA (0-X)

(1820-1920)

and

NATIONAL FORMULARY (I-V)

(1886-1926)

HISTORY

of

MANNA

U.S.P., - 1820, P. 40

Manna — Fraxinus ornus. W. IV. 1104.

Manna — Succes concretus. The concrete/ juice.

U.S.P., - 1830, (N.Y.) P. 44

Manna — Fraxinus ornus/

Manna

Prop. In oblong pieces or flakes of a granular texture, and whitish/, or pale-yellow colour; dry, friable, semi-transparent; nearly inodo/rous; taste, a nauseous, sweet, with a slight degree of bitterness; en/tirely soluble in water.

Med. Oper. Laxative.

Dose, ½-2 oz./

U.S.P., - 1830, (Phil.) P. 16.

Manna — Fraxinus ornus. W.iv. 1104/

Manna — Succus concretus./ The concrete juice/

U.S.P., - 1840, P. 26.

Manna. Manna

The concrete juice of Ornus Europaea (Per/soon).

U.S.P., - 1850, P. 30.

Manna. Manna

The concrete juice of Ornus Europaea (Per/soon, Synopsis Plantarum, i. 9/

U.S.P., - 1860, P. 36.

Manna. Manna

The concrete juice, in flakes, of Fraxinus/ Ornus, and of Fraxinus rotundifolia./

U.S.P., - 1870, P. 37.

Manna. Manna

The concrete saccharine exudation in flakes, of/ Fraxinus Ornus, and of Fraxinus rotundifolia./

U.S.P., - 1880, P. 216.

Manna

Manna

The concrete, saccharine exudation of Fraxinus Ornus Linné (Nat. Ord.,/ Oleaceae).

In flattish, three-edged pieces, occasionally eight inches (20 centimeters) long,/ and two inches (5 centímeters) broad, usually smaller; friable; externally yellowish-/white, internally white, porous, and crystalline; or in fragments of different/ sizes, brownish-white and somewhat glutinous on the surface, internally white and/ crystalline; odor honey-like; taste sweet, slightly bitter and faintly acrid. It is/ slowly but almost completely soluble in 15 parts of boiling alcohol. Sp. gr. o. 834./

Manna consisting of brownish, viscid masses containing few or no fragments of/ a crystalline structure, should be rejected./

Preparation: Infusum Sennae Compositum.

U.S.P., - 1890, P. 252.

Manna

Manna

The concrete, saccharine exudation of Fraxinus Ornus Linné (nat./ ord. Oleaceae).

In flattish, somewhat three-edged pieces, occasionally 20 cm. long, and 5/ cm. broad, usually smaller; friable; externally yellowish-white, internally/ white, porous, and crystalline; or in fragments of different sizes, brownish-/ white and somewhat glutinous on the surface, internally white and crystalline;/ odor, honey-like; taste, sweet, slightly bitter and faintly acrid./

On heating 5 parts of Manna with 100 parts of alcohol to boiling, and filtering, the filtrate should rapidly deposit separate crystals of mannite./

Manna consisting of brownish, viscid masses containing few or no fragments/ of a crystalline structure should be rejected./

Preparation: Infusum Sennae Compositum./

U.S.P., - 1900, P. 285.

Manna

Manna

The concrete saccharine exudation of Fraxinus Ornus Linné (Fam. Oleaceae).

In irregular, more or less elongated, flattish, 3 sided pieces; externally yellow-/ish-white; friable, somewhat waxy; internally whitish, porous, and crystalline;/ odor, suggestive of maple sugar; taste, sweet, slightly bitter and faintly acrid./

On heating 5 parts of Manna with 100 parts of alcohol

to boiling, and filter-/ing, the filtrate should rapidly deposit crystals of mannite./

Average Doze, 16 Gm. (240 grains).

U.S.P., - 1910, P. 267.

Manna

Manna

The dried saccharine exudation of Fraxinus Ornus Linné (Fam. Oleaceae)./

In irregular, more or less elongated, flattened, 3-sided pieces; externally yel-/lowish-white; friable; somewhat waxy; internally nearly white, porous and crystal-/line in appearance; odor, slight, but characteristic; taste, sweet, slightly bitter and faintly acrid. Manna also occurs in irregular masses, consisting in part of/ brittle or soft, resin-like fragments; from yellowish-white to yellowish-gray in/ color. The quantity of the yellowish-white fragments must not be less than 40/ per cent of the whole.

Add 5 Gm. of Manna to 100 mils. of alcohol, heat to boiling and filter; on/ cooling, the filtrate rapidly deposits crystals of mannite.

Preparation, Infusum Sennae Compositum/

Average Dose, Metric, 15 Gm. - Apothecaries, 4 drachms./

U.S.P., - 1920, P. 233

Manna

Manna

Manna is the dried exudation of Fraxinus Ornus Linné (Fam. Oleaceae)./

Manna yields not less than 75 per cent of anhydrous alcohol/-soluble extractive, when extracted with boiling 90 per cent alcohol, by volume./

Description and physical properties - In irregular, more or less elongated, flattened, 3-sided pieces; externally yellowish-white; friable; internally nearly/ white, porous and crystalline in appearance; odor, slight, but characteristic;/ taste, sweet, slightly bitter and faintly acrid. Also in irregular masses, consist-/ing in part of brittle or soft fragments from yellowish-white to yellowish-gray/ in color. The quantity of these yellowish-white fragments must not be less/ than 40 per cent of the whole.

Assay --- Proceed as directed under alcohol-soluble extractive, page 466, using/ boiling 90 per cent alcohol, by volume, and filter rapidly through purified/ cotton while hot, washing the cotton with boiling alcohol./

Average Dose - Metric, 15 Gm. - Apothecaries, 4 drachms./

SUMMARY OF
UNITED STATES PHARMACOPOEIA (0-X)
(1820-1920)
and
NATIONAL FORMULARY (I-V)
(1888-1926)
DATA
OF
MANNA

When official:

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

Official Latin Title:

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

Official English Title:

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

Official Abbreviation:

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Official Synonym:

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Botanical Source:

Fraxinus Ornus, U.S.P. 1820; '30 (N.Y.), '30 (Phil.); Ornus Europaea, U.S.P. 1840; 1850;

Fraxinus Ornus and Fraxinus rotundifolia U.S.P. 1860; 1870;

Fraxinus Ornus Linné, U.S.P. 1880; 1890; 1900; 1910; 1920.

Family:

(nat. ord., Oleaceae). U.S.P. 1880; 1890.

(Fam. Oleaceae). U.S.P. 1900; 1910; 1920.

Description:

The concrete juice, U.S.P. 1820; 1830 (Phil.); 1840; 1850.

The concrete juice in flakes, 1860.

The concrete saccharine exudation, in flakes, 1870.

The concrete saccharine exudation, 1880; 1890; 1900.

The dried saccharine exudation, 1910.

The dried exudation, 1920.

Preparations:

Infusum Sennae Compositum, U.S.P. 1880; 1890; 1910.

Infusum Sennae Compositum, N.F. v; Syrupus Mannae, N.F. v.

Average Dose: ½-2 oz. U.S.P. (n.Y.) 1830;
16 Gm. - 240 grains - 1900.
Metric - 15 Gm.- Apothecaries, 4 drachms, U.S.P. 1910; 1920.

APPROVED BY W.O. Richtmann

Professor of Pharmacognacy.