BIBLIOGRAPHY

of

OLEUM MORRHUAE

by

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A THESIS SUBMITTED for a DEGREE of

BACHELOR of SCIENCE

(PHARMACY)

UNIVERSITY of WISCONSIN

1938

BIBLIOGRAPHY

Villars, Caron du 1834

Sur l'emploi de l'huile de morue.

Jour. d. pharm. et d. chim., 26, p. 377. (Am. Jour. Pharm., 6, p. 327)

Cod liver oil is used for chronic rheumatism and a vermifuge against the lombrice and ascarides. A description of the process of obtaining the oil and methods of administering it are also given.

Duclon, ___(not available) 1839

(Syrup of Cod Liver Oil)

Bull. Gen. de Therapeut., ___, p. ___. (Am. Jour. Pharm., 11, p. 82)

(A formula for a syrup of cod liver oil is given. The oil has been given by injection, and employed externally by means of friction in larger doses.)

The original was not available.

Rudder, D. 1848

Emploi des vessies natatoires pour administrer l'huile de foie de morue.

Jour. de Chim. Med., s. 3, v. 4, p. 101. (Am. Jour. Pharm., 20, p. 310)

Bladders of common river fish can be used to administer cod liver effectively in place of capsules which are expensive, hard to prepare, and of less capacity. Describes how the bladders are filled and taken by the patient.

Pereira, J. 1849

On Cod Liver Oil.

Pharm. Jour., 8, p. 370. (Am. Jour Pharm., 21, p. 136; 23, p. 97)

The oil is obtained from the livers of the species of the tribe Gadidae especially the dorse, coal fish and pollark. Three varieties of cod liver oil are: 1. pale yellow, 2. pale brown, 3. dark brown. Among the constituents of the oil are the glycerin salts, acetic acid, butyric acid and phosphorus.

Duclos, M. 1851

(Cod Liver Oil in Phthisis.)

Bull. de Therapeut., 38, p. 490. (Am. Jour. Pharm., 23, p. 86)

(Experimenting with the oil in cases of phthisis, it was found that: 1. the remedy frequently stops the disease in the first stage; 2. it may retard the disease in the second stage; 3. the third stage is not effected very much. Also concluded that the oil should be administered for a considerable length of time.)

The original was not available.

Proctor, W. 1851

Remarks on Cod Liver Oil.

Am. Jour. Pharm., 23, p. 97.(Disp., U. S. A., 9 Ed., p. 507; 10 Ed., p. 507; 11 Ed. p. 531; 12 Ed., p. 584; 13 Ed., p. 600; 14 Ed., p. 625)

Gives a description of the fish, zoological sources, different "types of oil ", extraction of the oils, distribution for public use, tests of the oil, modes of administering, and preservation of the medicinal oil.

Rabourdain, H. 1851

Essai sur le dosage de l'iode dans les substances organiques a l'aide du chloroforme.

Compt. Rend., 31, p. 784. (Chem. Gaz., 9, p. 39; Am. Jour. Pharm., 23, p. 161)

Describes a method for determining the amount of iodine present in cod liver oil by means of chloroform.

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

Oleum Morrhuae. U.S., Dub.

Disp., U.S.A., 9 Ed., p. 507; 10 Ed., p. 507; 11 Ed., p. 531; 12 Ed., p. 584; 13 Ed., p. 600; 14 Ed., p. 625; 15 Ed., p. 1019; 16 Ed., p. 1060; 17 Ed., p. 946; 18 Ed. p. 946.

Gives pharmacopoeial definitions, synonyms, zoological sources with descriptions of the fish, preparation, general properties of the oil, tests of purity, medical properties and uses.

Chevallier, J.B., and Gobley, T. 1852

Sur les proportions d'iode contenues dans les huiles de foie de morue.

Jour. de Chim. Med., s. 3, v. 7, p. 660. (Am. Jour. Pharm., 24, p. 171)

Gives a method of finding the amount of iodine in cod liver oil and a record of the data obtained.

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

Oleum Jecoris Aselli.

Eclectic Disp., U.S.A., 1 Ed., p. 276.

Gives history, properties and some important uses of cod liver oil.

Winckler, F.L. 1852

Bëtrage zur genaueren Kenntniss der chemischen Zusammensetzung des Leberthrans.

Buch. Neues Rep. fur Pharm., 1, p. 165. (Pharm. Jour., 12, p. 36; Am. Jour. Pharm., 24, p. 343; Disp., U.S.A., 11 Ed., p. 533; 12 Ed., p. 586; 13 Ed., p. 601)

Gives constituents of oil, proof that it is different from other fatty oils, and discusses its efficacy.

1852

(Administration of Cod Liver Oil)

Gaz. Med. de Lyons, ___, p. ___. (Prov. Med.& Surg. Jour., 15, p. 523; Am. Jour. Pharm., 24, p. 172)

(Three formulas for different preparations of cod liver oil are given, with the dose of each. The disagreeable flavor of the oil may be disguised by hot milk or coffee.)
The original was not available.

Murray, J. 1854

Improvements in Deodorizing Cod Liver Oil.

Pharm. Jour., 13, p. 188. (Am. Jour. Pharm., 26, p. 82)

Carbonic acid is brought into contact with cod liver oil which is deodorized.

Robinson, H.E. 1854

On Cod Liver Oil.

Am. Jour. Pharm., 26, p. 1. (Disp., U.S.A., 11 Ed., p. 531; 12 Ed., p. 586; 13 Ed., p. 600; 14 Ed., p. 625)

Gives the zoological sources of the oil, description of fish, manner of obtaining the oil, its chemical composition, physical properties, medicinal properties and value, and adulterations.

Sauvan, L. 1854

(Mode of Administering Cod Liver Oil.)

Ann. Cliniq. de Montpelier, ___, p. ___. (Am. Jour. Pharm., 26, p. 472)

(The taste and odor of the cod liver oil are entirely masked by a prparation containing the yoke of egg, sugar, orange flower water, cod liver oil, and essence of bitter almonds.)

The original was not available.

Thompson, T. 1854

On The Changes Produced In The Blood By The Administration of Cod Liver Oil and Cocoa-Nut Oil.

Chem. Gaz., 12, p. 275. (Am. Jour. Pharm., 26, p. 421)

The administration of cod liver oil to phthisical patients resulted in their blood becoming richer in red corpuscles. Cocoa-nut oil had the same effect. Experiments were carried out and the resulting statistics on the red corpuscles are given.

Bastick, W. 1855

Medicated Cod Liver Oil.

Pharm. Jour., 15, p. 475. (Am. Jour. Pharm., 27, p. 319)

Describes the preparation of a solution of cod liver oil with quinine.

Maisch, J.M. 1856

Convenient Modes For Administering
Cod Liver Oil.

Am. Jour. Pharm., p. 1.

Gives 3 formulas for administering cod liver oil and a description of how these preparations should be made.

Horsley, R. 1857

Cod Liver Oil with Quinia and Other Substances.

Pharm. Jour., 17, p. 36. (Proc. Am. Pharm. Assoc., 6, p. 66)

Solutions of quinia, iodide of arsenic, and other substances are commonly mixed with cod liver oil by a patented process in England.

Proctor, W. Jr. 1858

Oil of Dugong, A Substitute for
Cod Liver Oil.

Lond. Chem., ___, p. ___. (Am. Jour. Pharm., 30, p.335; Disp. U.S.A., 15 Ed., p. 1020; 16 Ed., p. 1060; 17 Ed., p. 947)

The aboved named oil comes from Australia. Gives a description of the animal, dugong, from which it is obtained, and discusses the good qualifications of the oil.

Smith, E. 1858

Cod Liver Oil.

Proc. Am. Pharm. Assoc., 7., p. 75.

Gives the results of the use of cod liver oil in more than 500 cases of phthisis. Concludes that cod liver oil does not cure phthisis; the disease progresses just as well when cod liver oil is used; in about half of the cases the rate of progress was retarded.

Vezu, M. 1858

Sur la solubilite du fer et du protoxyde de
fer gelatineux dans l'huile de foie de morue.

Rep. d. Pharm., 13, p. 407. (Am. Jour. Pharm., 30, p. 99; Proc. Am. Pharm. Assoc., 7, p. 61)

Metallic iron reduced by hydrogen dissolves in cold cod liver oil without changing the color. The gelatinous protoxide of iron dissolves in cold cod liver oil with greater facility, its humidity promoting the solution.

Wells, ___(not available) 1858

(Cod Liver Oil in Capsules.)

Med. Times & Gaz., ___, p.___. (Proc. Am. Pharm. Assoc., 7, p. 63)

(The author recommends the administration of cod liver oil, when combined with quinia, iodide of iron, bin iodide of mercury, in capsule form. The taste of the oil is overcome in this way.)

The original was not available.

1858

(Gelatinized Cod Liver Oil.)

Bull. Gen. de Therapeut., ___, p. ___. (Am. Jour. Med. Sciences., ___, p. ___; Proc. Am. Pharm. Assoc., 7, p.62)

(A formula for gelatinizing cod liver oil is given in which gelatin, Irish and Iceland moss, and spermacetii are employed.)

The original was not available.

Proctor, W. Jr. 1859

Cod Liver Oil.

Am. Jour. Pharm., 31, p. 500. (Disp., U.S.A., 12 Ed., p. 584; 13 Ed., p. 599; 14 Ed., p. 624)

In a report on the progress of pharmacy it was stated that " about 24,000 gallons of cod liver oil are obtained annually on the coast between Boston and Eastport, Maine.

Fewtrell, W.T. 1860

Some Specimens of Dugong Oil.

Chem. News, ___, p. ___. (Am. Jour. Pharm., 32, p. 230; Disp. U.S.A., 15 Ed., p. 1020; 16 Ed., p. 1060; 17 Ed., p. 947)

Gives place where dugong oil is found, different varieties of fish, description of the animal, habitat, description of the oil and its substitution for cod liver oil.

Jeannel, G. 1860

Note sur les moyens de desinfecter et de parfumer l'huile de foie de morue.

Rep. de Pharm., 16, p. 414. (Proc. Am. Pharm. Assoc., 9, p. 101)

Gives a formula for chalybeate cod liver oil and a method of preparation. It must be kept free from exposure to the air, as it soon becomes rancid and sometimes resinifies.

Jeannel, G. 1861

Note sur les moyens de desinfecter et de parfumer l'huile de foie de morue et l'huile de rian.

Jour. d. pharm. et d. chim., s. 3, v. 38, p. 360. (Am. Jour. Pharm., 33, p. 339)

States that a small amount of essential oil of bitter almond will cause the nauseous odor and fishy taste of the oil to disappear. The same result is obtained with cherry-laurel water.

_____ 1861

Ueber Oleum Jecoris Aselli Ferratum.

Arch. d. Pharm., 104, p. 270. (Am. Jour. Pharm., 33, p. 317)

Protosulfate of iron digested with a specified amount of cod liver oil gives a deep brown mixture which contains about 1 % of iron.

Fonssagrives, __ (not available) 1862

(Cream as a Substitute for Cod Liver Oil.)

Bull. de Therapeut., ___, p. ___. (Am. Jour. Pharm., 34, p. 189)

(Discusses the use of cream as a substitute for cod liver oil when taken in an undiluted form, sweetened or flavored with vanilla. It may also be taken with rum.)
The original was not available.

Neininger, S. 1862

Quantitative Bestimmung des Jods im Leberthran.

Neues Jahrb. d. Pharm., 16, p. 134. (Am. Jour. Pharm., 34, p. 331)

Cod liver oil is saponified with caustic soda; the soap is incinerated and the ashes are exhausted with alcohol and then the oil is precipitated with nitrate of palladium. Data obtained show that 0.055 % of iodine is present.

Dufourmantel, ___ (not available) 1863

(Cod Liver Oil Jelly.)

Gaz. Med., 14, p. ___. (N. Rep., 11, p. 131; Proc. Am. Pharm. Assoc., 11, p. 70)

(Gives a formula and method of preparation for cod liver oil jelly.)

The original was not available.

Dufourmantle, ___ (not available) 1864

Gelee d'huile de foie de morue.

Jour. d. pharm. et d. chim., s. 3, v. 45, p. 72. (Am. Jour. Pharm., 36, p. 113; Disp., U.S.A., 12 Ed., p. 588; 13 Ed., p. 603)

The jelly is made with the cod liver oil, isinglass and water in the following proportion: 30 grams of cod liver oil, 2 grams of isinglass, and enough water to dissolve the isinglass. The dose is one large tablespoonful.

King, J. 1864

Oleum Morrhuae (Leberthran).

Am. Disp., 6 Ed., p. 646; 8 Ed., p. 565; 10 Ed., p. 563.

Gives a single pharmacopoeial definition description, history, three types of, composition, properties and uses of cod liver oil.

Barr, J. 1866

(Cod Liver Oil and Extract.)

Lond. Chem. News, ___, p. ___. (Am. Jour. Pharm., 38, p. 142)

(A table is given exhibiting the comparitive composition of cod liver oil and cod liver extract.)

The original was not available.

Jeannel, G. 1866

(Cod Liver Oil and Castor Oil.)

St. Louis Med. & Surg. Jour., 3, p. 279. (Proc. Am. Pharm. Assoc., 14, p. 192)

(These 2 oils have been agreeably flavored with essential oil of bitter almonds and laurel water.)

The original was not available.

Soubeiran, L.J. 1866

Fabrication de l'huile de foie de morue en Danemark.

Jour. d. pharm. et d. chim., s.4, v.4, p. 324. (Am. Jour. Pharm., 38, p. 215)

Years ago cod liver oil was obtained by the process of fermentation or putrefaction; now the livers are heated to extract the oil. Gives a detailed description of the apparatus used by several of the manufacturers in Norway.

Adolphus, J. 1867

The Several Modes of Administering Oleum Morrhuae.

Am. Jour. Pharm., 39, p. 273.

Cod liver oil is exceedingly nauseous to many people and has a very lasting taste. This is induced by: 1. prejudice against the oil, 2. nervous stomach conditions preventing digestion of the oil, and 3. idiosyncracy. The first may be overcome by persistence. In the second one the digestive force is disturbed. Oil with lime water forms a soap and flavored with oil of bitter almonds is an excellent form. The third condition must be overcome by adding to the oil an equal volume of glycerin. Aromatic spirit of ammonia relieves disturbances due to cod liver oil.

Ricker, A. 1867

Ueber die Bereitung von Oleum Jecoris Aselli Ferratum.

Neues Jahrb. d. Pharm., 26, p. 158. (Proc. Am. Pharm. Assoc. 15, p. 158)

Cod liver oil is converted into a soap with caustic soda lye and precipitated with a solution of sodium chloride. This is precipitated from water by protosulfate of iron. One ounce of the finished product represents about 1 grain of metallic iron.

Rowland, G. 1867

Emulsion of Cod Liver Oil.

Proc. Am. Pharm. Assoc., 15, p. 157.

Gives a formula for disguising the taste of cod liver oil. The formula includes 100 parts of cod liver oil, 60 parts of alcohol and 3 parts of essence of peppermint. The dose is one tablespoonful.

Sinimberghi, ___(not available) 1867

On a new Proces for the Preparation of Cod Liver Oil with Iodide of Iron, by Which Decomposition of the Iodide and Injury to the Oil are Prevented.

Pharm. Jour., s.2, v. 26, p. 277. (Proc. Am. Pharm. Assoc., 15, p. 158)

Cod liver oil and ether are mixed and a portion of this is added to protosulfate of iron, iodide of potassium and a small amount of reduced iron. The precipitate is allowed to settle and the clear liquid decanted off. The same is done for the rest of the mixture of cod liver oil and ether. 1 fluidounce contains 4 grains of FeI.

Howden, R. 1868

Lofoden Norwegian Cod Liver Oil.

Pharm. Jour. 27, p. 312. (Disp., U.S.A., 15 Ed., p. 1020; 16 Ed., p. 1060; 17 Ed., p. 947; Am. Jour. Pharm., 11, p. 147)

The migration of cod fish, methods of capturing the cod, bait used, disposing of livers, preparation of the oil, places where cod are found in abundance, differences in types of oil, and the advantages of making oil in Norway are severally discussed.

Jacobsen, E. 1868

Rosanilin als Reagens auf Freie Fettsauren und Lebertran.

Neues Jahrb. fur Pharm., 27, p. 101. (Am. Jour. Pharm., 11, p. 336.)

Rosanilin is insoluble in neutral fatty oils, but dissolves at once with a pale red color if the oil is rancid. This substance therefore can detect bleached cod liver oil.

Foster, B.A. 1869

Etherized Cod Liver Oil.

Pharm. Jour., 10, p. 440. (Am. Jour. Pharm., 41, p. 176)

Ether stimulates the secretion necessary to digest fats, and promote the absorption of these fats when digested. Ether is given in combination with the oil. Etherized cod liver oil can increase the weight of the person.

Maisch, J.M. 1870

Note on Cod Liver Oil from Portsmouth, N.H..

Am. Jour. Pharm., 42, p. 214.

The harbor of Portsmouth, N.H. is very well fitted for the fishing trade and all conditions are very well adapted to carrying out the work. A detailed description of the cod fishing through the final preparation of the oil is given.

--- 1870

Cod Liver Cream.

Pharm. Jour., 29, p. 633. (Am. Jour. Pharm., 42, p. 247)

Gum tragacanth mixed with water diffuses cod liver oil into separate particles. Spirit of wine is added as a preservative. The finished product is as sweet as the average custard.

Beck, M.O. 1871

(Administration of Cod Liver Oil Saponified by Lime.)

Jour. de Pharm. d'Anvers, 28, p. 32.(Yrbk. Brit. Pharm. Conf., 8, p. 396)

(Cod liver oil saponified by lime to form a soap is given in the form of pills or dragees. The doses of these preparations are also given.)

The original was not available.

Hager, H. 1871

Als Geschmackscorrigens des Leberthrans.

Neues Jahrb. fur Pharm., 35, p. 35 (Yrbk. Brit. Pharm. Conf., 8, p. 427.

A small amount of Chloroform renders cod liver oil perfectly agreeable to the taste. It does not interfere with the quality of the oil.

Pavesi, C. 1871

(Removal of the Odour and Taste of Cod Liver Oil.)

Jour. de Pharm. d'Anvers, 27, p. 314. (Yrbk. Brit. Pharm. Conf., 8, p. 427.)

(Digestion of Cod Liver Oil with roasted coffee and animal charcoal removes the disagreeable taste and odor.)

The original was not available.

1871

(Chloralhydrate and Cod Liver Oil)

Gaz. farm. ital. , ___, p. ___. (Pharm. Zeit., 10, p. ___; Am. Jour. Pharm., 43, p. 373.)

(Chloral hydrate renders cod liver oil more palatable, diminishes night sweats, produces sound sleep, and improves the apetite. The dose is 6 tablespoonfuls daily.)

The original was not available.

Duquesnel, H. 1872

(Use of the Essence of Eucalyptus Globulus to Disguise the Odor and Taste of Cod Liver Oil.)

Bull. de Therap., ___, p. ___. (Rev. de Therap., ___, p. ___; Med. News and Library, ___, p. ___; Am. Jour. Pharm, 44, p. 420)

(One hundred parts of cod liver oil mixed with 1 part of the essence of eucalyptus removes the taste and odor of the oil. Just flavor of the essence remains. This can be preserved a long time.)

The original was not available.

Tissier, A. 1872

Sur la preparation d'un saccharure d'huile de foie de morue.

Jour. d. pharm. et d. chim., 93, p. 370. (Pharm. Jour., 31, p. 584; Am. Jour. Pharm., 44, p. 114; Yrbk. Brit. Pharm. Conf., 9, p. 384)

A formula and method of preparation are given for saccharated cod liver oil. Finely powdered sugar and simple syrup are included in the formula. The product must be kept in well-closed containers.

Duquesnel, H. 1873

Huile de foie de morue a l'essence d'eucalyptus.

Jour. d. pharm. et d. chim., s.4, v.15, p. 383. (Am. Jour. Pharm., 45, p. 302; Proc. Am. Pharm. Assoc., 21, p. 267; Yrbk. Brit. Pharm. Conf., 9, p. 385)

Claims that 1 % of oil of eucalyptus covers the odor and taste of cod liver very completely.

Moffitt, W.G. 1873

Emulsions of Cod Liver Oil.

Am. Jour. Pharm., 45, p. 154. (Yrbk. Brit. Pharm. Conf., 10, p. 271)

The formula for an emulsion of cod liver oil in combination with iron is given.

Muller, J. 1873

Eisenhaltiger Leberthran.

Archiv. d. Pharm., 203, p. 534. (Am. Jour. Pharm., 46, p. 111; Proc. Am. Pharm. Assoc., 22, p. 69)

Used 1 part of sublimed ferric chloride in 100 parts of cod liver oil. This became black and rancid.

One part of benzoate of iron with light cod liver oil (100 parts) upon trituration gives a clear filtrate. Benzoin is a source for the above salt (may impart a urinous odor to the oil.)

Rice, M. Jr. 1873

Emulsion of Cod Liver Oil.

Am. Jour. Pharm., 45, p. 530.

Many attempts had been made to improve the mode of administration for cod liver oil. Gives the following formula for an emulsion including Oleum morrhuae, tragacanth, white saccharum, Oleum gaultheriae, Oleum sassafras and Oleum Amygdalae amarae.

Wayne, E.S. 1873

(Cod Liver Oil Mixture.)

Cin. Lancet and Observer, ___, p. ___. (Am. Jour. Pharm., 45, p. 471)

(A mixture of eggs, lemon juice, honey, cod liver oil and brandy or whiskey forms a permanent emulsion and offers a very pleasant and valuable therapeutic agent. Glycerin may be used in place of honey. The formula for the preparation is also given here.)

The original was not available.

Mattison, R.V. 1874

(Pancreatic Emulsion of Cod Liver Oil.)

Am. Jour. Pharm., 46, p. 53. (Proc. Am. Pharm. Assoc., 22, p. 66)

Gives a formula for a pancreatic emulsion of cod liver oil.

It is a better emulsion than one made with gum arabic or gum tragacanth. To make the emulsion white a little may replace an equal volume of water.

Rice, W. M. 1874

Emulsion of Cod Liver Oil.

Am. Jour. Pharm., 46, p. 530. (Yrbk. Brit. Pharm. Conf., 11, p. 349).

Gives a formula for an emulsion of cod liver oil in which the taste of the oil is masked perfectly.

Sandahl, O.T. 1874

(Gelatina Olei Jecoris Aselli.)

Vierteljahr. f. Pract. Pharm., 22, p. 603. (Yrbk. Brit. Pharm. Conf., 11, p. 372)

(A formula for the above named preparation is given. Cod liver oil taken in this manner may be in the form of pills. It remains in the stomach long enough to ensure complete assimilation.)

The original was not available.

Bernbeck, C. 1875

Oleum Jecoris Aselli Ferratum.

Archiv. d. Pharm., 207, p. 21. (Am. Jour. Pharm., 47, p. 397; Proc. Am. Pharm. Assoc., 24, p. 87; Yrbk. Brit. Pharm. Conf., 13, p. 339)

The method of preparation of oleinate of iron is given from which the ferrated oil is prepared. This ferrated oil has a mild taste and contains about 1 % of metallic iron.

Close, G.C. 1875

Glyconated Emulsion of Cod Liver Oil.

Am. Jour. Pharm., 47, p. 339.

Disagrees with the opinions of McElhenie that glyconin, without fixed oil of almonds, separates., Glyconin consists of 4 parts, by volume, of the yolks and 5 of glycerin.

M'elkenie, T. D. 1875

Glyconated Emulsion of Cod Liver Oil.

Am. Jour. Pharm., 47, p. 294. (Proc. Am. Pharm. Assoc., 24, p. 86; Yrbk., Brit. Pharm. Conf., 13, p. 340)

In a letter from Flatbush, Long Island, gives a formula and method of preparation of a glyconated emulsion of cod liver oil which is claimed to be a nerve and brain food. It is well borne by the moist delicate stomach as it does not nauseate, and does not separate the ingredients.

Stiles, M.H. 1875

Cod Liver Oil with Quinine.

Pharm. Jour., 34, p. 641. (Am. Jour. Pharm., 47, p. 325; Yrbk. Brit. Pharm. Conf., 12, p. 394)

Quinine was first prepared by precipitating it from an aqueous solution of a salt of quinine with ammonia and an ethereal solution of it was then mixed with the oil. This proved unsatisfactory because of the presence of ether.

The oleate of quinia was then dissolved in cod liver oil. This has a pleasant taste, is free from rancidity, and forms a very reliable product.

Wilder, H.M. 1875

(Phosphorized Cod Liver Oil.)

Ny. Pharm. Tid., ___, p. 298. (Am. Jour. Pharm., 47, p. 536)

(0.02 gram of phosphorus dissolves in 30.0 grams of cod liver oil upon heating.)

The original was not available.

(Commission) 1876

(Cod Liver Oil with Ferrous Iodide.)

Nieu Tyd. voor de Pharm. in Ned., ___, p. ___. (Pharm. Jour., 36, p. 28; Am. Jour. Pharm., 48, p. 511)

(Iodine, pulverized iron and cod liver oil are used in the preparation. Exposure to light liberates iodine so it should not be prepared long in advance.)

The original was not available.

Mattison, R.V. 1876

Cod Liver Oil with Extract of Malt

Am. Jour. Pharm., 48, p. 534 & 569.

Extract of malt and cod liver oil make a perfect emulsion, no gum being necessary. The preparation has double the nutrient value of the other emulsions of cod liver oil, and consists of 50% each of cod liver oil and extract of malt.

Chiles, E. 1878

Cod Liver Oil and Lacto Phosphate of Lime

Am. Jour. Pharm., 45, p. 104. (Yrbk. Brit. Pharm. Conf., 15, p. 380.)

Gives a formula and method of preparation of an emulsion of cod liver oil with calcium phosphate.

Krohn, L.M. 1878

Lebertran

Pharm. (aceutishe) Handelsblatt, 105, p.___;(New Remedies, v. 7, p. 80; U.S.A. Disp., 15 Ed., p. 1020; 16 Ed., p. 1060; 17 Ed., p. 947.)

Tells about fishing for cod on the shores of Norway, preparing the oil, types of oil, pricing the oil, absence of adulterations in the oil in Norway, and uses of the different types of oil.

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du Bell, A. 1879

Oleum Jecoris Aselli ferratum.
(Cod Liver Oil with Iron)

Pharm. Ztg., 24, p. 103., (Am. Jour. Pharm., 51, p. 194.)

1 part of chrystallized ferric chloride ($Fe_2Cl_6 \cdot 6 H_2O$), 2 parts of concentrated lactic acid and 200 parts of cod liver oil gives a clear solution with the odor of cod liver oil and a mild, pleasant taste.

Gilmour, W. 1879

Cod Liver Oil Emulsions.

Pharm. Jour., 38, p. 773., (Am. Jour. Pharm. 51, p. 259; Yrbk. Brit. Pharm. Conf., 16, p. 230.)

Gum tragacanth is the best emulsifier. A complete formula is given for the emulsion. 3 drachms of tragacanth emulsify from 50 to 80 ounces of primary emulsion. Cautions in preparing the emulsion are also given.

Husemann, J. 1879

Ueber Leberthran- Sorten.

Zeitschr. des oesterr. Apoth. Ver., 16, p. 386. (Yrbk. Brit. Pharm. Conf., 16, p. 151.)

Claims that there is no active principle in cod liver oil and that the therapeutic value of the oil is due to the mixture of glycerides of the fatty acids present. Preference is given to the white oil over the yellow oil.

Stille, A, and Maisch, J. 1879

Oleum Morrhuae, U.S., Br.

Nat. Disp., 1 ed., p. 979; 2 ed., p. 1000; 3 ed., p. 1068; 5 ed., p. 1132

Gives zoological origin, synonyms, methods of preparation, properties, composition, adulterations, physiological action, medical uses, and methods of administration.

Throhn, M. 1879

(Production of Cod Liver Oil in Norway in 1878.)

Pharm. Handelsble., 1879, p. 7, (Am. Jour. Pharm., 51, p. 194)

(Gives statistics on the amount of each individual type of cod liver oil produced in Norway in 1878.)
The original was not available.

_____ 1879

(Iodoformized Cod Liver Oil)

New Orleans Med. and Surg. Jour., 32, p.___ (Yrbk. Brit. Pharm. Conf., 16, p. 292.)

(Gives a formula for dosage of an iodoformized cod liver oil.)
The original was not available.

Fonssagrives, J.B. 1880

Lebertran mit Iodoform.

Pharm. Zeitschr. f. Russl., 19, p. 562. (Am. Jour. Pharm., 52, p. 601; Yrbk. Brit. Pharm. Conf., 18, p. 256)

To render cod liver oil more palatable 0.25 grams of iodoform are dissolved in 100 grams of cod liver oil and 10 drops of oil of anise are added. The latter improves the odor and taste of cod liver oil.

Hager, H. 1880

Malt Extract with Cod Liver Oil.

Chem. & Drugg., 22, p. 13. (Yrbk. Brit. Pharm. Conf., 17, p. 309)

Gives a formula for the preparation of malt extract with cod liver oil.

Fairthorne, R.F. 1881

The Administration of Cod Liver Oil.

Am. Jour. Pharm., 53, p. 98.

One ounce of the oil is mixed with 2 fluidrachms of tomato catsup or walnut catsup. This mixture is quite palatable and agreeable.

Vanderburg, E.A. 1881

Analysis of Iodine-Iron Cod Liver Oil.

Pharm. Jour., 40, p. 189. (Proc. Am. Pharm. Assoc., 29, p. 304; Yrbk. Brit. Pharm. Conf., 18, p. 242)

Light colored oil when subjected to combustion may leave a trace of iron but no other ashy ingredients. Other so called constituents, therefore, no doubt originate from vessels and reagents used. Directions are also given for the analysis of iodo-ferrated cod liver oil.

Bird, M. 1882

Amount of Iodine Present in Cod Liver Oil.

Am. Jour. Pharm., 54, p. 143.

Gives a method for determining the amount of iodine present. The amount of iodine was found to be the inverse proportion to the oils sensitiveness to cold. The amount of iodine was not as high as 0.05 %.

Carles, P. 1882

Sur l'huile de foie de morue.

Rep. de Pharm., 10, p. 13. (Pharm. Jour., 41, p. 604; Am. Jour. Pharm., 54, p. 302)

Reports that better methods of extraction have produced a clear oil with an agreeable odor and taste. The natural pale oils are better than the brown empyreumatic oils. There are slight traces of iodine, bromine and phosphorus present and the combination of cod liver oil with another medicine does not increase its therapeutic effect.

Langendorf, E. & Zweifel, G. 1882

(The Disadvantages of Cod Liver Oil for Young Children.)

Cinc. Lancet & Clinic, ___, p. ___. (Am. Jour. Pharm., 54, p. 88)

(Fatty matters are very little suited to the alimentation of newly-born infants. The pancreatic juice of the infant possess an emulsive power which is almost nil. Fatty oils such as cod liver oil can easily impair the digestive functions.)

The original was not available.

Henry, W.A. 1883

Deodorized Cod Liver Oil and Iron.

New. Rem., 11, p. 361. (Proc. Am. Pharm. Assoc., 31, p. 64)

Gives a formula and method of preparation for the above claiming it is a very acceptable product.

Stanford. E.C.C. 1885

On Iodine in Cod Liver Oil and Other Marine Products.

Pharm. Jour., 44, p. 233. (Am. Jour. Pharm., 56, p. 582; Proc. Am. Pharm. Assoc., 33, p. 230; Yrbk. Brit. Pharm. Conf., 20, p. 528)

Gives statistics on the various amounts of iodine found in different types of cod liver oil.

Chapoteaut, P. 1886

(Morrhuol, The Active Principle of Cod Liver Oil.)

L'Union Pharmaceutique, 36, p. 525. (Am. Jour. Pharm., 58, p. 19; Yrbk. Brit. Pharm. Conf., 23, p. 234)

(A method for obtaining morrhuol and its properties are given. Discusses the other constituents of cod liver oil. The brown type of oil contains the most morrhuol. The dose is 20 centigrams.)

The original was not available.

Rossler, J.L. 1886

(Test for the Purity of Cod Liver Oil.)

Zeit. fur Analyt. Chem., 24, p. ___. (Yrbk. Brit. Pharm. Conf., 23, p. 234)

(Aqua regia gives a dark green color with cod liver oil which becomes brown in half an hour.)

The original was not available.

Mason, A.H. 1887

On Cod Liver Oil.

Proc. Am. Pharm. Assoc., 35, p. 384.

The Chairman on the Committee on the Drug Market says that Newfoundland oil is at 60 to 75 cents a gallon; adulteration with seal oil is common; the catch of fish this year is a comparative failure; and that the price will not go up much because of the large supply of oil on hand.

Mylius, E. 1887

Oleum Jecoris Aselli.

Pharm. Centralhl., 27, p. 515. (Arch. d. Pharm., 224, p. 1025; Proc. Am; Pharm. Assoc., 35, p. 58; Am. Jour. Pharm., 58, p. 609)

Reccommends that cod liver oil soap be precipitated by ferric chloride, and then this iron soap dissolved in cod liver oil. The product is neither bitter nor acrid in taste.

Tscheppe, A. 1887

Emulsion of Cod Liver Oil-Preparation with Irish Moss as the Emulsifier.

Pharm. Rec., 7, p. 82. (Proc. Am. Pharm. Assoc., 35, p. 58)

Gives a formula for an emulsion of cod liver oil with irish Moss as the emulsifying agent. This is a very simple emulsion to prepare.

--- 1887

Ein Neues Falschungsmittel Leberthrans.

Pharm. Zeitschr. f. Russl., 25, p. 792. (Proc. Am. Pharm. Assoc., 35, p. 283)

Paraffin oil is a new adulterant of cod liver oil, and it can be detected readily by its failure to saponify.

Anderson, R.B. 1888

The Norwegian Cod Liver Oil Industry.

Am. Drugg., 17, p. 61. (Proc. Am. Pharm. Assoc., 36, p. 411)

Mr. Anderson, United States Consul General at Copenhagen gives an account of the Norwegian Cod Liver Oil Industry. Describes the method in which the livers are prepared, and also different methods by which the oil is obtained from the fish.

Gautier, A. & Mourgues, L. 1888

(Morrhuic Acid in Cod Liver Oil.)

L' Union Pharm., 39, p. ___. (Am. Jour. Pharm., 61, p. 137)

(Morrhuic Acid is unstable, " acting both as an acid and as an alkali ". A detailed list of its physical and chemical properties are given.)

The original was not available.

Gautier, A. & Mourgues, L. 1888

Sur les alcaloides de foie de morue.

L' Union Med., 39, p. 237. (Am. Jour. Pharm., 60, p. 511)

Half of the alkaloids present are fixed bases. Butylamine, amylamine, and hexylamine are present. Small quantities of lecithine and gaduinic acid are also present.

Hyerdahl, ___ (not available) 1888

(Rancidity of Cod Liver Oil.)

Chem. Ztg., ___, p. 1475. (Am. Jour. Pharm., 60, p. 613)

(Experimental data are given to prove that the rancidity of the oil is due to exposure to air and that it is not due to the presence of free fatty acids.)

The original was not available.

Marpmann, H. 1888

Ein Neuer Bestandtheil des Leberthrans.

Pharm. Centralhl., 29, p. 407. (Pharm. Jour., 48, p. 288; Proc. Am. Pharm. Assoc., 37, p. 499; Am. Jour. Pharm. 60, p. 570)

Obtained a new substance by washing the oil with 95 % alcohol. Gives the chemical and physical properties and also the results of several tests which were obtained by experimentation upon the substance.

Mering, J.V. 1888

Lipanin, Ein Ersatzmittel fur Leberthran.

Pharm. Ztg., 33, p. 102. (Am. Jour. Pharm., 60, p. 243 & p. 410)

Lipanin has been recommended as a substitute for cod liver oil. It is prepared by partial saponification of pure olive oil. Its physical and chemical properties are also given.

Poel, G. 1888

Leberthranverfalschung.

Pharm. Post, 21, p. 37. (Am. Jour. Pharm., 60, p. 244; Proc. Am. Pharm. Assoc., 36, p. 412)

Calls attention to the adulteration of cod liver oil with 50 % of mineral oil, and no suspicion was aroused by its taste or appearance.

Andres, H. 1889

Zur Werthbestimmung des Leberthrans.

Pharm. Zeitschr. f. Russl., 28, p. 145. (Am. Jour. Pharm., 61, p. 248)

A means of testing the presence of iodine in cod liver oil is given. Only cod liver oil that contains iodine should be used medicinally. The acidity must be very low.

Bouchard, C. 1889

(Creosote and Cod Liver Oil.)

Jour. d. pharm. et d. chim., ___, p. ___. (Am. Jour. Pharm., 61., p. 428 & p. 559)

(These two substances have been combined for use in chronic catarrhal affections with the adult dose of 1 tablespoonful in the morning and night.)

Gautier, A. & Mourgues, L. 1889

Sur les alcaloides de l'huile de foie de morue.

Jour. d. pharm. et d. chim., s. 5, v. 18, p. 289. (Am. Drugg., 18, p. 8; Proc. Am. Pharm. Assoc., 37, p. 500)

Found several new alkaloids which are constantly being formed in animals and which the animal is constantly trying to get rid of through secretions. Gives a process for extracting the alkaloids. The alkaloids consist of bases which are classified according to the boiling points of the different fractions.

Gautier, A. & Mourgues, L. 1889

Sur les alcaloides de foie de morue.

Jour. d. pharm. et d. chim., s. 5, v. 18, p. 535. (Proc. Am. Pharm. Assoc., 37, p. 714)

A study of the alkaloids in cod liver oil have shown after separating volatile alkaloids from the crude bases a brown mass which yields fatty matter and fixed alkaloids to ether. This is soluble in weak HCl.

King, J. 1889

Oleum Morrhuae (Leberthran).

Am. Disp., 16 Ed., p. 563.

Gives definition, description, history and source, types of, composition, properties, uses and dosage of cod liver oil.

Mc Donnell, S.A. 1889

Morrhuol.

Am. Jour. Pharm., 61, p. 442.

Morrhuol is obtained by digesting cod liver oil with alcohol. 3.5 % of extract resulted upon evaporation. Results were found as to its therapeutic value.

Nagelvoort, J.B. 1889

Een waarschuwing bij levertraanonderzolkingen op plantaardige olien.

Nieuw Tijdschr. voor Pharm.,Chem. en Toxikol., 41, p. 305. (Am. Jour. Pharm., 62, p. 95)

Upon the analysis of cod liver oil, needle-shaped crystals mixed with other small crystals were found which gave the following cholesterin reaction: becoming reddish-brown with sulfuric acid and changing to a dirty green upon the addition of water.

Unger, M. 1889

(Observations Upon Cod Liver Oil.)

Jour. de Pharm. d'Anvers, 46, p. ___. (Am. Jour. Pharm., 61, p. 560)

(Various experiments pertaining to the following indicate that 1. phosphorus and iron in the cod liver oil are combined with albumen;2. in brown oils the albuminoids decompose.)

The original was not available.

--- 1889

Administration of Cod Liver Oil.

Am. Jour. Pharm., 61, p. 517.

Cod liver oil is combined with an equal quantity of lime water; the mixture then flavored with vanilla, lemon, or some other aromatic.

Gautier, A. & Mourgues, L. 1890

Sur l'huile de foie de morue.

Jour. d. pharm. et d. chim., s.5, v. 21, p. 253. (Am. Jour. Pharm., 62, p. 365)

The white oils are better than the brown oils which may be the product from altered livers. Describes the preparation of the oil, and characteristics of the oil in Newfoundland and Bergen. Bases in cod liver oil were classified

according to the boiling points of the different fractions. Different organic fractions, acids, were also found in the oil. Properties of these various constituents are given (Morrhuic acid is the chief constituent of the oil). The action of these constituents is the excitement of the nervous system, production of sweat and an increased appetite.

Isdahl, J.C. (U.S. Vice Consul) 1890

Cod Liver Oil-
Statistics of the Norwegian Fisheries.

Am. Drugg., 18, p. 213. (Proc. Am. Pharm. Assoc., 38, p. 507)

Gives some interesting statistics concerning the cod fishing in Norway. The report includes the catch of fish, the size of the fish, and the yield of oil.

Nagelvoort, J.B. 1890

(Quantitative Estimation of Cod Liver Oil In The Malt Extract with Cod Liver Oil Preparations.)

Am. Jour. Pharm., 62, p. 289.

(Malt extracts with cod liver oil were experimented with and an emulsion was made. Statistics of the emulsion including the specific gravity as the author prepared it are also given.)

The original was not available.

Unger, H. 1890

Observations sur l'huile de foie de morue.

Jour. d. pharm. et d. chim., s.5, v. 20, p. 206. (Proc. Am. Pharm. Assoc., 38, p. 508)

Based upon personal experiments it is concluded that phosphorus and iron in the oil are combined with albumin; albuminoid bodies undergo no changes in good oil; and that acid separates albuminoids from the oil.

Dieterich, E. 1891

Oleum Jecoris Aselli Ferratum.

Pharm. Centralhl., 32, p. 138. (Proc. Am. Pharm. Assoc., 39, p. 309; Yrbk. Brit. Pharm. Conf., 40, p. 274)

Gives a formula and method of preparation of a ferrated cod liver oil. The final product contains about 0.5 % of metallic iron.

Moerk, F.X. 1891

Ferrated Cod Liver Oil.

Am. Jour. Pharm., 63, p. 191.

The method of preparation of a ferrated oil is given. The finished product is a clear, dark brown oil which contains 0.5 % of metallic iron.

Unger, H. 1891

Oleum Jecoris Aselli.

Pharm. Ztg., 35, p. 685. (Chem. & Drugg., 37, p. 777; Proc. Am. Pharm. Assoc., 39, p. 462; Yrbk. Brit. Pharm. Conf., 28, p. 229)

Gives the results in a table, the data for which he obtained upon examining 4 fresh samples of Lofoden oil. The report includes the specific gravity, the amount of free fatty acid and the presence of an albumen ring.

Bienert, J. 1892

Oleum Jecoris Aselli-Verfalschung.

Pharm. Zeitschr. fur. Russl., 31, p. 104. (Proc. Am. Pharm. Assoc., 40, p. 804; Am. Jour. Pharm., 64, p. 235)

Speaks of a cod liver oil he found in Russia which upon examination was found to be 95 % of a yellowish vaselin oil and 5 % of cod liver oil.

Janssen, A. 1892

Oleum Jecoris Aselli Arsenical.

Pharm. Ztg., 36, p. 780. (Am. Jour. Pharm., 64, p. 83)

This preparation consists of arsenious oxide warmed with alcohol and added to a small amount of potassium carbonate and the cod liver oil. It is a preparation used in childrens diseases and can be given in doses of from ½ to 1 teaspoonfuls.

Moeller, P. 1892

Cod Liver Oil-Improved Manufacture.

Am. Drugg., 20, p. 315. (Proc. Am. Pharm. Assoc., 40, p. 804)

Rancidity is due to the oxidizing action of the air upon the fatty acids of the oil. A process preventing access of air during the trying out of the oil is described. A constant current of carbonic acid is passed through the boilers at all times which displaces the air.

Van Aspern, P. 1892

Emulsions of Cod Liver Oil and Castor Oil.

Pharm. Jour., 51, p. 332. (Yrbk. Brit. Pharm. Conf., 29, p. 232)

Instead of a solution of potash a 20 % solution of a potash soap is used for emulsification.

Weber, F. 1892

Medicinische Thrane-
Oleum Jecoris Ferratum. Eisenthran.

Schwz. Wochenschrift f. Chem. u. Pharm., 30, p. 112. (Am. Jour. Pharm., 64, p. 233; Proc. Am. Pharm. Assoc., 40, p. 804)

Ferrated cod liver oil contains anhydrous sublimed ferric chloride and cod liver oil (3 parts of ferric chloride in 1000). This contains 0.1 % of metallic iron.

Iodized oil has 1 part of iodine and 999 parts of cod liver oil. Iodo ferrated oil has 2 parts of iron, 4 of iodine and 40 parts of cod liver oil.

_____ 1892

(Exhibition of Cod Liver Oil.)

Rev. de Therapeut., ___, p. 641. (Am. Jour. Pharm., 64, p. 136)

(Equal volumes of cod liver oil and lime water give a preparation easily borne by a delicate stomach. It is pleasant tasting and assimilation takes place very readily.)

The original was not available.

_____ 1892

(Corrective for Cod Liver Oil.)

Gazz. d. Ospit., 73, p. ___. (Am. Jour. Pharm., 64, p. 473)

(100 grams of cod liver oil are flavored with 3 or 4 drops of a mixture consisting of the volatile oils of wintergreen, 4, sassafras, 4, and neroli, 2, parts.)

The original was not available.

_____ 1892

(Ferrated Cod Liver Oil.)

Bull. de la Societe de Pharm., Bordeaux, ___, p. 341. (Am. Jour. Pharm. , 64, p. 78)

(A formula for and method of preparation of a ferrated cod liver oil is given.)

The original was not available.

Bouillot, J. 1893

Des alcaloides de l'huile de foie de morue de leur origine et de leurs effets therapeutiques.

Compt. Rend., 116, p. 439. (Pharm. Jour., 52, p. 807; Proc. Am. Pharm. Assoc., 41, p. 843)

According to experiments the alkaloids exist in the hepatic tissue and are not the result of a fermentative process. The alkaloids should be administered as a whole. Also gives the physical and chemical properties and the uses of the mixture of alkaloids found in cod liver oil.

Dieterich, E. 1895

Aromatic Cod Liver Oil.

Chem. & Drugg., 46, p. 111. (Yrbk. Brit. Pharm. Conf., 32, p. 201)

Offers a formula for an aromatic cod liver oil.

Parry, E.J. & Sage, C.E. 1895

Cod Liver Oil Constants.

Am. Jour. Pharm., 67, p. 470. (Proc. Am. Pharm. Assoc., 44, p. 662; Yrbk. Brit. Pharm. Conf., 32, p. 334)

Various data relating to the oil such as specific gravity,. saponification value, iodine value, melting point, amount of free fatty acid and others are given.

Revilliod, ___ 1895

(Nutrient Enema of Cod Liver Oil.)

Med. Mod., ___, p. ___. (Zeitschr. des oesterr. Apoth. Ver., 33, p. 381; Yrbk. Brit. Pharm. Conf., 32, p. 201)

(Suggests a formula for an emulsion of cod liver oil. This emulsion is used for injection into the body.)

The original was not available.

Sherrard, C.C. 1895

Cod Liver Oils.

Am. Jour. Pharm., 67, p. 491.

The cod fish of this country ought to be able to be used for the production of as good an oil as is produced in Europe.

Arblaster, P.C. 1896

Cod Liver Oil Emulsion-
Preference to Irish Moss as an Emulsifier.

Pharm. Jour., 56, p. 254. (Proc. Am. Pharm. Assoc., 44, p. 411)

Discusses the various kinds of cod liver oil, their preparation, and their emulsification. Irish Moss was preferred as the emulsifying agent.

Dulier, W. 1896

(Cod Liver Oil- Pharmacopoeial Characterization.)

Annales de Pharm., 2, p. 41. (Pharm. Jour., 56, p. 164; Proc. Am. Pharm. Assoc., 44, p. 662)

(Upon examination found that the specific gravity stated in the Belgian Pharmacopoeia too low, and recommends the addition of a maximum acidity permissible, as well as limits within which the saponification and iodine number, index of refraction and heat evolved with sulfuric acid.)

The original was not available.

Gay, F. 1896

Etude pratique sur les emulsions d'huile de foie de morue.

Rep. de Pharm. s.3, v. 7, p. 241. (Chem. & Drugg., 47, p. 436; Proc. Am. Pharm. Assoc., 44, p. 410; Yrbk. Brit. Pharm. Conf., 33, p. 188)

Concludes that the mortar and pestle must be used for emulsification; gums are the best emulsifiers; and the strength of emulsions should be 50 % cod liver oil.

Martindale, F.C. 1896

Phosphorated Cod Liver Oil.

Pharm. Jour., 56, p. 201. (Proc. Am. Pharm. Assoc., 44, p. 433)

Phosphorated cod liver oil contains about one hundreth of a grain of phosphorus per fluidrachm. It is made by adding 1 volume of the official phosphorated oil to 59 volumes of cod liver oil. It is unpalatable and quickly oxidizes but may be stored in capsules.

———— 1896

Zur Geschmacksverbesserung des Leberthrans.

Zeitschr. des oesterr. Apoth. Ver., 34, p. 511. (Yrbk. Brit. Pharm. Conf., 33, p. 187)

Gives the formula for a very palatable preparation of cod liver oil. The finished product is pale yellow, and possesses the taste and odor of cod liver oil with coffee.

———

Schneider, A. 1897

Ein Geschmackskorrigens fur Leberthran.

Pharm. Ztg., 41, p. 393. (Merck's Rep., 5, p. 358; Proc. Am. Pharm. Assoc., 45, p. 580)

Cod liver oil mixed with a small amount of coffee and animal charcoal will, upon heating and then left to stand, acquire the odor and taste of coffee. This process does not decrease the therapeutic value of the cod liver oil.

———

———— 1897

Newfoundland Cod Liver Oil.

West. Drugg., 19, p. 63. (Proc. Am. Pharm. Assoc., 45, p. 579)

Cod Liver Oil obtained from Newfoundland is increasing in abundance. When the oil is made properly, it compares favorably with the best Norwegian Oil, being rich in vitamin content and freer from stearin.

———

Bricemoret, E.P. 1898

Sur l'administration d' l'huile de morue.

Jour. des Pract., 12, p. ___. (Am. Jour. Pharm., 70, p. 113; Yrbk. Brit. Pharm. Conf., 35, p. 250)

A formula was given which contained cod liver oil, 15 ounces, syrup of tolu, 7.5 ounces, tincture of tolu, 12 drops, and essence of cloves, 2 drops. The dose is a tablespoonful two or three times a day, the bottle being well shaken before the dose is poured out.

———

Dowzard, E. 1898

Cod Liver Oil- Detection of Seal Oil by Means of the Oleorefractometer.

Pharm. Jour., 60, p. 532. (Proc. Am. Pharm. Assoc., 46, p. 888)

Seal oil is unlike other animal oils and can not be tested for its presence in cod liver oil by means of the color reaction with the nitric acid. A table including the amount of cod liver oil, seal oil, and the refractometer figure at 22°C. is given.

Francis, J.M. 1898

Cod Liver Oil- Therapeutic Efficiency Dependent Upon its Food Value.

Bull. Pharm., 42, p. 104. (Proc. Am. Pharm. Assoc., 46, p. 889)

Disagrees with some people who believe that the " alkaloids " or " active principles " of cod liver oil can replace cod liver oil itself. Believes it should be classified as a food and therefore a therapeutic agent in itself.

Gundlich, C. 1898

Cod Liver Oil- Absence of Iodine and Bromine.

Jour. Pharmacol., 4, p. 223. (Am. Jour. Pharm., 69, p. 644; Proc. Am. Pharm. Assoc., 46, p. 888)

Cod liver oil, crude, or morrhuol does not contain either iodine or bromine. The different samples did, however, all contain amine derivatives.

Williams, J. K. 1898

A Simple Apparatus for Preparing Cod Liver Oil Emulsion.

Chem. & Drugg., 51, p. 464. (Yrbk. Brit. Pharm. Conf., 35, p. 208)

Describes an apparatus something like an old-fashioned churn and its operation in making emulsions.

(Commission of German Apothecaries Union) 1899

Prufung von Oleum Jecoris.

Zeitschr. des oesterr. Apoth. Ver., 37, p. 406. (Yrbk. Brit. Pharm. Conf., 36, p. 182)

Suggests and describes what they feel should be an official test for the purity of cod liver oil.

Reboul, E. 1899

Oleum Jecoris Jodatum.

Zeitschr. des oesterr. Apoth. Ver., 37, p. 83. (Yrbk. Brit. Pharm. Conf., 36, p. 249.)

Gives a formula for a preparation of cod liver oil containing a given proportion of iodine.

Reboul, E. 1899

Dosage de l'iode dans l'huile de foie de morue.

Bull. d. Soc. d. Pharm. d. Sud-Ouest., 3, p. 292. (Pharm. Jour., 61, p. 325; Proc. Am. Pharm. Assoc., 47, p. 583)

Describes a method for determining the amount of iodine present in cod liver oil.

Arny, H.V. 1900

Cod Liver Oil Emulsions

Proc. Ohio Pharm. Assoc., 21, p. 39. (Proc. Am. Pharm. Assoc., 48, p. 453; Yrbk. Brit. Pharm. Conf., 37, p. 198 & p. 199)

Discusses cod liver oil emulsions in general and gives the formula and criticism of 4 individual emulsions including Irish Moss Emulsion of Cod Liver Oil, Egg Emulsion of Cod Liver Oil, Glycerin Emulsion of Cod Liver Oil and Malt Emulsions of Cod Liver Oil.

Brissemont, ___ (not available) 1900

(Cod Liver Oil Balsam.)

Bull. de Pharm. de Lyon, 22, p. ___. (Apoth. Ztg., 15, p. 126; Proc. Am. Pharm. Assoc., 48, p. 454)

(The formula includes cod liver oil, syrup of tolu, and oil of cloves. An emulsion does not form, but it should be shaken before each dose. The product has the aromatic taste of balsam of tolu.)

The original was not available.

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

Oleum Morrhuae (U.S.P.)

Kings Am. Disp., 18 Ed., 3 rev., v. 2, p. 1368.

Gives pharmacopoeial definitions, synonyms, source and history, preparation, description, adulterations and tests, chemical composition, action, medicinal uses, and dosage and some related oils.

Leger, E. 1900

Sur l'emulsion d'huile de foie de morue.

Jour. d. pharm. et d. chim., s. 6, v. 9, p. 572. (Pharm. Jour., 63, p. 174; Proc. Am. Pharm. Assoc., 48, p. 454)

Uses casein as an emulsifying agent in preparing the emulsion. The formula and method of preparation are given.

Rauitz, B. 1900

(Cod Liver Oil- Preparation and Adulteration in Norway.)

Deutsche Med. Wochenschr., 13, p. ____. (Pharm. Ztg., 45, p. 261; Proc. Am. Pharm. Assoc., 48, p. 670)

(In Norway cod liver oil is prepared in 2 ways; 1. steam method, 2. cold method. Gives a description of the cold process. Germany uses the oil prepared by the cold process. Oil obtained from a species of the shark is used as an adulterant.)

The original was not available.

Rohden, L. 1900

Ueberfettete Leberthranseife.

Pharm. Centralhl., 40, p. 707. (Yrbk. Brit. Pharm. Conf., 37, p. 210)

The product contains soft soap mixed with 20 to 40 % cod liver oil. It is used for external application in tuberculosis.

Mitchell, R.S. 1901

Cod Liver Oil- Therapeutic Constituents and Value.

West. Drugg., 23, p. 68. (Proc. Am. Pharm. Assoc., 49, p. 749)

Cod liver oil is the most universally used remedial agent in existence. It is of value in tuberculosis and rickets especially. There is no active principle present; it is a food pure and simple. Cod liver oil should not be mixed with anything unless the mixture is taken immediately after it is made.

Nobel, J.W.M. 1901

(Sulphurated Cod Liver Oil-Preparation.)

Pharm. Weekbl., 38, p. ___. (Pharm. Ztg., 45, p. 988; Proc. Am. Pharm. Assoc., 49, p. 583)

(Heating purified sulphur with cod liver oil at 125°C. for about 7 hours, no sulphur is deposited on standing, thereby forming a good sulphurated cod liver oil.)

The original was not available.

--- 1901

(Ferrated Cod Liver Oil.)

Jour. Pharm. d'anvers, 56, p. 465. (Yrbk. Brit. Pharm. Conf., 38, p. 187)

(Gives a formula for a ferrated cod liver oil.)

The original was not available.

Bedall, C. 1902

Zur Prufung des Leberthrans.

Pharm. Centralhl., 43, p. 118. (Proc. Am. Pharm. Assoc., 50, p. 900)

Calls attention to his observation that a sample of pure cod liver oil when shaken with fuming nitric acid failed to give the rose color described by the German Pharmacopoeia, 4 Ed.. The reaction took place when the fresh oil was used.

Desesquelle, E. 1902

(Iodoform and Cod Liver Oil.)

Rev. d. Pharm., 11, p. 12. (Yrbk. Brit. Pharm. Conf., 39, p. 241)

(Gives a formula for a preparation of cod liver oil and iodoform; and a flavoring agent for the product.)

The original was not available.

Vigier, P. 1902

Emulsion d'huile de foie de morue.

Jour. d. pharm. et d. chim., s.6, v. 14, p. 49. (Yrbk. Brit. Pharm. Conf., 39, p. 224)

Gives a formula and method of praparation of cod liver oil emulsion.

Wieden, P. 1902

(Ferrated and Iodo-ferrated Cod Liver Oil- Determination of Iron Content.)

Pharm. Weeklbl., 39, p. ___. (Pharm. Ztg., 47, p. 352; Proc. Am. Pharm. Assoc., 50, p. 739)

(Gives a procedure for determining the amount of iron in iodo-ferrated cod liver oil.)

The original was not available.

1902

Lebertran mit Pancreatin.

Pharm. Ztg., 47, p. 639. (Chem. & Drugg., 74, p. 241; Am. Lour. Pharm., 74, p. 603)

Gives a formula and method of preparation for the above mentioned product.

Bourquellot, E. 1903

Huile de foie de morue.

Jour. d. pharm. et d. chim., s6, v. 16, p. 162. (Yrbk. Brit. Pharm. Conf., 40, p. 205)

Discusses the characteristics and tests for cod liver oil as found in the New French Codex.

Gane, E.H. 1903

Cod Liver Oil and Its Adulterants.

Am. Jour. Pharm., 75, p. 430. (Proc. Am. Pharm. Assoc., 51, p. 222)

Scarcity of cod liver oil has led to its adulteration. Three sample tests for adulterations were submitted for the benefit of the retail pharmacist. The tests included color, odor, specific gravity, acidity, melting point of fatty acids, saponification figure, iodine absorption, and sulfuric and nitric acid tests.

Neininger, S. 1903

Ersatz fur Oleum Jecoris.

Pharm. Ztg., 48, p. 428. (Am. Jour. Pharm., 75, p. 413)

Oil of sesamum is a desirable substitute for cod liver oil. Iodine can also be added in minute quantities.

Robinson, R.A. 1903

Cod Liver Oil Emulsion with Irish Moss.

Pharm. Jour., 70, p. 96. (Yrbk. Brit. Pharm. Conf., 40, p. 271)

Gives a description of the quickest way to prepare this emulsion by using Irish Moss.

Sage, C.E. 1903

Cod Liver Oil.

Chem. & Drugg., 62, p. 571. (Yrbk. Brit. Pharm. Conf., 40, p. 204)

Reports data on the specific gravity, saponification number, amount of free acid, and iodine number of cod liver oil.

Tonneau, J. 1903

Emulsion a base d'huile de foie de morue.

L' Union Pharm., 43, p. 504. (Yrbk. Brit. Pharm. Conf., 40. p. 271)

Gives a formula and the best method of preparing a cod liver oil emulsion.

Von Wolff, F. 1903

Uber Dorschtran.

Pharm. Ztg., 48, p. 235. (Proc. Am. Pharm. Assoc., 51, p. 815)

The nitric acid is the best one to use for the commercial determination of the oils purity. A pure oil shows a red color at the point of contact of the nitric acid and the oil.

Bousfield, W. 1904

Cod Liver Oil.

Chem. & Drugg., 64, p. 21. (Proc. Am. Pharm. Assoc., 52, p. 748)

Discusses the conditions necessary for the production of the best quality of cod liver oil; conditions of the fish; method of manufacture ; climatic conditions and the preservation of the oil after preparation.

Dowzard, E. 1904

The Refractometric Examination of Cod Liver Oil.

Chem. & Drugg., 63, p. 400. (Yrbk. Brit. Pharm. Conf., 41, p. 66)

The refractometric method is one of the best to determine the possibility of adulterants being present in cod liver oil. Data on several samples of the oil, in a table form, are given.

Guldensteeden, E. 1904

Darstellung und Prufung von Jodeisenlebertran.

Pharm. Ztg., 49, p. 103. (Proc. Am. Pharm. Assoc., 52, p. 551)

Gives a formula for iodoferrated cod liver oil and the method of preparation. Also describes the finished preparation.

Hall, A.T. 1904

Cod Liver Oil and Its Adulterations.

Brit. & Col. Drugg., 45, p. 46. (Pharm. Era, 31, p. 111; Proc. Am. Pharm. Assoc., 52, p. 749)

Discusses the production and adulteration of cod liver oil in Norway.

Isdahl, J.C. 1904

Cod Liver Oil.

Pharm. Jour., 72, p. 818. (Am. Jour. Pharm., 76, p. 444)

The production of cod liver oil in Norway in 1904 was almost six times as great as in 1903. This is still a low yield, however.

1904

Lebertran und Lebertranersatzmittel.

Pharm. Ztg., 48, p. 561. (Proc. Am. Pharm. Assoc., 52, p. 754)

A probable substitute for cod liver oil may be found in sesame oil. It has been iodized to conform to the natural cod liver oil.

Parry, E.J. 1905

Cod Liver Oil Standards.

Chem. & Drugg., 66, p. 491. (Yrbk. Brit. Pharm. Conf., 42, p. 65.)

Gives data on the specific gravity, saponification value, iodine value, and the unsaponifiable matter for the oil.

Schamelhout, F. 1905

La reaction de Kremel pour caracteriser l'huile de foie de morue.

Rep. de Pharm., s. 3, v. 17, p. 116. (Yrbk. Brit. Pharm. Conf., 42, p. 64)

Gives a description and criticism of Kremel's nitric acid test for cod liver oil.

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

Cod Liver Oil.

Chem. & Drugg., 66, p. 129. (Yrbk. Brit. Pharm. Conf., 42, p. 64)

Suggests a different monograph for cod liver oil in the present British Pharmacopoeia. Discusses the official character and tests for cod liver oil.

(Committee) 1906

(Oleum Jecoris Aselli Aromaticum.)

Hamburg Formulary, ___ Ed., p. ___. (Apoth. Zeit., 21, p. 466; Yrbk. Brit. Pharm. Conf., 43, p. 124)

Gives a formula for an aromatic cod liver oil.

Lythgol, H.C. 1906

Optical Properties of Castor, Cod Liver, Neatsfoot Oils and a Few Essential Oils.

Jour. Am. Chem. Soc., 27, p. 887. (Pharm. Jour., 75, p. 21; Yrbk. Brit. Pharm. Conf., 43, p. 19)

Gives a table of the refraction index and optical rotation of the above mentioned oils.

Thomson, R.T. & Dunlop, H. 1906

Cod Liver Oil and Other Fish Oils.

Jour. Soc. Chem. Ind., 24, p. 741. (Yrbk. Brit. Pharm. Conf., 43, p. 26)

States that the pharmacopoeial tests should be modified. Also gives statistics on the iodine value and saponification value.

Vreven, S. 1906

(A New Reaction for Cod Liver Oil.)

Ann. de Pharm., 12, p. 97. (Yrbk. Brit. Pharm. Conf., 43, p. 26)

(Cod liver oil is dissolved inether and treated with alcohol. As nitric acid is added a blue color develops.)

The original was not available.

Puckner, W.A. 1907

Fraud and Deception Connected with Socalled Cod Liver Oil Preparations.

Jour. Am. Med. Assoc., 47, p. 1207. (Am. Jour. Pharm., 79, p. 125)

Much deception and fraud is carried on by firms in socalled proprietary preparations of cod liver oil which contains no oil at all. The oil must either be in the form of an emulsion, a solution, or a solution of fatty acids. These preparations which do not contain cod liver oil in one of the above manners have no therapeutic value.

Rodwell, H. 1907

Malt and Hypophosphites with Cod Liver Oil.

Pharm. Jour., 78, p. 452. (Yrbk. Brit. Pharm. Conf., 44, p. 267)

Gives a formula for a preparation of malt and hypophosphites with cod liver oil.

Henseval, G. & Huwart, J. 1908

(Characters of Cod Liver Oil.)

Nouv. Rem., 24, p. 274. (Yrbk. Brit. Pharm. Conf., 45, p. 54)

(Discusses color, acid value, saponification value, iodine value, acetyl value, and percentage of unsaponifiable matter in cod liver oil.)

The original was not available.

Schultz, R. 1908

Jodeisenlebertran.

Pharm. Ztg., 52, p. 981. (Proc. Am. Pharm. Assoc., 56, p. 104)

Describes the cause and prevention of darkening of iodo-ferrated cod liver oil.

Walter, E. 1908

Lebertranemulsion.

Pharm. Ztg., 53, p. 79. (Proc. Am. Pharm. Assoc., 56, p. 77)

Gives a formula for a stable and agreeable type of emulsion of cod liver oil.

Bedell, M.I. 1909

L'huile de foie de morue en extrait d'malt et l'huile de foie de morue.

Jour. d. pharm. et d. chim., s.4, v. 28, p. 433. (Yrbk. Brit. Pharm. Conf., 46, p. 138)

Gives a method of determining the cod liver oil in Extract of Malt and Cod Liver Oil.

Boerner, B. 1909

Lebertranemulsion.

Apoth. Zeit., 24, p. 211. (Proc. Am. Pharm. Assoc., 57, p. 71; Yrbk. Brit. Pharm. Conf., 46, p. 139)

Gives a formula and method of preparation for emulsion of cod liver oil.

Puckner, W.A. & Warren, L.E. 1909

Metabolized Cod Liver Oil Compound.

Jour. Am. Med. Assoc., 53, p. 1201. (Am. Jour. Pharm., 81, p. 590)

A chemical investigation of Waterbury's metabolized cod liver oil revealed that it does not contain an appreciable amount of cod liver oil. The results are given in detail.

Craig, H. 1910

Extract of Malt with Cod Liver Oil.

Drugg. Circ., 54, p. 28. (Yrbk. Brit. Pharm. Conf., 47, p. 265)

Gives a formula and method of preparation of malt extract with cod liver oil and a recommendation for its inclusion in the N.F.

Wilbert, M.I. 1910

Cod Liver Oil.

Am. Jour. Pharm., 82, p. 132.

The following qualifications for cod liver oil are given: specific gravity should be from 0.920 to 0. 930; iodine index should be from 140 to 170; and the saponification value from 180 to 195.

(Editor) 1910

Cod Liver Oil Emulsion.

Chem. & Drugg., 76, p. 583. (Yrbk. Brit. Pharm. Conf., 47, p. 239)

Gives a formula for the cod liver oil emulsion of the new Italian Pharmacopoeia.

(Editor) 1910

Jodeisenlebertran.

Pharm. Zeit., 54, p. 958. (Yrbk. Brit. Pharm. Conf., 47, p. 239)

In reply to a question gives a formula for cod liver oil with iron iodide.

Feist, K & Auernhammer, W. 1911

Oleum Jecoris Aselli Ferratum.

Pharm. Zeit., 55, p. 907. (Yrbk. Brit. Pharm. Conf., 48, p. 415)

Gives a method of preparation of ferrated cod liver oil. The finished product contains 1 % of Fe.

Hoppenstedt, A.W. 1911

Detection of Menhaden Oil in Cod Liver Oil.

Jour, Am. Leather Chem. Assoc., p. 553. (Yrbk. Brit. Pharm. Conf., 48, p. 94)

Gives a process for determining the presence of menhaden oil in cod liver oil. When such a mixture is shaken with HCl it gives a greenish color which no other oil does.

Richter, O. 1911

Zur Darstellung von Emulsion
Oleum Jecoris Aselli.

Suedd. Apoth. Zeit., 51, p. 28. (Pharm. Zeit., 56, p. 383; Yrbk. Brit. Pharm. Conf., 48, p. 315)

Gives a method of preparation of cod liver oil emulsion with glycerin and the favoring factors of this emulsion.

Shabad, I.A. 1912

(Phosphorized Cod Liver Oil with Calcium Salts for Rachitis.)

Jahrb. Kinderheilk, 72, p. 1. (Chem. Abstr., 6, p. 385; Yrbk. Brit. Pharm. Conf., 49, p. 276)

(The combination of phosphorized cod liver oil with calcium salts cause a great retention of calcium in the body.)

The original was not available.

Williams, O.T. 1912

Cod Liver Oil.

Pharm. Jour., 89, p. 806. (Yrbk. Am. Pharm. Assoc., 1, p. 255)

The great value of cod liver oil lies in the fact that it enters into direct and permanent combination with the cells of the body and becomes a part of the cell protoplasm which other " drugs " do not do. Also discusses the value of the oil in cases of tuberculosis and the constituents which make for its great value.

--- 1912

Cod Liver Oil.

Chem. & Drugg., 80, p. 454. (Am. Jour. Pharm., 84, p. 269)

The amount of Norwegian cod liver oil has decreased considerably because of the abundant supply of oil from other sources, especially around Newfoundland.

--- 1912

Emulsio Olei Jecoris Aselli Ph. Norv. Ed. IV. Lebertranemulsion.

Apoth. Ztg., 27, p. 149. (Yrbk. Brit. Pharm. Conf., 49, p. 307)

Gives the formula for the above pharmacopoeial cod liver oil emulsion, which should be freshly prepared.

Apple, F.M. 1913

Dispensing Cod Liver Oil.

Drugg. Circ., 56, p. 718. (Yrbk. Brit. Pharm. Conf., 50, p. 304)

Permanent bottles should not be kept for cod liver oil. Freshly prepared bottles should be used at all times.

Brieger, R. 1913

Lebertranemulsion.

Apoth. Zeit., 28, p. 197 & p. 287. (Yrbk. Brit. Pharm. Conf., 50., p. 100)

Gives a method for determining the amount of cod liver oil present in the emulsion.

Hommell, P.E. 1913

Cod Liver Oil- Inefficiency of Fat-Free Preparations.

Proc. N.J. Pharm. Assoc., 43, p. 87. (Yrbk. Brit. Pharm. Conf., 50, p. 101; Yrbk. Am. Pharm. Assoc., 2, p. 61)

Fat-free preparations of cod liver oil should not be on the market. They do not represent the remedial value of the oil. Their efficiency is due mostly to the remedial agents associated with them in their manufacture.

Mannich, C. & Schwedes, L. 1913

Lebertranemulsion.

Apoth. Zeit., 28, p. 229. (Yrbk. Brit. Pharm. Conf., 50, p. 101)

Describes a method for determining the amount of oil in cod liver oil emulsion.

Mollering, H. 1913

Jodeisenlebertran und seine Wertbestimmung.

Pharm. Ztg., 58, p. 790. (Yrbk. Am. Pharm. Assoc., 2, p. 61)

Gives a simple method for the detection of iron and iodine in iodoferrated cod liver oil. By this method it has been proven that several preparations do not contain the amount of iodine and iron they claim to.

Williams. O.T. 1913

Cod Liver Oil and its Action in Phthisis.

Bost. Med. & Surg. Jour., 1912 v. 2, p. 700. (Yrbk. Brit. Pharm. Conf., 50. p. 239)

Reports the results of experimentation with cod liver oil in cases of phthisis.

Bumming, G. 1914

Ueber die Bestimmung von Leberthran in Emulsionen.

Apoth. Zeit., 29. p. 695. (Pharm. Ztg., 59, p. 693: Yrbk. Am. Pharm. Assoc., 3, p. 55; Yrbk. Brit. Pharm. Conf., 52, p. 262)

Gives a method for determining the amount of cod liver oil present in an emulsion.

Erdmann, H. 1914

Leberthran gegen Insektenstiche.

Pharm. Centralhl., 55, p. 995. (Yrbk. Am. Pharm. Assoc., 3, p. 295)

Horses rubbed with cod liver oil are immune from insect bites, and bites previously incurred heal rapidly on application of the oil.

Feyen, T. 1914

Ueber eine einfache Methode zur Fettbestimmung der Lebertranemulsionen mittels der in jeder Apotheke vorhandenen Gerate.

Pharm. Ztg., 59, p. 252. (Yrbk. Am. Pharm. Assoc., 3, p. 55)

Gives a simple procedure for assaying the cod liver oil in emulsions.

Tschanter, K. 1914

Jodeisenlebertran.

Pharm. Ztg., 59, p. 92. (Yrbk. Am. Pharm. Assoc., 3, p. 79)

In preparing this product, caution must be taken to see that the ferrous iodide is completely formed before it is added to the oil. That is the only way a complete reaction between the iodine and iron can be assured. At the same time the cod liver oil must not have been exposed to the aie for a long time.

Williams, O.T. 1914

Cod Liver Oil- To What Does It Owe Its Medicinal Activity?

Bull. Pharm., 27, p. 172. (Yrbk. Am. Pharm. Assoc., 3, p. 295)

The best samples of the oil are free from iodine and phosphorus. Those freest of fatty acids are also more active. Concludes that cod liver oil is a natural food prepared by the liver for immediate use.

Beringer, G.M. Jr. 1915

Emulsion of Cod Liver Oil.

Pract. Drugg., 33, p. 31 (Am. Jour. Pharm., 87, p. 115; Yrbk. Am. Pharm. Assoc., 4, p. 46; Yrbk. Brit. Pharm. Conf., 52, p. 263)

Discusses appropriate flavors for emulsions of cod liver oil. Reports the results of various flavoring agents with the cod liver oil emulsion.

Fuller, H.C. 1915

Cod Liver Oil Tests for Purity.

Drugg., Circ., 59, p. 569. (Yrbk. Am. Pharm. Assoc., 4, p. 300)

Reports on 29 samples of Norwegian cod liver oil, 3 samples of American oil and 2 of other fish oils. The tests included specific gravity, iodine number, acid number, refractive index, congealing point and the saponification number. Briefly discusses the therapeutic value of cod liver oil.

Tortelli, ___ & Jaffe, ___ (not available) 1915

Eine spezifische Farbenreaktion fur Trane von Seetieren und ihre Hydrierungsprofukte.

Schweiz. Apoth. Ztg., 53, p. 107. (Chem. Ztg., ___, p. ___; Yrbk. Am. Pharm. Assoc., 4, p. 300)

Gives data on color reactions of the oil mixed with other materials.

1915

Cod Liver Oil Industry Hit by War.

Pharm. Era, 48, p. 255. (Yrbk. Am. Pharm. Assoc., 4, p. 299)

The process of preparing the oil from the fish livers and the price question are discussed. The higher price is probably due to the naval operations near the fishing grounds and to the increased consumption of nations engaged in hostilities.

1915

Cod Liver Oil a Protective.

Chem. & Drugg., 87, p. 34. (Yrbk. Am. Pharm. Assoc., 4, p. 300.)

A British Army doctor introduced the method of coating the legs, stockings and shoes of trench soldiers with cod liver oil to prevent lowerinf of body temperature.

Chapmann. A.C. 1916

A Hydrocarbon in Cod Liver Oil.

Pharm. Jour., 97, p. 571. (Chem. & Drugg., 88, p. 1242; Yrbk. Am. Pharm. Assoc., 5, p. 229)

Found that a certain sample of oil contained 89 % of unsaponifiable matter which proved to be a hydrocarbon which distilled at 280°C. Called the hydrocarbon " spinacidene ".

Mastbaum, H. 1916

Uber Kohlenwasserstoffe in Fischleberolen.

Chem. Ztg., 39, p. 889. (Pharm. Jour., 96, p. 327; Yrbk. Am. Pharm. Assoc., 5, p. 230)

In an oil that had been condemmed as being adulterated with mineral oil, found 83 % unsaponifiable matter. This fact supports the theory of the animal origin of petroleum.

Weber, F. 1916

Oleum Jecoris Aselli Jodatum.

Schweiz. Apoth. Zeit., 53, p. 516. (Yrbk. Brit. Pharm. Conf., 53, p. 336.)

Gives a formula for a preparation of cod liver oil with ferrous iodide.

Remington, J.P. & Wood H.C. 1917

Oleum Morrhuae U.S., Br.

Disp., U.S.A. 19 Ed., p. 856; 20 Ed., p. 773; 21 Ed., p. 767.

Gives pharmacopoeial definitions, synonyms, description of fish, method of preparation, properties, tests of purity, uses and doses and various official preparations.

Richmond, H.D. & Hitchman, F.G. 1917

Rapid Determination of Cod Liver Oil in Malt and Oil Preparations.

Jour. Soc. Chem. Ind., 36, p. 273. (Yrbk. Brit. Pharm. Conf., 54, p. 75)

Gives a formula for calculating the amount of oil in the malt preparations.

Mannich, G. & Thiele, R. 1918

Properties of Completely Saturated Fats.

Drugg. Circ., 62, p. 75. (Yrbk. Am. Pharm. Assoc., 7, p. 460)

Includes information as to melting points, iodine number, and saponification number of several fixed oils and fats including cod liver oil. The oil was subjected to hydrogenation and data relative to the 3 points mentioned above were obtained.

Howarth, W.J. 1919

Standard for Cod Liver Oil Preparations.

Chem. & Drugg., 91, p. 470. (Yrbk. Am. Pharm. Assoc., 8, p. 462)

Suggests a standard for cod liver oil of 33 % for all preparations containing this substance. Some preparations range from 6.3 % to 48.1 %.

Richmond, H.D. 1919

(Extract of Malt and Cod Liver Oil.)

Chem. Abstr., 13, p. 2106. (Yrbk. Am. Pharm. Assoc., 8, p. 79)

(Gives an equation or proportion by which one can find the percentage of oil in the preparation both by volume and by weight. Also believes that the minimum amount of oil should be 15 % by volume or 10.4 % by weight.)

The original was not available.

Rogers, L. 1919

The Preparation of Sodium Morrhuate.

Brit. Med. Jour., 1919, v. 2, p. 426. (Pharm. Jour., 103, p. 434; Yrbk. Am. Pharm. Assoc., 8, p. 462)

Gives a formula and method of preparation of sodium morrhuate of which is used a 3 % solution hypodermically and intravenously for tuberculosis.

Bohrisch, P. 1920

(Effect of Chilling Cod Liver Oil.)

Pharm. Ztg., ___, p. ___. (Drugg. Circ., 64, p. 64; Yrbk. Am. Pharm. Assoc., 9, p. 549)

(When cod liver oil of a good quality is exposed to 0°C for 3 or 4 hours, no separation of crystalline particles should take place.)

The original was not available.

Kadt de, J. 1920

Over de Zwavelzuurreactie Bij Levertraan.

Pharm. Weekbl., 57, p. 756, (Yrbk. Am. Pharm. Assoc., 9, p. 549,; Yrbk. Brit. Pharm. Conf., 58, p. 242)

According to the U.S.P., 1910, sulphuric acid gives a violet color to cod liver oil. Found that many genuine oils do not give this color but in many cases a brown color. These oils may have been bleached. Points out that strong acid should not be used to get an initial violet color. Believes that the sulphuric acid test should be omitted from the pharmacopoeia as an identification test.

O'Connor, C. 1920

Honey and Cod Liver Oil Emulsion.

Nat. Drugg., 49, p. 526. (Yrbk. Brit. Pharm. Conf., 57, p. 97.)

Gives a formula consisting of honey and cod liver oil. A description of the procedure of making this emulsion is given, using the 1-2-4 method.

Winberg, E. 1920

(Oleum Jecoris Aselli Ferratum.)

Svensk. Farm. Tidskrift, 23, p. 566. (Chem. Abstr., 14, p. 591; Yrbk. Brit. Pharm. Conf., 57, p. 275)

(An iron soap is first prepared and is then added to the cod liver oil.)

The original was not available.

——— 1920

Emplatre a l'huile de foie de morue.

L' Union Pharm., 60, p. 314. (Yrbk. Brit. Pharm. Conf., 57, p. 333.)

A formula for a plaster containing cod liver oil and used in Paris hospitals is given with directions for its preparation.

Berghausen, O. & Steinkoenig, L.A. 1921

Therapeutic Value Of Cod Liver Oil.

Am. Jour. Pharm., 93, p. 757. (Yrbk. Am. Pharm. Assoc., 10, p. 452)

Description and therapeutic values of cod liver oil derivatives such as sodium morrhuate, calcium morrhuate, and mercurous and mercuric morrhuates are given.

Bohrisch, P. 1921

Phosphorlebertran.

Pharm. Zentralhl., 62, p. 315. (Yrbk. Am. Pharm. Assoc., 10, p. 542)

Describes the preparation of a phosphorated cod liver oil from a phosphorated primary paraffin oil. He also gives a method for the determination of the free and combined phosphorus.

Grimme, C. 1921

Uber die Untersuchung von Lebertranemulsionen.

Pharm. Zentralhl., 62, p. 156. (Yrbk. Am. Pharm. Assoc., 10, p. 80)

Gives an analysis of samples of cod liver oil emulsions for veterinary use and of emulsions for human use, including the oil assay and color reactions of the separated oil.

Lang, J. 1921

Die Vitamine und der Lebertran.

Schweiz. Apoth. Ztg., 59, p. 501. (Yrbk. Am. Pharm. Assoc., 10, p. 522)

Summarizes information concerning the different types of vitamins found in cod liver oil.

Park, E.A. & Howland, J. 1921

Cod Liver Oil- Use of in Treatment of Rickets.

Jour. Am. Med. Assoc., 77, p. 2122. (Yrbk. Am. Pharm. Assoc., 10, p. 451; ibid, p. 138)

Some experiments are not convincing that cod liver oil is of value in rickets. However, experimenters furnish proof of the fact that the oil is a help and if the diet is not too faulty, there is a change in the bone which amounts to complete cure.

Lax, H. 1922

Lebertran.

Biochem. Ztschr., 125, p. 265. (Pharm. Ztg., 67, p. 134; Yrbk. Am. Pharm. Assoc., 11, p. 279)

Polyneuritis was induced in pigeons by a diet of polished rice, and it could not be cured by the administration of cod liver oil in any form. Thus the latter does not contain the antineuritic principles.

Richmond, H.D. & England, E.H. 1922

Cod Liver Oil, Sulphuric Acid Reaction.

Analyst, 47, p. 431. (Jour. Chem. Soc. Land., 122, pt. 2, p. 792; Yrbk. Am. Pharm. Assoc., 11, p. 280)

Discusses the reaction between sulphuric acid and cod liver oil.

Rogers, L. & Bennett, G. 1922

(Cod Liver Oil- Extraction of, by Electrolysis.)

Z. Deutsch. ol-u. Fettindustr., 41, p. 766. (Chem. et Ind., 8, p. 412; Yrbk. Am. Pharm. Assoc., 11, p. 279)

(Gives a method of extracting cod liver oil from the fish by a process of electrolysis. A detailed description of the apparatus and process is given. Advantages of the method are: 1. practically all of the oil is removed; 2. oil of superior quality is obtained; 3. the product is odorless; 4. the process is continuous; 5. the residue may be a fertilizer)

The original was not available.

Stekhoven, W.S. 1922

(Cod Liver Oil as Vehicle for Benzyl Benzoate.)

Ned. Tijdschr. v. Geneeskunde, 1, p. 291. (Jour. Am. Med. Assoc.,78, p. 1241; Yrbk. Brit. Pharm. Conf., 59, p. 214)

(Discusses experimental data relative to the value of cod liver oil as a vehicle for the administration of benzyl benzoate.)

The original was not available.

York. L.H. 1922

How Cod Liver Oil is Made.

Pract. Drugg., 40, p. 26. (Yrbk. Am. Pharm. Assoc., 11. p. 280)

Gives a detailed description of the work involved in the manufacture of cod liver oil. The standard s of the oil are so high, and since decomposition of the livers must not take place, only a small amount of the oil is manufactured at a time.

Andre, E. 1923

L'huile de foie de morue.

Bull. d. sci. pharmacol., 30, p. 267 & p. 352. (Yrbk. Am. Pharm. Assoc., 12, p. 247)

Gives the specifications of cod liver oil in the different pharmacopoeias, also a list of the constituents of cod liver oil.

Drummond, J.C., Zilva, S.S. & Golding, J. 1923

Cod Liver Oil in The Feeding of Farm Animals.

Jour. Agric. Sci., 13, p. 153. (Analyst, 48, p. 337; Yrbk. Brit Pharm. Conf., 60. p. 507)

Gives statistics on what type of cod liver oil should be fed to the different types of farm animals.

Guy, R.A. 1923

History of Cod Liver Oil as a Remedy.

Am. Jour. Diseases of Children, 26, p. 112. (Am. Jour. Pharm.. 95, p. 764; Yrbk. Am. Pharm. Assoc., 12, p. 3)

In the times of Hippocrates and Pliny fish oils were used for skin eruptions. The earliest mention of cod liver oil was for " old pains " in chronic rheumatism and gout in 1766 and then in rickets and scrofula in 1822.

Marfen, D. 1923

Emulsion d'huile de foie de morue.

Jour. d. pharm. et d. chim., s. 6, v. 27, p. 80. (Yrbk. Brit. Pharm. Conf., 60, p. 408)

Gives a formula of an emulsion of cod liver oil as used in a Paris Childrens Hospital.

Takahashi, K. & Kawakami, K. 1923

(Separation of Vitamin A from Cod Liver Oil and Its Properties.)

Jour. Chem. Soc. Japan, 44, p. 590. (Jour. Soc. Chem. Ind., '42, p. 904; Yrbk.Brit. Pharm. Conf., 60, p. 526)

(Describes a process of isolating vitamin A from cod liver oil, and the properties of the isolated material.)

The original was not available.

Zilva, S.S. & Drummond, J.C. 1923

Cod Liver Oil Industry In Newfoundland.

Jour. Soc. Chem. Ind., 42, p. 185. (Yrbk. Am. Pharm. Assoc., 12, p. 247)

In Newfoundland the direct steam process is used almost exclusively. Describe in detail how the oil is obtained.

Zucker, H.F. 1923

Extraction of Antirachitic Substance from Cod Liver Oil.

Proc. Soc. Exp. Biol. Med., 20, p. 136, (Yrbk. Am. Pharm. Assoc., 12, p. 247)

The substance was obtained by extracting the oil with 95 % alcohol, saponifying with sodium hydroxide and precipitating the calcium soap with water. The precipitate was then extracted with acetone. The preparation is entirely free from vitamin A.

Drummond, J.C. 1924

Cod Liver Oil.

Chem. & Ind., 43, p. 929. (Yrbk. Brit. Pharm. Conf., 61, p. 118)

Gives a historical survey of the medical use of cod liver oil, and a summary of recent theories of the active constituents.

Dubin, H.E. 1924

A Palatable Cod Liver Oil Concentrate Possessing The Curative Properties of Cod Liver Oil.

Am. Jour. Pharm., 96, p. 759. (Jour. Am. Pharm. Assoc., 14, p. 215; Pharm. Jour., 61, p. 394; Yrbk. Brit. Pharm. Conf., 62, p. 259)

Cod liver oil is a specific for the treatment of rickets. An attempt to isolate the active principle responsible for its therapeutic action. 0.1 gram of concentrate from 1000 grams of oil mixed with 1000 grams of sugar, is just as potent as fresh cod liver oil gram for gram.

Concentrate is a brown semi-crystalline, pasty mass, and can be compressed with sugar into tablets.

Hjort, J. 1924

Tasteless Cod Liver Oil.

Chem. & Drugg., 100, p. 113. (Yrbk. Am. Pharm. Assoc., 13, p. 247)

Did much work on vitamins in fish oils and devised a process to eliminate the specific taste of cod liver oil. The prepared oil is just as high in vitamin content as the original oil.

Holmes, A.D. 1924

Cod Liver Oil.

Ind. and Eng. Chem., 16, p. 379. (Yrbk. Am. Phar. Assoc., 13, p. 198)

Discusses the effect on the vitamin A potency of cod liver oil when a little hake liver oil which is bound to be mixed with it during the manufacture is present. It does not decrease the vitamin A potency to any great extent.

Holmes, A.D. 1924

Cod Liver Oil.

Jour. Am. Pharm. Assoc., 13, p. 532. (Yrbk. Am. Pharm. Assoc., 13, p. 342)

Cod liver oil was treated with nitric acid and sulphuric acid and the color reactions and results obtained tabulated. The tests are not reliable enough to ne used for identity tests.

Holmes, A.D. 1924

Vitamin A Potency of Norwegian Cod Liver Oil.

Ind. & Eng. Chem., 16, p. 1181. (Yrbk. Am. Pharm. Assoc., 13, p. 247)

Physical and chemical characteristics of 10 lots of Norwegian cod liver oil were determined, and also their vitamin A potency. There were wide variations in their characteristics, tests, and vitamin content.

Holmes, A.D. 1924

(Effect of Cold Storage of Cod Livers on the Vitamin A Content of Cod Liver Oil.)

Jour. Ind. Eng. Chem, 16, p. ___. (Yrbk. Brit. Pharm. Conf., 61, p. 118)

(Oils from cod livers which had been stored at a low temperature out of contact with air had as high a vitamin potency as oil from fresh livers.)

The original was not available.

Holmes, A.D. 1924

Vitamin Potency of Cod Liver Oil.

Ind. & Eng. Chem., 16, p. 295 & p. 964. (Yrbk. Am. Pharm. Assoc., 13, p. 199; Yrbk. Brit. Pharm. Conf., 61, p. 120)

Ordinarily for a cod liver oil to show a high vitamin A content, it must have been rendered from fresh livers. However, results clearly show that if cod livers are kept refrigerated and out of contact eith air the oil obtained from them up to 1 year at least retains its vitamin A content.

Javillier, M. & Baude, P. 1924

L'huile de foie de morue et sa teneur en facteur A.

Bull. d. sci. pharmacol., 31, p. 442. (Yrbk. Am. Pharm. Assoc., 13, p. 247)

The amount of vitamin A varies in the different oils. A basal vitamin-free diet to which 2 % cod liver oil was added did not prevent xerophthalmia. Doses above 2 % prevented it but the growth curve of the animals was unsatisfactory.

Lewis, E.W. 1924

Cod Liver Oil.

Chem. & Drugg., 101, p. 649. (Yrbk. Am. Pharm. Assoc., 13, p. 134)

Gives a survey of cod liver oil including its manufacture, the extent of the industry, annual production, properties, its constituents, applications, examination and therapeutic value.

Poulsson, E. 1924

Effect of Age On Vitamin A of Cod Liver Oil.

Biochem. Jour., 18, p. 919. (Yrbk. Am. Pharm. Assoc., 13, p. 321)

A sample of cod liver oil 23 years old was given to rats in daily doses of 3-5 mg. and it promoted growth. The rats were previously deficient in vitamin A.

Tsujimoto, M. & Kimura, K. 1924

(Highly Unsaturated Acids in Cod Liver Oil.)

Jour. Chem. Ind. Japan, 26, p. 1162. (Jour. Soc. Chem. Ind., 43, p. 139; Yrbk. Am. Pharm. Assoc., 13, p. 246)

(A mixture of fatty acids was obtained from cod liver oil from whence it was concluded that cod liver oil contains a large amount of clupanodonic acid.)

The original was not available.

Wagner, R. & Wimberger, H. 1924

Clinical Observations Upon the Value of Oxidized Cod Liver Oil in the Therapy of Rickets.

Lancet, 102, p. 55. (Chem. & Drugg., 101, p. 446; Yrbk. Am. Pharm. Assoc., 13, p. 198)

Experiments were conducted with infants treated with cod liver oil for rickets. Observations led to the belief that cod liver oil contains 2 active factors: 1. anti-rachitic or calcium depositing and 2. growth promoting vitamin A.

Zilva, S.S. 1924

Vitamin A of Cod Liver Oil.

Biochem. Jour., 18, p. 881. (Yrbk. Am. Pharm. Assoc., 13, p. 321)

Solid cod liver oil at 150° and deodorized by treatment with steam was as active as the original oil. Partly solidified oils were also just as active as the original one.

1924

(. New Conception with Regard to Cod Liver Oil.)

Therap. Gaz., 48, p. ___. (Pharm. Jour., 112, p. 419; Yrbk. Am. Pharm. Assoc., 13, p. 198)

(A very brief history of the oil is given. Cod liver oil seems to cause an increase in the amount of Ca and P in the blood in a catalytical manner. Cod liver oil is invaluable for many states of malnutrition.)

The original was not available.

Bills, C.E. 1925

Resistance of the Antirachitic Substance in Cod Liver Oil to Reagents.

Jour. Biol. Chem., 63, p. 1. (Yrbk. Am. Pharm. Assoc., 14, p. 236; Yrbk. Brit. Pharm. Conf., 63, p. 127)

The antirachitic vitamin in cod liver oil is not destroyed by hydrogen dioxide, hydrogen sulfide, sulfur dioxide, or formaldehyde. It is readily destroyed by nitrous oxide fumes, and slowly by direct steam or mineral acids.

Drummond, J.C. 1925

Selection of Cod Liver Oils for Medicinal Use.

Lancet, 209, p. 679. (Yrbk. Am. Pharm. Assoc., 14, p. 236; Yrbk. Brit. Pharm. Conf., 62, p. 116)

Oil obtained from the feeding fish and not the spawning fish is superior in vitamin content. Pale oil has a smaller vitamin content than the more yellow oil.

Dubin, H.E. 1925

Cod Liver Oil.

Jour. Am. Pharm. Assoc., 14, p. 315. (Yrbk. Am. Pharm. Assoc., 14, p. 45)

Prepared a product which is highly concentrated, odorless and tasteless, non toxic and equal in therapeutic value to fresh cod liver oil. The method of preparation is given.

Epstein, A.K. & Harris, B.R. 1925

Cod Liver Oil Extracts.

Jour. Am. Pharm. Assoc., 14, p. 589. (Yrbk. Am. Pharm. Assoc., 14, p. 48)

Examined different extracts and found neither iodine or bromine. The livers which were used must have been in an advanced stste of putrefaction. To find the therapeutic value of these extracts a biological assay must be conducted.

Fantus, B. 1925

Cod Liver Oil.

Jour. Am. Pharm. Assoc., 14, p. 592. (Yrbk. Am. Pharm. Assoc., 14, p. 193)

Cod liver oil probably owes its antirachitic activity to solar irradition, and the theory that substances that cure rickets emit ultraviolet rays upon oxidation is one that demands much attention.

Hart, E.B., Steenbock, H. & Lepkovsky, S. 1925

Effect of Storage on the Antirachitic Factor of Cod Liver Oil.

Jour. Biol. Chem., 65, p. 571. (Yrbk. Am. Pharm. Assoc., 14, p. 236)

Cod liver oil mixed with ground grains and stored in cans at room temperature retains its calcifying power for at least 6 months.

Poulsson, E. & Weidemann, G. 1925

(Vitamin Potency of Cod Liver Oil and Other Fish Oils.)

Tids. Kemi Bergv., 5, p. 44. (Chem. Abstr., 19, p. 2365; Yrbk. Am. Pharm. Assoc., 14, p. 237; Yrbk. Brit. Pharm. Conf., 62., p. 116)

(The activity of cod liver oil is easily destroyed by exposure to air and also by some refining processes such as hydrogenation.)

Snow, C.M. & Fantus, B 1925

Aromatic Cod Liver Oil.

Jour. Am. Pharm. Assoc., 14, p. 884. (Yrbk. Am. Pharm. Assoc., 14, p. 46)

Give a criticism and discussion of a formula found in the " Extra Pharmacopoeia " of Martindale and Westcott and give another formula for aromatic cod liver oil which they trust will become official in the future.

Zernick, F. 1925

Die angebliche Zerstorung der Vitamine in Leberthran Emulsionen.

Pharm. Ztg., 70, p. 156. (Yrbk. Am. Pharm. Assoc., 14, p. 46)

Concludes that the vitamines of cod liver oil are not diminished, masked or destroyed by emulsification of the oil.

--- 1925

(Vitamin Content of Cod Liver Oil from Norway and Newfoundland.)

(According to experimental data there is no difference in the growth promoting properties of the oil from Norway and the oil from Newfoundland.)

The original was not available.

Dubin, H.E. 1926

Nutritional Value and Standardization of Cod Liver Oil and of its Non-Saponifiable Fat-Soluble Vitamine Concentrate.

Am. Jour. Pharm., 98, p. 554.

Disputes the statement that cod liver oil is poisonous by proving it has a very marked therapeutic value. Nutritional value and methods of standardization are also discussed.

England, J.W. 1926

Cod Liver Oil.

Am. Jour. Pharm., 98, p. 49.

Vitamins A and D are the most valuable constituents of cod liver oil. The chief use is in rickets. The assay which is offered is permissive, not obligatory. A description of how the assay can be carried out is given. The results are only a measure of vitamin A content.

Holmes, A.D. 1926

Vitamin Potency of Cod Liver Oil.

Am. Jour. Pharm., 98, p. 555.

Experiments with Rhode Island pullets showed increased egg production, fertility, hatchability, viability of chicks decreased the number of blood spots, and decreased the mortality of adult birds with the use of cod liver oil in certain doses.

Lesne, E. & Simon, S. 1926

Nouvelles observations sur le facteur antirachitique de l'huile de foie de morue.

Compt. rend., 182, p. 1424. (Yrbk. Brit. Pharm. Conf., 63, p. 127)

The preventive and curative actions of cod liver oil in rickets are less rapid and constant than those of ultraviolet rays. Oils that cause digestive trouble may be improved by filtration.

Peacopk, P.R. 1926

Action of Light on Cod Liver Oil.

Lancet, 211, p. 328. (Pharm. Jour., 117, p. 425; Yrbk. Am. Pharm. Assoc., p. 240; Yrbk. Brit. Pharm. Conf., 64, p. 340)

The following changes take place when normal cod liver oil is exposed to light: 1. the shine of the oil disappears; 2. oil fails to give the arsenic chloride test for vitamin A; 3. vitamin A is destroyed; and 4. a change occurs in the absorption spectrum.

Southgate, H.W. 1926

Cod Liver Oil- Heat.

Biochem. Jour., p. 733. (Analyst, 51, p. 94; Yrbk. Am. Pharm. Assoc., 15, p. 183)

When cod liver oil is heated to a very high temperature, out of contact with air, the anti-rachitic and growth promoting factors are entirely destroyed.

Willimott, S.G. & Wokes, F. 1926

Assay of Cod Liver Oil for Vitamin A.

Pharm. Jour., 61, p. 718. (Yrbk. Brit. Pharm. Conf., 63, p. 128)

Gives a detailed description of a process of assaying cod liver oil for vitamin A content.

Willimott, S.G. & Wokes, F. 1926

Antirachitic Vitamin D of Cod Liver Oil.

Phar. Jour., 117, p. 473.

Give a detailed discussion of the antirachitic vitamin D including its properties, tests for, and uses.

Kramer, G. 1927

Cod Liver Oil Concentrate.

Jour. Am. Med. Assoc., 97, p. 394. (Am. Jour. Pharm., 99, p. 429)

A cholesterol free concentrate is as potent as cod liver oil itself. In an ether solution this cured rickets in rats. A palmitic solution makes it inactive.

Nixon, J.A. 1927

Cod Liver Oil Applied Externally.

Brit. Med. Jour., 1926, II p. 718. (Am. Jour. Pharm., 99, p. 108)

Cod liver oil applied to the skin keeps off mosquitos and biting flies. It also gives protection from the sun when it is combined with quinine.

Toyama, Y. 1927

Fatty Acids of Cod Liver Oil.

Chem. News, 134, p. 29. (Pharm. Jour., 119, p. 94; Yrbk. Brit. Pharm. Conf., 64, p. 137)

Gives a description of the fatty acids found in the cod liver oil.

Clare, J.L.L. & Soames, K.M. 1928

The Relative Content of the Fat Soluble Vitamins A and D in Cod Liver Oil.

Lancet, 106, p. 150. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 1, p. 132)

Vitamin A content in cod liver oil bears no definite relationship to the vitamin D content. This leaves the U.S.P. assay for vitamin A open to criticism.

Bills, C.E. 1929

Synthetic Cod Liver Oil.

Am. Jour. Pharm., 101, p. 225.

An oil containing the same antirachitic properties without an offensive odor and taste is now being manufactured by an American firm. Ergosterol is the valuable constituent. The product will not spoil and grow rancid as cod liver oil sometimes does.

England, J.W. 1929

The Norwegian Cod Liver Oil Industry.

Am. Jour. Pharm. 101, p. 282.

The city of Bergen is the center of the Norwegian cod liver oil industry. Compares Norwegian oil with Newfoundland oil. The Norwegians are doing everything possible to improve their industry as far as purifying the oil is concerned.

The present and probable future uses(therapeutic) are also discussed.

Funcke, Y. & von Sivers, J.H. 1929

(Cod Liver Oil Emulsion.)

" Farmaceutisk Revy ", ___, p. ___. (Am. Jour. Pharm., 101, p. 167)

(The formula and preparation of an emulsion of cod liver oil is given, the finished product containing 70 % of cod liver oil. It may be used as a base for Emulsion of Cod Liver Oil with Hypophosphites and Emulsion of Cod Liver Oil with Iron, the formulas for and method of preparation of which are also given.)

The original was not available.

Graham, J.H. 1929

Photochemistry of Cod Liver Oil.

Am. Jour. Pharm., 101, p. 44. (Yrbk. Am. Pharm. Assoc., 23, p. 168)

Discusses the physical and chemical properties of the oil, action of light, action of oxygen, information on saponification of the oil, volatile bases, the different specimens of cod liver oil, rancidity tests, iodine numbers, percentage of free acid and the viscosity of the oil.

De Sanctio, A.G. & Craig, J.D. 1930

Viosterol and Cod Liver Oil.

Jour. Am. Med. Assoc., 94, p. 1285. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 3, p. 555)

Viosterol in the recommended doses is less effective than cod liver oil for the prevention of rickets. Thus rickets is not due to a defficiency of vitamin D alone.

Drummond, J.C. 1930

Antimony Trichloride Reaction of Cod Liver Oil.

Jour. Soc. Chem. Ind., 49, p. 258. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 3, p. 657)

Cod liver oil exposed to the light does not show a more intense color reaction when treated with antimony trichloride than does cod liver oil stored in the dark.

Franklin, J.H. 1930

Dose of Cod Liver Oil.

Pharm. Jour., 69, p. 461. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 3, p. 128)

An excessive dose of cod liver oil should not be given, as it will cause difficulty in inducing the patient to take the oil.

Anderson, J.F. 1931

Biological Assay of Cod Liver Oil.

Jour. Am. Pharm. Assoc., 20, p. 117. (Yrbk. Am. Pharm. Assoc., 20, p. 107)

Gives a criticism of the U.S.P. assay of cod liver oil and the possibility of a different assay in the future.

Bleyer, B. 1931

Neue Bewertungsmerkmale fur den Lebertran.

Apoth. Ztg., 46, p. 1128. (Yrbk. Am. Pharm. Assoc., 20, p. 218)

Gives several methods for evaluating the oil. Also describes the antimony chloride test for determining the vitamin A content of several oils.

(Committee) 1931

Antimony Chloride Test for Cod Liver Oil.

Analyst, 57, p. 302. (Yrbk. Am. Pharm. Assoc., 20, p. 565)

The cod liver oil sub-committee of the British Pharmacopoeia Commission believe that the concentration of the antimony trichloride requires careful attention. They give a method of preparation of the reagent and also an assay method. The results of the tests are given.

Coward, K.H. 1931

Cod Liver Oil Content of Vitamin A and D.

Pharm. Jour., 129, p. 4. (Yrbk. Am. Pharm. Assoc., 20, p. 453; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 5, p. 745)

States that the blue value of an oil may be a rough indication of its vitamin A potency; there is no correlation between the vitamin A and D value of an oil and the blue value is no indication whatever of the vitamin D value of an oil.

Coward, K.H., Dyer, F.J. & Morgan, B.G.E 1931

Cod Liver Oil Content of Vitamin A and D.

Analyst, 57, p. 368. (Yrbk. Am. Pharm. Assoc., 20, p. 452; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 150)

Discuss determining the relative value of the antimony trichloride method and the biological method. The blue color value of an oil can not be considered a measure of its vitamin D potency, and the vitamin D values of different samples of cod liver oil are not proportioned according to the vitamin A values.

Ekkert, L. 1931

(Cod Liver Oil and Castor Oil- Reaction of.)

Magyar. Gyogys. Tarsasag. Ertesitoje, 7, p. 115. (Chem. Abstr., 25, p. 3126; Yrbk. Am. Pharm. Assoc., 20, p. 149)

(Purity and identity tests for the oil in the different pharmacopoeias are discussed. Describes the behavior of the oli when treated with aldehydes and concentrated sulphuric acid and the resulting color reactions.)

The original was not available.

Ekkert, L. 1931

Beitrag zu den Reaktionen des Lebertrans und Rizinusols.

Pharm. Zentralhl., 72, p. 209. (Yrbk. Am. Pharm. Assoc., 20, p. 148)

Gives a list of various color reactions which may help in the identification of cod liver oil.

Ender, F., Jermstad, A., & Aas, J.M. 1931

Uber die Beziehungen der Jodzahl zum Brichungsindex in frischem und ranzigen Lebertran.

Arch. der Pharm., 270, p. 256. (Pharm. Zentralhl., 73, p. 599; Yrbk. Am. Pharm. Assoc., 20, p. 452)

Shows by experimental data the relationship of the iodine number and the refractive index in fresh and rancid cod liver oil.

Funcke, Y. 1931

(Cod Liver Oil, Vitamins of.)

Farm. Revy, 30, p. 317. (Yrbk. Am. Pharm. Assoc., 20, p. 119)

(Gives a series of notes on the vitamin content of of cod liver oil. It was found that no vitamin A passes into anabsolute alcohol layer, while a considerable quantity of the vitamin passes into an ether-alcohol layer.)

The original was not available.

Kawai, K. 1931

(Japanese Cod Liver Oil.)

Jour. Pharm. Soc. Japan, 52, p. 95. (Yrbk. Am. Pharm. Assoc., 20, p. 452; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 105)

(Describes medicinal cod liver oil and its manufacture in Japan, relation between size and annual rings in cod fish scales, specific gravity of livers and oil content, and gives a discussion of the vitamin content of the oil.)

The original was not available.

Obst, W. 1931

(Cod Liver Oil-Terming Liver Oils.)

Seifensieder Ztg., 58, p. 484. (Squibb Abstr. Bull., 4, A-1034; Yrbk. Am. Pharm. Assoc., 20, p. 149)

Gives information about distinguishing different types of liver oils. Also gives the characterizations and requirements of each individual oil.

Schmidt-Nielsen, S. & Stone, J. 1931

(Cod Liver Oil.)

Kgl. Norske Viden skat. Selskab. Forh., 4, p. 47. (Chem. Abstr., 26, p. 2013; Yrbk. Am. Pharm. Assoc., 20, p. 452)

(Includes data on the amount of nitrogen and phosphorus in cod liver oil and the effect of the presence of these substances.)

The original was not available.

Smith, E.L. 1931

Factor Inhibiting Emulsification of Cod Liver Oil.

Analyst, 56, p. 66. (Qt. Jour. Pharm., 3, p. 373; Yrbk. Am. Pharm. Assoc., 20, p. 181)

During oxidation or drying of cod liver oil a substance is produced which stabilizes water-in-oil emulsions. Gives a method by which the extent to which the oxidation in an oil has been carried can be determined. Data on several samples of oil are given.

Zippel, F. 1931

Die Bestimmung des Trangehaltes in Lebertranemulsion und Prufung derselben auf fettlosliche Vitamine.

Pharm. Ztg., 77, p. 535. (Yrbk. Am. Pharm. Assoc., 20, p. 536)

Gives a method for determining the oil content of cod liver oil emulsion. Shaking out the oil with alcohol removes impurities and permits satisfactory reactions for identity.

Burn, J.H. 1932

Cod Liver Oil Color Test.

Pharm. Jour., 126, p. 466. (Yrbk. Am. Pharm. Assoc., 21, p. 181)

The antimony trichloride reaction with cod liver oil might prove of value for indicating a limit of deterioration or as indicating a characteristic property of cod liver oil. This test should be included in the U.S.P.

Ewe, G.E. 1932

Vitamin Potency of Certain Lofoten Cod Liver Oil.

Jour. Am. Pharm. Assoc., 21, p. 1145. (Yrbk. Am. Pharm. Assoc., 21, p. 360; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 285)

The results of the assay of the vitamin A and D for 23 oils are given and also a brief comment on the physical and chemical properties of the oil.

Nelson, E.M. & Walker, R. 1932

Vitamin Content of Cod Liver Oil.

Jour. Am. Med. Assoc., 98, p. 1263. (Yrbk. Am. Pharm. Assoc., 21, p. 453; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 5, p. 689)

Reports the results of determinations of vitamin content in cod liver oils, tablets, capsules, liquid preparations, concentrates, emulsions and miscellaneous products.

Parker, E.O., Nelson, M. & Bliss, A.R. Jr. 1932

Viosterol and Cod Liver Oil.

Jour. Am. Pharm. Assoc., 20, p. 1291. (Yrbk. Am. Pharm. Assoc., 21, p. 135; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 5, p. 153)

The addition of irradiated ergosterol increases the calcification, of bones but xerophthalmia becomes more aggravated and the general condition does not improve while cod liver oil produces excellent results. The comparative data shows that the substitution of irradiated ergosterol for cod liver oil is not logical.

Valentin, H. 1932

Die Bestimmung des Trangehaltes in Lebertran-emulsion und Prufung derselben auf fettlosliche Vitamin.

Pharm. Ztg., 76, p. 1423. (Yrbk. Am. Pharm. Assoc., 21, p. 509; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 5, p. 78)

The method of preparation and manner of storing compound emulsion of cod liver oil is described. Gives a method of determining the oil content and also a test for the fat soluble vitamins.

Coward, K.H., Dyer, F.J. & Morton, R.A. 1933

Determination of Vitamin A in Cod Liver Oils.

Biochem. Jour., 26, p. 1593. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 295)

Give the experimental results of biological, chemical, and physical examination of the oil for its vitamin A content.

Dyer, F.J. 1933

The Blue Value of Cod Liver Oil.

Am. Jour. Pharm., 105, p. 428. (Yrbk. Am. Pharm. Assoc., 22, p. 195; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 338 & p. 540)

Points out the relationship between the antimony trichloride Blue Value of cod liver oil and that of its Unsaponifiable Fraction.

Ewe, G.E. 1933

Significance of the Stearin Content of Cod Liver Oil.

Jour. Am. Pharm. Assoc., 22, p. 109. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 255)

The removal of stearin from cod liver oil has no effect on the vitamin A potency of the oil.

Griffiths, H.N.? Hilditch, T.P. & Rae, J. 1933

Stability of Vitamin A in Cod Liver Oil Emulsions.

Analyst, 58, p. 65. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 272)

Five different types of cod liver oil emulsions were experimented with. Results proved that cod liver oil emulsions can be kept for 4 months without an appreciable loss of vitamin A potency.

Nobili, G. 1933

(Ferrated Cod Liver Oil.)

Boll. Chim.-farm., 72, p. 161. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 279)

(Several commercial products of this type were found to be unsatisfactory. A formula and method of preparation for the product is also given.)

The original was not available.

Nobili, G. 1933

(Cod Liver Oil with Ferrous Iodide.)

Boll. Chim. farm., 72, p. 281. (Yrbk. Am. Pharm. Assoc., 23, p. 24; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 609)

(Gives a formula for the above preparation.)

The original was not available.

Taub, A. 1933

Permanent Color Standards for U.S.P. Cod Liver Oil.

Jour. Am. Pharm. Assoc., 22, p. 194. (Yrbk. Am. Pharm. Assoc., 22, p. 249; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 6, p. 611)

Fifty-four samples of cod liver oil were examined and color standards suggested for a lighter and a darker product.

Brandys, W. 1934

Pektin als Emulgator fur Leberthranemulsionen.

Pharm. Zentralhl., 75, p. 421. (Am. Jour. Pharm., 106, p. 396)

Describes a simple way of preparing cod liver oil emulsions without the use of emulsifying or homogenizing machines.

(Cook, E.A.) 1934

New Pharmacopoeial Cod Liver Oil Standards.

Am. Jour. Pharm., 106, p. 178.

The U.S.P. X standards for cod liver oil are published to become official January, 1, 1935.

Coppens, P.A. 1934

De Inwerking von Bestanddeelen Uit Levertraan op Tuberkelbacillen.

Pharm. Weekbl., 71, p. 584. (Yrbk. Am. Pharm. Assoc., 23, p. 98; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 7, p. 758)

In the course of time, Bacillus tuberculosis disappears when treated with cod liver oil. The action is due to peroxidases occuring in the living bacteria in conjunction with peroxides formed in the oil.

Dann, W.J. & Moore, T. 1934

Cod Liver Oil.

Biochem. Jour., 27, p. 1166. (Analyst, 59, p. 51; Yrbk. Am. Pharm. Assoc., 23, p. 167)

Describes the absorption spectra of the mixed fatty acids from cod liver oil.

Hochstetter, K. 1934

Lebertranemulsion.

Pharm. Ztg., 79, p. 956. (Yrbk. Am. Pharm. Assoc., 23, p. 24)

Reviews the different emulsions and their ingredients and properties which are official in various pharmacopoeias.

Holmes, A.D. & Remington, R. 1934

Arsenic Content of American Cod Liver Oil.

Indust. Eng. Chem., 26, p. 573. (Yrbk. Am. Pharm. Assoc., 23, p. 167 ; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 7, p. 623)

The arsenic content of several samples of American oil was found to be from 1·4 to 5·1 parts per million. Arsenic is present in the oil in a form of very low toxicity.

Holmes, A.D. & Tripp, F. 1934

Color Standards for Cod Liver Oil.

Jour. Am. Pharm. Assoc., 22, p. 1102. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 7, p. 266)

Several samples of cod liver oil were treated for color reactions. The official standard for medicinal oil should be darker than the proposed U.S.P. Standard no. 1, and lighter than the suggested U.S.P. Standard no. 2.

Kawi, K. & Yoshida, M. 1934

(Vitamin Potency of Japanese Cod Liver Oil.)

Jour. Pharm. Soc. Japan, 54, p. 87. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 7, p. 727)

(The vitamin potency depends on the species of the fish. Results of vitamin A and vitamin D content from different species are given.)

The original was not available.

Lohr, W. 1934

Cod Liver Oil as a Wound Dressing.

1934

Cod Liver Oil for Burns.

Am. Jour. Pharm., 106, p. 491.

In another article entitled " Solid Extracts " says that cod liver oil does not influenc the primary shock of the burn but is very effective in controlling the secondary infection of large areas. It should be remembered that commercial cod liver oil is sterile.

1934

Cod Liver Oil with Cocoa.

Am. Jour. Pharm., 106, p. 108.

In another article entitled " Solid Extracts " says that fresh cod livers can be mixed with cocoa in such a way that all the health giving properties of the livers are retained without oiliness or an offensive taste.

Copping, A.M.

1935

(Origin of Vitamin D in Cod Liver Oil.)

Biochem. Jour., 28, p. 1516. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 8, p. 132)

Determined that copepods give a positive test for vitamin D and are therefore a good source of this substance in the food of the cod.

Mattier, ___ (not available)

1935

(Oxidation of Cod Liver Oil.)

Arch. d. sci. phys. et nat., 16, p. 139. (Am. Jour. Pharm., 107, p. 548)

Oxygen was passed thru cod liver oil at a temperature of 75 degrees and the oxidation followed by determining the acidity of the oil. A curve was obtained- the first 3 hours of which was practically horizontal. This is the time in which saturation of the double bonds take place.

Am. Jour. Pharm., 106, p. 235.

Cod liver oil combined with other fats to make a semi-solid ointment speads up the healing of wounds, due possibly to the high concentration of vitamin A and D.

Poulsson, E. & Ender, F. 1934

The Vitamin Content of Cod Liver Oil.

Am. Jour. Pharm., 106, p. 102.

Experiments showed that cod liver oil from the spawning, poorly nourished cod contains a smaller amount of vitamin A but more vitamin D than does the cod liver oil from the well-nourished not spawning cod.

Reinhardt, E. 1934

Lebertranemulsion.

Apoth. Ztg., 49, p. 858. (Yrbk. Am. Pharm. Assoc., 23, p. 24)

Gives the method and formula for cod liver oil emulsion which is official in the German Pharmacopoeia.

Rothenkirchen, O. 1934

(Cod Liver Oil Emulsification.)

Koln. Pharm. Ztg., 79, p. 804. (Yrbk. Am. Pharm. Assoc., 23, p. 40)

(Describes the technique which should be applied in the preparation of cod liver oil emulsions.)

Sheehey, E.J. 1934

(Effects of Storage Upon Cod Liver Oil.)

Sci. Proc. Roy. Dublin Soc., 20, p. 463. (Yrbk. Am. Pharm. Assoc., 22, p. 194; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 7, p. 126)

(Cod liver oil was stored under 4 different conditions. The antirachitic potency was not altered; the color of the oil was bleached by bright light; no change in proportion of unsaponifiable matter took place; and all portions increased in acid value.)

The original was not available.

Morgan, R.S. & Pritchard, H. 1935

Vitamin Potency and Associated Characteristics of Average Cod Liver Oil.

Analyst, 60, p. 355. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 8, p. 705)

Data and results of biological assays of several samples of cod liver oil for vitamin potency are given.

Oser, B.L. 1935

Cod Liver Oil U.S.P. X, Criticism of Tests and Assays for.

Ind. Eng. Chem., 27, p. 230. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 8, p. 296)

Gives a detailed description of the tests and assays for cod liver oil in the U.S.P. X .

Steel, J.P. 1935

Cod Liver Oil in Treatment of Wounds.

Lancet, 229, p. 290. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 8, p. 751)

Discusses the effectiveness of cod liver oil in the treatment of wounds. It is not understood what constituents of the oil have this very beneficial and healing action.

Gunn, C. & Venables, P.F. 1936

The Determination of Cod Liver Oil Extract of Malt with Cod Liver Oil.

Qt. Jour. & Yrbk. Brit. Pharm. Conf., 9, p. 430 & p. 542.

Gives a detailed method for determining the amount of cod liver oil present and the results obtained with several samples of the preparation.

Iost, V.I. & Kochergin, I.G. 1936

(Cod Liver Oil Treatment of Wounds.)

Novyy. Khirurgich. Arkh., 34, p. 476. (Jour. Am. Med Assoc., 106, p. 586; Qt. Jour. & Yrbk. Brit. Pharm. Conf., 9, p. 612)

(The results of a cod liver oil preparation on many types of wounds including ulcers, burns, frost bites and others are given. Cod liver oil lowers the vitality of pus-producing bacteria.)

The original was not available.

Jones, W.S. & Christiansen, W.C. 1936

Comparison of Spectrometric Method and Antimony Trichloride Test for Estimation of Vitamin A Potency in Cod Liver Oil.

Jour, Am. Pharm. Assoc., 24, p. 1072. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 9, p. 596)

Tests show that the spectrometric method give no better results than the antimony trichloride test.

Lindholm, H.R.V. 1936

(Effect of Storage on Cod Liver Oil.)

Dansk. Tidss. Farm., 10, p. 25. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 9, p. 124)

(Results showed that the destruction of vitamin A was not necessarily accompanied by any alterations in the chemical or physical properties of the oil.)

The original was not available.

Lohr, W. 1936

(Cod Liver Oil for Peptic Ulcer.)

Zentr. f. Chir., 40, p. 2362. (Am. Jour. Pharm., 108, p. 35)

(Oral administration of cod liver oil for peptic ulcers brought excellent results. 80 grams of the oil were given daily between meals and especially at bedtime. It is a valuable tonic and causes local diminution of gastric acidity and has a stimulating action on epithelialization.)

The original was not available.

Stevenson, E. 1936

Cod Liver Oil Treatment of Burns.

Lancet, 229, p. 1376. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 9, p. 331)

Describes the method of treating burns with a pad of lint saturated with cod liver oil, covered with oiled silk and a bandage.

Davson, J. 1937

Tissue Response to Subcutaneous Injections of Cod Liver Oil.

Lancet, 231, p. 737. (Qt. Jour. & Yrbk. Brit. Pharm. Conf., 10, p. 131)

Reports experimental results obtained by injecting cod liver oil subcutaneously under the skin of a rabbit's ear.

UNITED STATES PHARMACOPOEIA

(O-XI) (1820-1930)

HISTORY

OF

OLEUM MORRHUAE

U.S.P. III 1850 p. 32

Oleum Morrhuae· Cod-Liver Oil

A fixed oil obtained from the liver of Gadus/ Morrhua.

U.S.P. IV 1860 p. 39

Oleum Morrhuae Cod-Liver Oil

The fixed oil obtained from the liver of Gadus/ Morrhua, and of other species of Gadus.

U.S.P. V 1870 p. 40

Oleum Morrhuae Cod-Liver Oil

The fixed oil obtained from the liver of Gadus/ Morrhua, and of other species of Gadus.

U.S.P. VI 1880 p. 239

Oleum Morrhuae

Cod Liver Oil

A fixed oil obtained from the fresh livers of Gadus Morrhua Linne, or of other species of Gadus (Class, Pisces; Order, Teleostis; Fam., Gadida).

A colorless or pale yellow, thin, oily liquid, of a slightly fishy odor, a bland, slightly/ fishy taste, and a faintly acid reaction. Sp. gr. 0.920 to 0.925. It is scarcely/ soluble in alcohol, but readily soluble in ether; also in 2.5 parts of acetic ether./ When cooled to near 0°C.(32°F.), a white granular matter separates. On the ad-/dition of sulfuric acid, the oil acquires a violet color, soon changing to brown-ish-/red; and if 1 drop of the Oil be dissolved in 20 drops of disulphide of carbon, and/ the solution shaken with 1 drop of sulfuric acid, it will acquire a violet-blue tint,/ rapidly changing to rose-red and brownish yellow. With nitric acid the Oil yields/ a purple color, changing to brown.

U.S.P. VII 1890 p. 282

Oleum Morrhuae

Cod Liver Oil

Oleum Jecoris Aselli

A fixed oil obtained from the fresh livers of Gadus Morrhua Linne,/ and of other species of Gadus (Class Pisces; order Teleostia; family/ Gadida).

It should be kept in well-stoppered and perfectly dry bottles.

A pale yellow, thin, oily liquid, having a peculiar, slightly fishy, but not/ rancid odor, and a bland, slightly fishy taste./

Specific gravity: 0.920 to 0.925 at 15°C.(59°F.)/

Scarcely soluble in alcohol, but readily soluble in ether, chloroform, or carbon/ disulphide; also in 2.5 parts of acetic ether./

If 1 drop of the Oil be dissolved in 20 drops of chloroform, and the solution/ shaken with 1 drop of sulphuric acid, the solution will acquire a violet-red/ tint, rapidly changing to rose-red and brownish-yellow./

If a glass rod,moistened with sulphuric acid, be drawn through a few drops/ of the Oil, on a porcelain plate, a violet color will be produced./

Cod Liver Oil should be only very slightly acid to litmus paper previously/ moistened with alcohol(limit of free fatty acids)./

When the Oil is allowed to stand for some time at 0°C. (32°F.), very little/ or no solid fat should separate (absence of other fish oils, and of many vegetable/ oils).

If 2 or 3 drops of fuming nitric acid be allowed to flow alongside of 10 or/ 15 drops of the Oil, contained in a watch-glass, a red color will be produced/ at the point of contact. On stirring the mixture with a glass rod, this color/ becomes bright rose-red, soon changing to lemon-yellow (distinction from seal/ oil, which shows at first no change of color, and from other fish oils, which/ become at first blue, and afterwards brown and yellow.

U.S.P. VIII 1900 p. 319

Oleum Morrhuae

Cod Liver Oil

A fixed oil obtained from the fresh livers of Gadus morrhua Linne,/ and of other species of Gadus. It should be kept in a cool place, in/ well stoppered bottles, which have been thoroughly dried before filling./

A pale yellow, thin, oily liquid, having a peculiar, slightly fishy, but not/ rancid odor, and a bland, fishy taste./

Specific gravity: 0.918 to 0.922 at 25°C.(77°F.)./

Very slightly soluble in alcohol, but readily soluble in etfer, chloroform, or/ carbon disulphide; also in 2.5 parts of acetic ether.

If 1 drop of the Oil be dissolved in 20 drops of chloroform and the solution/ shaken with 1 drop of sulphuric

acid, the solution will acquire a violet-red tint,/ rapidly changing to rose-red and finally to brownish yellow./

If a glass rod moistened with sulphuric acid be drawn through a few drops of/ the Oil, on a porcelain plate, a violet color will be produced./

Cod Liver Oil should be only very slightly acid to blue litmus paper which/ has been previously moistened with alcohol (limit of free fatty acids).

If 2 or 3 drops of fuming nitric acid be allowed to flow alongside of 10 or 15/ drops of the Oil. contained in a watch-glass, a red color will be produced at the/ point of contact. On stirring the mixture with a glass rod, this color becomes/ bright rose-red, soon changing to lemon-yellow (distinction from seal oil, which/ shows at first no change of color, and from other fish oils, which become at first/ blue and afterwards brown and yellow)./

Cod Liver Oil, saponified by alcoholic potassium hydroxide T.S. should show/ a saponification value of 175 to 185 (see Appendix Test no. 99)./

If 0.3 Gm. of Cod Liver Oil be dissolved in 10 cc. of chloroform in a 250 cc./ flask or bottle, and 25 cc. of a mixture of equal volumes of alcoholic iodine T.S.. and alcoholic mercuric chloride T.S. added, and if, after standing for four hours,/ protected from light, 20 cc. of potassium iodide T.S. be introduced, and the/ mixture diluted with 50 cc. of water, on titrating the excess of iodine with/ tenth-normal sodium thiosulphate V.S., and iodine value of not less than 140/ nor more than 150 should be obtained (see Appendix, Test no. 51)./

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

U.S.P. IX 1910 p. 297

Oleum Morrhuae

Cod Liver Oil

Ol. Morrh.-Oleum Jecoris Aselli

A fixed oil obtained from the fresh livers of Gadus Morrhua Linne/ and of other species of Gadus (Fam. Gadidae). Preserve it in a cool/place, in well-closed containers, which have been thoroughly dried/ before filling.

Cod Liver Oil is a pale yellow, thin, oily liquid, having a peculiar, slightly/ fishy, but not rancid odor, and a fishy taste.

It is slightly soluble in alcohol; soluble in ether, chloroform, carbon disulphide,/ or ethyl acetate./

Specific gravity: 0.918 to 0.922 at 25°C./

A solution of 1 drop,of the Oil in 1 mil of chloroform when shaken with 1 drop/ of sulphuric acid acquires a violet-red tint, gradually changing to reddish-/brown.

Allow 2 or 3 drops of fuming nitric acid (specific

gravity about 1.44) to flow/ alongside of 10 or 15 drops of the Oil contained in a watch glass; a reddish or/ purplish color is produced at the zone of contact. On stirring the mixture with/ a glass rod, this color becomes bright rose-red (distinction from seal oil, which/ shows no change in color, and from other fish oils, which become blue)./

Cod Liver Oil is only slightly acid to litmus paper which has been previously. moistened with alcohol (free fatty acids)./

Saponification value: not less than 180 nor more than 190 (see Part II, Test/ no.9)./

Iodine Value: not less than 140 nor more than 180 (see Part II, Test no. 8)./

Preparation- Emulsum Olei Morrhuae/

Average Dose- Metric, 10 mils- Apothecaries, $2\frac{1}{2}$ fluidrachms.

U.S.P. X 1920 p. 263

Oleum Morrhuae

Cod Liver Oil

Ol. Morrh.

The fresh oil,obtained from the fresh livers of Gadus morrhua Linne/ and of other species of Gadus.

Cod Liver Oil may be assayed for its vitamine A potency, and should/ then contain at least 50 units per Gm. Cod Liver Oil so assayed must be/ labled " This unit is not a measure of the antirachitic activity of Cod/ Liver Oil.

Description and physical properties- A pale yellow, thin, oily liquid. It has a/ peculiar, slightly fishy, but not a rancid odor, and a fishy taste./

Cod Liver Oil is slightly soluble in alcohol, but is soluble in ether, chloroform,/ carbon disulphide, and in ethyl acetate./

Tests for identity and purity- Specific gravity: 0.918 to 0.927 at 25°C./

A solution of 1 drop of the Oil in 1 cc. of chloroform, when shaken with 1/ drop of sulphuric acid, acquires a violet-red tint, gradually changing to red-/dish brown.

Dissolve 2 Gm. of Cod Liver Oil in 20 cc. of a mixture of equal volumes of/ alcohol and ether, which previously has been neutralized with tenth-normal/ sodium hydroxide, using 5 drops of phenolphthalein T.S. as indicator, and/ titrate with tenth-normal sodium hydroxide to the production of a pink color/ which persists for fifteen seconds; not more than 1 cc. of tenth-normal sodium/ hydroxide is required (free acid)./

Unsaponifiable matter: not more than 1.5 per cent

page 463./

gravity about 1.44) to flow/ alongside of 10 or 15 drops of the Oil contained in a watch glass; a reddish or/ purplish color is produced at the zone of contact. On stirring the mixture with/ a glass rod, this color becomes bright rose-red (distinction from seal oil, which/ shows no change in color, and from other fish oils, which become blue)./

Cod Liver Oil is only slightly acid to litmus paper which has been previously. moistened with alcohol (free fatty acids)./

Saponification value: not less than 180 nor more than 190 (see Part II, Test/ no.9)./

Iodine Value: not less than 140 nor more than 180 (see Part II, Test no. 8)./

Preparation- Emulsum Olei Morrhuae/

Average Dose- Metric, 10 mils- Apothecaries, $2\frac{1}{2}$ fluidrachms.

U.S.P. X 1920 p. 263

Oleum Morrhuae

Cod Liver Oil

Ol. Morrh.

The fresh oil,obtained from the fresh livers of Gadus morrhua Linne/ and of other species of Gadus.

Cod Liver Oil may be assayed for its vitamine A potency, and should/ then contain at least 50 units per Gm. Cod Liver Oil so assayed must be/ labled " This unit is not a measure of the antirachitic activity of Cod/ Liver Oil.

Description and physical properties- A pale yellow, thin, oily liquid. It has a/ peculiar, slightly fishy, but not a rancid odor, and a fishy taste./

Cod Liver Oil is slightly soluble in alcohol, but is soluble in ether, chloroform,/ carbon disulphide, and in ethyl acetate./

Tests for identity and purity- Specific gravity: 0.918 to 0.927 at 25°C./

A solution of 1 drop of the Oil in 1 cc. of chloroform, when shaken with 1/ drop of sulphuric acid, acquires a violet-red tint, gradually changing to red-/dish brown.

Dissolve 2 Gm. of Cod Liver Oil in 20 cc. of a mixture of equal volumes of/ alcohol and ether, which previously has been neutralized with tenth-normal/ sodium hydroxide, using 5 drops of phenolphthalein T.S. as indicator, and/ titrate with tenth-normal sodium hydroxide to the production of a pink color/ which persists for fifteen seconds; not more than 1 cc. of tenth-normal sodium/ hydroxide is required (free acid)./

Unsaponifiable matter: not more than 1.5 per cent

page 463./

Saponification value: not les than 180 and not more than 190. page 457./

Iodine value: not less than 140 and not more than 180, page 445./

Preserve in a cool place, in well-closed containers which have been/thoroughly dried before filling.

Assay- Proceed.

U.S.P. XI 1930 p. 261

Oleum Morrhuae

Cod Liver Oil

Ol. Morrh.

The partially destearinated fixed oil from fresh livers of/Gadus morrhua Linne and other species of the Family Gadidae. Cod/ Liver Oil may be flavored by the addition of not more than 1 per cent of/ any one or any mixture of flavoring substances recognized in this Pharma-/copoeia. Cod Liver Oil contains in each Gm. at least 600 U.S.P. Units/ of Vitamin A and at least 85 U.S.P. Units of Vitamin D.*/

The Vitamin A potency and Vitamin D potency of Cod Liver Oil/ when designated shall be expressed in "United States Pharmacopoeia/ Units" per gram of oil and may be referred to as "U. S. P. Units"/

Description and physical properties- A thin, oily liquid, having a peculiar, slightly/ fishy, but not a rancid odor, and a fishy taste./

Cod Liver Oil is slightly soluble in alcohol, but is freely soluble in ether,/ in chloroform, in carbon disulfide, and in ethyl acetate./

Tests for identity and purity- Specific gravity 0.918 to 0.927 at 25° C./

A solution of 1 drop of Cod Liver Oil in 1 cc. of chloroform, when shaken/with 1 drop of sulfuric acid, acquires a violet-red tint, gradually changing/ to reddish brown./

When viewed transversely in a tall, cylindrical, standard oil-sample bottle/ of colorless glass of about 120 cc. capacity, the color of Cod Liver Oil shall/ not be more intense than that of a mixture of 11 cc. of cobaltous chloride/ C. S., page 557, 76 cc. of ferric chloride C. S., page 558, and 33 cc. of distilled/ water, in a similar bottle of the same internal diameter./

Dissolve 2 Gm. of Cod Liver Oil, accurately

weighed, in 30 cc. of a mixture/ of equal volume of alcohol and ether, the mixture having been previously/ neutralized with tenth-normal sodium hydroxide, using 5 drops of phenol-/ phthalein T. S. as the indicator, and boil the oil solution gently under a reflux/ condensor for ten minutes. Cool and titrate the mixture with tenth-normal/ sodium hydroxide to the production of a pink color which persists afte/ shaking for thirty seconds. Not more than 1cc. of tenth-normal sodium/ hydroxide is required (free acid)./

Unsaponifiable matter: not more than 1.3 per cent, page 446./

Fill a tall, cylindrical, standard-oil bottle of about 120 Cc. capacity/ with Cod Liver Oil, at a temperature between 23° and 28° C., stopper, and/ immerse the bottle in a mixture of ice and distilled water for five hours. The/ oil remains fluid and does not deposit stearin (undestearinated cod liver oil)./

Saponification value: not less than 180 and not more than 192, page 445./ When carbon dioxide has been used as a preservative the oil must be exposed/ in a shallow dish in a vaccuum desiccator for twenty-four hours before weighing/ the sample for determination of the saponification value./

Iodine value: not less than 145 and not more than 180, page 445./

Assay- Proceed as directed under Assays for Vitamin A and D in Cod Liver Oil, page 478./

Storage- Preserve Cod Liver Oil in a cool place, in well closed containers which/ have been thoroughly dried before filling. Cod Liver Oil may be bottled or/ packaged in a vaccuum or in the presence of an inert gas./

Preparation- Emulsion Olei Morrhuae

	Metric	Apothecaries
Average Dose- Infants,	4 cc. --	1 fluidrachm
Adults,	8 cc. --	2 fluidrachms

Note- Cod Liver Oil containing more than the minimum U. S. P./ requirements for both vitamin A and vitamin D may be administered in/ proportionally lower doses.

*One "United States Pharmacopaeia Unit of Vitamin A" is equal, in growth/ promoting and antiophthalmic activities for the rat, to one International Unit of/ Vitamin A as defined and adopted by the Conference of Vitamin Standards of the/ Permanent Commission on Biological Standardization of the League of Nations in/ June of 1931; one "United States Pharmacopaeia Unit of Vitamin D" is equal, in anti rachitic potency for the rat, to one International Unit of Vitamin D as defined/ and adopted by the Conference of

Vitamin Standards of the Permanent Commission/ on Biological Standardization of the League of Nations in June of 1931./

SUMMARY OF U.S.P. DATA OF

OLEUM MORRHUAE

Where and When Official:-

U.S.P. 1850; '60; '70; '80; '90; 1900; '10; 20; 30

Official Latinzed Title:-

Oleum Morrhuae

Official English Title:-

Cod Liver Oil

Official Abbreviation:-

Ol. Morrh.

Official Synonym:-

Scientific Name:-

Gadus Morrhua and other species of Gadus

Family:-

Gadidae

Description:-

See the above.

Official Description:-

Emulsum Olei Morrhuae

Official Dose:-

Infants, 4 cc. 1 fluidrachm

Adults, 8 cc. 2 fluidrachms

List of Journals Consulted

Am(erican) Jour(nal) (of) Pharm(acy)

v. 1-108. (1825-1936)

Proc(eedings) Am(erican) Pharm(aceutical) Assoc(iation)

v. 1-59 (1851-1911)

Q(uar)t(erly) Jour(nal) & Y(ea)rb(oo)k (of Pharmacy of the) Brit(ish) Pharm(aceutical) Conf(erence)

v. 1-10 (1928-1937)

Y(ea)rb(oo)k (of) Am(erican) Pharm(aceutical) Assoc(iation)

v. 1-23 (1912-1934)

Y(ea)rb(oo)k (of Pharmacy & Transactions of the) Brit(ish) Pharm(aceutical) Conf(erence)

v. 4-64 (1867-1927)

List of Books Consulted

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1 ed., 1806; 4 ed., 1818; 6 ed., 1825; 7 ed., 1827; 8 ed., 1830; 9 ed., 1831.

King, J. (The) Am(erican) Disp(ensatory)

6 ed., 1864; 8 ed., 1872; 10 ed., 1875; 15 ed., 1881; 16 ed., 1889; 18 ed., 1898, v. 1; 18 ed., 1900, v. 2.

King, J. & Newton, R. S. (The) Eclectic Disp(ensatory) (of) (the) U(nited) S(tates of) A(merica)

1 ed., 1852.

(The) Nat(ional) Disp(ensatory)

2 ed., 1879; 3 ed., 1884; 5 ed., 1894.

Thacher, J. New Disp(ensatory)

1 ed., 1810; 2 ed., 1813; 4 ed., 1821.

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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., 1865; 12 ed., rev., 1869; 13 ed., 1870; 13 ed., rev., 1871; 14 ed., 1879; 15 ed., 1883; 16 ed., 1892; 17 ed., 1894; 19 ed., 1907; 20 ed., 1918; 21 ed., 1926; 22 ed., 1937.

Approved W O Richtmann.
Prof. of Pharmacognosy