

**HYOSCYAMINÆ SULPHAS.**

HYOSCYAMINE SULPHATE.

[NEW.]

 $(C_{17}H_{23}NO_3)_2 \cdot H_2SO_4 \cdot 2H_2O$ , eq. 707.20.

The Sulphate of an alkaloid contained in Hyoscyamus Leaves, and possibly other solanaceous plants.

**Solubility.**—2 in 1 of Water; 1 in  $4\frac{1}{2}$  of Alcohol (90 p.c.); very slightly soluble in Chloroform or Ether.

**Medicinal Properties.**—In small doses it is a sedative for mental excitement and insomnia, and in large doses it has been used for calming the excitement of delirium tremens and acute mania, but for this purpose it is superseded by the salts of Hyoscine.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  of a grain.

**Foreign Pharmacopœias.**—Official in U.S.; not in the others.

**Description.**—A crystalline powder, deliquescent, odourless, having a bitter acrid taste.

**Tests.**—Melting point  $402.8^\circ$  F. ( $206^\circ$  C.). It affords the reactions characteristic of Sulphates. A solution in Water acidulated with Hydrochloric Acid yields no precipitate with Solution of Platinic Chloride, but affords with Solution of Auric Chloride a yellow precipitate soluble in boiling Water acidulated with Hydrochloric Acid, and again deposited, as the solution cools, in brilliant, golden-yellow scales (distinction from Atropine). Heated to redness with access of air it leaves no residue.

Commercial Hyoscyamine Sulphate melts at about  $200^\circ$  C. Jowett found the pure salt to melt at  $204^\circ$  C. It is suggested that an official melting point should be given 'not lower than  $200^\circ$  C.' It is distinguished from Atropine by its optical activity and by the melting point of the Auric Chloride ( $160^\circ$  C.).—*P.J.* '98, ii. 196.

Not Official.

**ICHTHYCOLLA.**

ISINGLASS.

The swimming bladder or sound of various species of *Acipenser*, prepared and cut into fine shreds.

This is included among the Tests of the B.P., its solution being used for Tannic Acid, with which it forms an insoluble compound.

This well-known substance was in the early London Pharmacopœias, and called Ichthyocola or Fish glue; it was used in medicine as a nutrient. It is still to be found in most of the Continental Pharmacopœias. It is used for fining Wine, for which purpose Gelatin does not answer. Russian Isinglass is reckoned the best quality. Isinglass is used for Court Plaster and gold-beater's skin.

Isinglass 15 grains to the fl. oz. of Glycerin is useful in some skin diseases.

**Foreign Pharmacopœias.**—Official in Austr., Belg., Fr., Hung. and U.S.; Dan., Ital., Jap., Norw. and Russ., Colla Piscium; Mex., Cola de Pescada; Port., Gelatina de Peixe; Span., Ictiocolla; not in the others.

**Test.**—Isinglass is not soluble in cold water; Gelatin is.

Not Official.

**ICHTHYOL.**

AMMONIUM ICHTHYOLSULPHONATE.

It is obtained by the action of Sulphuric Acid on a mineral oil distilled from peculiar fossil deposits, principally fish, and subsequent neutralisation with Ammonia.

A reddish-brown syrupy liquid with igneous bituminous odour and taste. Treated with Potassium Hydroxide Solution it develops an odour of Ammonia. When dried in a water-bath it loses at least half its weight.

**Solubility.**—Entirely soluble in Water, partly soluble in Alcohol (90 p.c.) and Ether, entirely in a mixture of both.

It mixes readily with Glycerin, Fats, Oils, Soft Paraffin, and Lanoline.

**Medicinal Properties.**—It is said to have remarkable effects in eczema. May be mixed with Soft Paraffin or Lard in the proportion of 20 to 30 p.c. decreased to 10 p.c. for moist eczema, and 50 p.c. reduced to 20 p.c. for the papular condition. The hand requires a stronger preparation than the face, and children a weaker one than adults. It is also used in acne rosacea, and lichen urticaria. (It is not indicated in psoriasis.) It is also applied in rheumatism.

Internally it has been given for eczema, also in acute and chronic rheumatism, and in chronic catarrh of the stomach and intestines.—*L.* '83, i. 334; *B.M.J.* '87, i. 800.

The following formula is recommended for eczema:—Litharge, 10; Diluted Acetic Acid, 30; boil down to 20, add Olive Oil, Lard, and Ichthyol of each 10, all by weight, to make an ointment.—*L.* '83, i. 334. It is better to boil down to 13, as Water separates from the Ointment if evaporated only to 20 as directed.

Found useful in every variety of eczema as 5 to 10 p.c. Ointment.—*B.M.J.E.* '93, ii. 68.

As a gargle in acute pharyngitis.—*L.* '94, ii. 1113.

As a paint (20 p.c. sol.) for foot blisters.—*T.G.* '95, 56.

As 10 p.c. antiseptic injection in vesical catarrh, *M.A.* '95, 139; and in gonorrhœa, *T.G.* '93, 349; *Pr.* lii. 370.

In rheumatism.—*L.* '86, ii. 645; in traumatic erysipelas.—*L.* '87, i. 191; as an application in pruritus and prurigo, also for indolent ulcers.—*B.M.J.* '86, i. 164.

Ichthyol applied so as to cover the healthy skin beyond the affected part modifies and distinctly shortens the duration of, erysipelas; 30 to 60 p.c. Ointment, or 10 p.c. Collodion for sensitive skins.—*T.G.* '91, 862; '92, 294, 684; *M.A.* '95, 249; *B.M.J.E.* '94, i. 24, 43; as a 5 to 10 grain suppository in prostatitis.—*B.M.J.E.* '93, ii. 24.

For uterine affections it is used with Glycerin as a tampon.—*L.* '90, i. 1142; '91, i. 55.

It is not without danger, as an application of 1 Ichthyol and 5 Vaseline to a child four years old produced stupor for twelve hours, but it completely recovered.—*B.M.J.* '84, ii. 1013.

Ichthyol in 3 grain doses recommended in urticaria.—*B.M.J.E.* '95, i. 16.

Ichthyol internally recommended in phthisis.—*L.* '94, i. 1521; *B.M.J.E.* '95, i. 51; '95, ii. 28; *P.J.* '95, ii. 51; '96, ii. 484.

Zinc Oxide, 20; Magnes. Carb., 10; Ichthyol, 1–2; useful for burns of the first degree. Calci Carb., 10; Zinci Oleatis, 10; Aq. Calcis, 10; Ichthyol, 1–3; for extensive burns.—*B.M.J.E.* '95, ii. 92.

1 to 2 p.c. aqueous solution used as irrigations in gonorrhœa.—*L.* '97, i. 1165; *T.G.* '96, 350.

In small pox as an ointment: Ichthyol, 10; fat, 60; Lanolin, 20.—*B.M.J.E.* '97, i. 99.

**Injectio Ichthyol** (pro urethra) 2 to 5 p.c.—*Lock Hospital.*

**Dose.**—15 to 30 grains.

**Prescribing Notes.**—In **pill** made up with a mixture of Althæa 3, Liquorice powder 3, and Tragacanth 2; also given in **capsules**, and Compressed Tablets.

The Oils of Citronella, Eucalyptus, and Pinus Sylvestris have been suggested for disguising the odour of Ichthyol in external applications. For internal use milk, chocolate, or Oil of Peppermint have been used.—*P.J.* '95, ii. 391. Essence of Almonds is also very good.

**Incompatibles.**—Alkaloids are incompatible with Ammonium Ichthyolsulphonate, and decompose it with formation of an Ichthyolsulphonate of the alkaloid, and liberation of Ammonia. With alkaloidal salts a double decomposition takes place.—*P.J.* '95, ii. 508.

**NATRIUM SULPHO-ICHTHYOLICUM** (Sodium Ichthyolsulphonate).—A brownish-black tar-like mass with a bituminous odour.

**Solubility.**—It makes a somewhat turbid solution with Water; it dissolves in a mixture of equal weights of Alcohol and Ether; it is soluble in Benzol.

No vapour of Ammonia is evolved from the aqueous solution upon warming it with Soda Solution.

**Medicinal Properties.**—The same as the Ammonium salt.

**Foreign Pharmacopœias.**—Ital. (Ittiolo) and Russ.; not in the others.

**THIOL.**—An artificial substitute for Ichthyol prepared by the action of Sulphur on gas oil and subsequent treatment with Sulphuric Acid. It is supplied in two forms, a **powder** and a **liquid**; it is soluble in water and almost odourless.

Useful in acute forms of erythema, in erysipelas, and in inflammatory diseases of women, also in pruritus of the female genitals.—*Fr.* lvi. 565.

A 20 to 40 p.c. solution is used for erysipelas in same manner as Ichthyol.—*B.M.J.E.* '94, i. 103; *T.G.* '94, 627.

**ICHTHALBIN.**—A combination of Albumen with Ichthyol, is a greyish-brown powder, almost odourless and tasteless. Insoluble in water, decomposed by alkalis. Recommended for internal use. Not so well suited for external use.

**Dose.**—15 to 30 grains per diem for adults, 15 grains for children.—*P.J.* '97, ii. 4 and 446; *L.* '97, ii. 271.

**Tumenol.**—A similar body to Ichthyol, is a dark brown thick liquid. It contains both Tumenol oil and Tumenol powder.—*P.J.* (3) xxii. 425.

#### Not Official.

### IGNATIA AMARA.

The seed of *Strychnos Ignatii*.

**Medicinal Properties.**—Similar in action to Nux Vomica.

**Foreign Pharmacopœias.**—Official in Fr., Fève de St. Ignace; Mex., Cabalonga; Port., Fava de S. Ignacio; Span., Haba de S. Ignacio.

#### Preparations.

**EXTRACTUM IGNATIÆ AMARÆ.**—Prepared by percolating Ignatia beans in fine powder, with Alcohol (90 p.c.), and evaporation.

Tonic, given in debility of the digestive organs.

**Dose.**— $\frac{1}{2}$  to 1 grain in a **pill** three times a day.

(Not in the other Pharmacopœias.)

**TINCTURA IGNATIÆ AMARÆ.**—Ignatia beans in fine powder, 1; Alcohol (90 p.c.) sufficient to percolate 10.

**Dose.**—5 to 20 minims.

**Foreign Pharmacopœias.**—Official in Mex., Tintura de Cabalongas 1 in 5; not in the others.

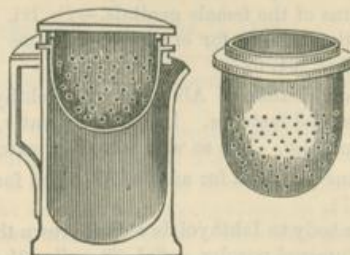
## INFUSA.

### INFUSIONS.

Infusions, though generally made with boiling water, are in some cases ordered to be made at a lower temperature, as Infusum Calumbæ, the starch of which would be dissolved by boiling water. The mucilage and vegetable albumen present are, however, dissolved by cold water, and these render the infusion liable to change.

The Infusion Pot, invented by the late Author and placed in the Exhibition of 1851, answers well for Infusions, if proper sizes are used for the quantities ordered, so that the ingredients are held by the perforated basin in the upper part of the fluid and *under the surface*. The impregnated fluid becoming of greater density falls to the bottom, thus exposing the ingredients constantly to the continued action of fresh unimpregnated fluid until the action ceases, and the soluble matter is most effectually extracted. *When hot infusions are made, boiling water should be first poured into the pot, to thoroughly warm it; this being thrown out, the ingredients are put into the colander, and the requisite quantity of boiling water poured upon them. The pots have the directions for use enamelled upon them.*

The annexed section of the Infusion Pot will show its construction:—



Infusions are very apt to change in hot weather, and several means have been proposed to preserve them. Small bottles when quite filled with recently made infusion, and kept at the boiling-point for five minutes, then tied over with bladder, or stoppered whilst hot, keep well for several weeks. Inf. Gentian. Co., Inf. Aurant. Co., so treated, kept good for three months.

Concentrated Infusions are very largely used by general practitioners and some chemists; although very convenient and economical they have not the same aroma as the freshly made infusion.

B.P. '98 has included some *Liquores Concentrati*, and the products of their dilution with water may be prescribed by practitioners in place of the corresponding Official Infusions. The diluted *Liquores* differ in minor respects from freshly prepared Decoctions or Infusions, and contain a small quantity of Ethylic Alcohol.

The following are the Infusions of the British Pharmacopœia. The full formulas for these Infusions will be found under the names of the substances from which they are prepared.

It has been thought desirable, for the convenience of the dispenser, to add a table of the ingredients and time required.

Boiling Distilled Water is to be used, unless otherwise stated.

INF. AURANTII (dried peel)	. . . ½ oz.	water 10 fl. oz.	infuse ½ hour and strain.	
INF. AURANTII COMP.				
Dried Bitter-Orange Peel	. . . ¼ oz.			
Fresh Lemon Peel, cut small	55 grains.	} . 10 . . . ¼ "	"	"
Cloves (bruised)	. . . . . 28 grains.			
INF. BUCHU (leaves freshly broken)	½ oz.	. . . . . 10 . . . . . ¼ "		
INF. CALUMBÆ (root thinly sliced)	½ oz.	(cold) 10 . . . . . ½ "		
INF. CARYOPHYLLI (bruised)	¼ oz.	. . . . . 10 . . . . . ¼ "		
INF. CASCARILLÆ (No. 10 powder)	½ oz.	. . . . . 10 . . . . . ¼ "		
INF. CHIRATÆ (cut small)	. . . ½ oz.	. . . . . 10 . . . . . ¼ "		
INF. CINCHONÆ ACIDUM.				
Red Cinchona Bark in No. 40 powder	. . . . . ½ oz.	} . 10 . . . . . 1 "	"	"
Aromatic Sulphuric Acid	. . . 1 fl. drm.			
INF. CUSPARIÆ (No. 20 powder)	½ oz.	. . . . . 10 . . . . . ¼ "		
INF. DIGITALIS (No. 20 powder)	30 grains.	. . . . . 10 . . . . . ¼ "		
INF. ERGOTÆ (freshly crushed)	½ oz.	. . . . . 10 . . . . . ¼ "		
INF. GENTIANÆ COMP.				
Gentian Root (thinly sliced)	55 grains	} . 10 . . . . . ¼ "	"	"
Dried Bitter-Orange Peel	. . . 55 grains			
Fresh Lemon Peel (cut small)	¼ oz.			
INF. KRAMERIÆ (bruised)	. . . ½ oz.	. . . . . 10 . . . . . ¼ "		
INF. LUPULI (freshly broken)	. . . ½ oz.	. . . . . 10 . . . . . ¼ "		
INF. QUASSIÆ (wood finely rasped)	44 grains (cold)	10 . . . . . ½ "		
INF. RHEI (in thin slices)	. . . ½ oz.	. . . . . 10 . . . . . ¼ "		
INF. ROSÆ ACIDUM (broken petals)	¼ oz.	} . . . 10 . . . . . ¼ "	"	"
Dil. Sulph. Acid	1 fl. drm.			
INF. SCOPARIÏ (dried and bruised)	1 oz.	. . . . . 10 . . . . . ¼ "		
INF. SENEGÆ (No. 10 powder)	½ oz.	. . . . . 10 . . . . . ½ "		
INF. SENNÆ . . . . . Senna	1 oz.	} . 10 . . . . . ¼ "	"	"
Ginger (sliced)	28 grains			
INF. SERPENTARIÆ (No 10 pow.)	½ oz.	. . . . . 10 . . . . . ¼ "		
INF. UVÆ URSI (bruised)	. . . ½ oz.	. . . . . 10 . . . . . ½ "		

*General Directions given in German Pharmacopœia.*—Infusions for which the amount of the respective substances is not specified, are prepared so that 10 parts of strained product are obtained from 1 part of substance. In the case of substances for which a limit of dose is given the quantity of substance is to be specified by the physician.

*Directions in United States Pharmacopœia.*—An ordinary Infusion, the strength of which is not directed by the physician nor specified by the Pharmacopœia, shall be prepared as follows:—Put 10 of the substance into a suitable vessel, provided with a cover, pour upon it 200 of boiling Water, and let it stand half-an-hour; then strain and pass enough Water through the strainer to make the Infusion measure 200 parts. The strength of Infusions of energetic or powerful substances should be specially prescribed by the physician.

Papers on Infusions.—*P.J.* '95, ii. 416, 506.

## INJECTIONES HYPODERMICÆ.

## HYPODERMIC INJECTIONS.

The following are contained in the British Pharmacopœia, the formulas for which will be found under the names of the substances from which they are prepared:—

INJECTIO APOMORPHINÆ HYPODERMICA.	1 grain in 110 minims.
INJECTIO COCAINÆ HYPODERMICA . . .	10 grains in 110 minims.
INJECTIO ERGOTÆ HYPODERMICA . . .	about 33 " 110 "
INJECTIO MORPHINÆ HYPODERMICA . . .	5 " (Tartrate) in 110 mins.

Most of the medicines used hypodermically can be obtained either in the form of **Gelatin lamels, or compressed discs.**

Not Official.

**INULA.**

ELECAMPANE.

The root of *Inula Helenium*.

It contains large quantities of Inulin, a body allied to starch; also a crystalline bitter substance Helenin or Alantcamphor.

**Foreign Pharmacopœias.**—Official in Belg., Dutch, Fr., Ital., Mex., Port., Span., Swed. and U.S.; not in the others.

**HELENINE** ( $C_6H_{10}O$ ).—Colourless acicular crystals, almost insoluble in Water, but readily soluble in hot Absolute Alcohol, Ether, and Volatile Oils. Has been found to possess powerful antiseptic properties, and has been given in broncho-pneumonia, tuberculosis, and diphtheria.

**Dose.**— $\frac{1}{4}$  to 2 grains.

**IODOFORMUM.**

IODOFORM.

$CHI_3$ , eq. 390·61.

Iodoform or Tri-iodomethane is a product of the action of Iodine on Ethylic Alcohol in the presence of solution of Potassium Carbonate.

**Solubility.**—Very sparingly soluble in Water; 1 in 7 of Ether; 1 in 14 of Chloroform; 1 in 120 of Alcohol (90 p.c.). It is also soluble in the fixed and volatile oils, and about 1 in 100 of Glycerin; 1 in 30 of Olive Oil; 1 in  $3\frac{1}{2}$  of Carbon Bisulphide; sparingly in Petroleum Spirit.

Precipitated Iodoform frequently gives a turbid solution in Chloroform and Carbon Bisulphide, owing to the dampness of the powder, the adhering water being insoluble. It rapidly dries on free exposure to air, and will then form a clear solution.

**Medicinal Properties.**—Antiseptic, deodorant, alterative, and local anæsthetic. Useful in cleansing foul ulcers, buboes, soft chancres, or syphilitic sores, the **powder** being applied, or an **ointment** (1 drm. to 1 oz. of Lard), or dissolved in Oil of Eucalyptus; also in rheumatic pain, in scaly and parasitic skin diseases and ulcer of anus. Used as a deodorant and to relieve the pain of cancer and abate the progress of

the disease; also to relieve sciatica and neuralgia, goitre, and glandular enlargements; as an **intralaryngeal injection** in **phthisis**; as a **suppository** in chronic prostatitis and hæmorrhoids and anal fissure.

A good **application** is made by dissolving 1 of Iodoform in 10 of Collodion.

**Whitehead's Varnish** is Compound Tincture of Benzoin, in which Ether (sp. gr. .735) has been substituted for Alcohol (90 p.c.), containing 10 p.c. of Iodoform.

As a paint, or with an insufflator, in diphtheria, *L.* '86, i. 476, *L.M.R.* '89, 20; on its antiseptic properties, *B.M.J.* '87, ii. 1439, *T.G.* '87, 767; internally in phthisis, *B.M.J.* '88, i. 186, *B.M.J.E.* '94, ii. 39; hypodermically in syphilis, *T.G.* '85, 643; to prevent pitting in smallpox, *L.* '86, ii. 889; injections of Iodoform in goitre, *Pr.* lvi. 334; in tuberculous disease of the knee joint, *B.M.J.* '97, ii. 397.

As an antiseptic, Iodoform, also mixed with Boracic Acid or Bismuth, is used as an **insufflation** for ulcerated throat or for oæna, and as a packing in bone cavities.—*L.* '93, ii. 131.

Eucalyptus Oil, Balsam of Peru, Musk, and Coumarin prepared from Tonka beans have been used to cover the smell of Iodoform.

Oil of Geranium answers the purpose best (5 minims to 2 drm.)

**Dose.**— $\frac{1}{2}$  to 3 grains.

**Prescribing Notes.**—The Iodoform should be finely powdered, or still better, use precipitated Iodoform, and suspend it with Mucilage of Acacia for a **mixture** or **lotion**; or it may be given in **pills** made with Glucose or  $\frac{1}{2}$  of its weight of Compound Powder of Tragacanth and Dispensing Syrup *q. s.*

**Incompatible.**—Iodoform is incompatible with Calomel.—*P.J.* (3) xvii. 882; *T.G.* '88, 200.

**Official Preparations.**—Suppositoria Iodoformi, and Unguentum Iodoformi.

**Not Official.**—Iodoform antiseptic dressings, Bougies of Iodoform and Eucalyptus, Emulsio Iodoformi, Injectio Iodoformi, Insufflatio Iodoformi, Nebula Iodoformi, Pulvis Iodoformi Compositus, Unguentum Iodoformi cum Atropina, Iodoformine, Europhen, Iodo-Salicylic Acid, Di-iodo-salicylic Acid, Di-iodoform, Loretin.

**Foreign Pharmacopœias.**—Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**Description.**—Shining, lemon-yellow, small hexagonal crystals; somewhat unctuous to the touch; having a persistent and disagreeable odour and taste.

It is also in commerce in the form of **powder** (precipitated), which is more convenient for incorporation with other substances.

Iodoform is slowly volatile at the ordinary temperature of the air.

**Tests.**—When heated it first melts to a brown liquid, then gives off brown and violet vapours, leaving a black residue which entirely disappears on continued incineration. When warmed with an alcoholic solution of Potassium Hydroxide, and the resulting liquid acidulated with Nitric Acid, Iodine is liberated, the mixture becoming brown, and, when cold, blue on the addition of Mucilage of Starch. Water with which Iodoform has been shaken should be colourless, and not bitter (absence of soluble yellow colouring matters, Picric Acid, &c.), and should not yield any reaction with the tests for Iodides.

## Preparations.

**SUPPOSITORIA IODOFORMI.** IODOFORM SUPPOSITORIES.

Iodoform, 36 grains; Oil of Theobroma, a sufficient quantity for 12 Suppositories. Proceed as directed for Tannic Acid Suppositories.

Each of these suppositories contains 3 grains (or .2 gramme) of Iodoform.

**UNGUENTUM IODOFORMI.** IODOFORM OINTMENT. (ALTERED.)

Iodoform, in fine powder, 1; Paraffin Ointment, yellow, 9. Mix.  
=(1 in 10).

Now made with Yellow Paraffin Ointment in place of Benzoated Lard.

**Foreign Pharmacopœias.**—Official in U.S., 1 in 10; Mex., Pomada de Yodoformo; Iodoform 1, Ether 1, Vaseline 9; not in the others.

## Not Official.

**IODOFORM ANTISEPTIC DRESSINGS.**—Gauze 5, 10, and 20 p.c., Wool and Lint 3, 5, and 10 p.c.

**BOUGIES OF IODOFORM AND EUCALYPTUS FOR GONORRHOEA** (*Cheyne*).—Iodoform, 5 grains; Oil of Eucalyptus, 10 minims; Oil of Theobroma, 35 grains in each bougie, which should be 4 inches long and the diameter of No. 10 catheter.

*Treatment.*—The patient to pass water, then lie on his back, introduce the bougie (first dipped in Eucalyptus Oil or Carbolic Oil 1 in 20), close the orifice with a pad of Boracic Lint covered with Gutta-percha tissue, secure in position with strapping. The patient should refrain from passing water for four or five hours. If the case be severe the introduction of the bougie is repeated after passing water. The next day use an injection of Zinc Sulphocarbolate, 2 grains to 1 fl. oz., for two or three days; and on the third or fourth day, when the symptoms have entirely subsided, use an injection of Zinc Sulphate, 2 grains to 1 fl. oz. The treatment can be commenced as early as the first day or as late as the seventh day of the disease. The patient must abstain from Alcohol.—*B.M.J.* '80, ii. 125; *L.* '82, ii. 176, 213.

**EMULSIO IODOFORMI** (*L.H.*).—Iodoform, in minute crystals, 10 parts, Glycerin 70 parts, Water 20 parts. Rub the Iodoform to a smooth paste with the Glycerin, then add the Water. For local use only.

**INJECTIO IODOFORMI.**—Iodoform 1, Mucilage of Tragacanth 2, Water 7.—*University College Hospital.*

**INSUFFLATIO IODOFORMI (AURAL AND NASAL)** (*T.H.*).—Iodoform in fine powder, 1; Bismuth Subnitrate, 1; mix. Antiseptic.

**NEBULA IODOFORMI** (*T.H.*).—Iodoform, 40 grains; Ether (sp. gr. .735), 1 fl. oz.; dissolve. A strong antiseptic and detergent.

**PULVIS IODOFORMI COMPOSITUS.**—Iodoform in fine powder 1, Boric Acid 1, Starch 2.—*Victoria Hospital for Children.*

**UNGUENTUM IODOFORMI CUM ATROPINA** (*L.O.H.*).—Precipitated Iodoform, 60 grains; Atropine, 2 grains; Soft Paraffin, 1 oz.: heat the Atropine and Paraffin till dissolved; stir, and while cooling add the Iodoform.

**IODOFORMINE.**—A combination of Iodoform with Hexamethylenetetramine containing about 75 p.c. of the former. A white, pale or yellowish powder, insoluble in Water, Absolute Alcohol, and Ether; soluble in Acetone. Boiling Water, acids, and alkalis decompose it.—*J.S.C.I.* '95, 820; '96, 469, '97, 757; *C.D.* '95, ii. 438; *P.J.* '95, ii. 455, '97, ii. 82; *L.* '96, i. 856.

**EUROPHEN** (DI-ISOBUTYL-ORTHO-CRESOL IODIDE).—Introduced as a substitute for



Iodoform. Insoluble in Water or Glycerin; freely soluble in Absolute Alcohol, Chloroform or Ether. Applied as a dusting Powder, or 10 p.c. Ointment.

**Iodo-Salicylic Acid** and **Di-Iodo-Salicylic Acid** are Iodine compounds of Salicylic Acid in which one or two atoms of Hydrogen respectively are replaced by Iodine.—*B.M.J.* '97, ii. 734.

**Di-iodoform** (Ethylene Periodide).—Yellow prismatic needles. Insoluble in Water, soluble in Chloroform. Introduced as a substitute for Iodoform.—*L.* '93, ii. 1355; *Pr.*, lii. 126; *P.J.* (3) xxiv. 622.

**LORETIN** (Meta-iod-ortho-oxy-chinolin-ana-sulphonic Acid).—Introduced as a substitute for Iodoform. A pale yellowish powder, odourless, and non-poisonous. Used as a dusting powder, also in the form of Ointment.—*B.M.J.E.* '93, ii. 91; *M.A.* '95, 34; *L.* '94, ii. 31; '95, ii. 183; *F.B.T.* '95, 458; *M.P.* '94, ii. 25.

#### Not Official.

#### IODOL.

TETRAIOD PYRROL.

$C_4I_4NH$ , eq. 566·11.

Prepared by precipitating, with Potassium Iodo-iodide, a moderately pure Pyrrol obtained from 'animal oil.' It forms a light brown microcrystalline powder without taste, having a faint odour, and containing 90 p.c. of Iodine, and giving off Iodine at 212° F. (100° C.).—*P.J.* (3) xvi. 368.

**Solubility.**—Nearly insoluble in Water; 1 in 18 of Alcohol (90 p.c.), 1 in 150 of Chloroform, 1 in 1½ of Ether, 1 in 155 of Glycerin. It is stated to be soluble 1 in 3 of Absolute Alcohol, but the sample we examined gave 1 in 6½.

**Medicinal Properties.**—Antiseptic; used for the same purposes as Iodoform, but it is free from the objectionable odour of the latter, and is stated not to be so poisonous.

In ophthalmic surgery.—*B.M.J.* '86, i. 1229; *L.M.R.* '86, 257; '87, 125.

In ear diseases.—*L.* '86, ii. 745; *T.G.* '88, 192. In eczema of the ear.—*M.A.* '94, 232. In anal fissure.—*M.A.* '94, 80.

In diphtheria.—*B.M.J.* '87, i. 789.

In naso-pharyngeal diseases.—*B.M.J.* '87, ii. 1439.

A dusting powder for undue sweating of feet.—*M.A.* '94, 80.

**Foreign Pharmacopœias.**—Official in Ital., Mex., Russ. and Swiss; not in the others.

#### IODUM.

IODINE.

I, eq. 125·90.

A solid non-metallic element obtained from the ashes of sea-weeds and from native Iodides and Iodates.

**Solubility.**—1 in 7000 of Water; 1 in 12 of Alcohol (90 p.c.); 1 in 4 of Ether; 1 in 30 of Chloroform; 1 in 6 of Carbon Bisulphide; 1 in 65 of Glycerin; soluble in a solution of Potassium Iodide.

**Medicinal Properties.**—Antiseptic, alterative, deobstruent, deodoriser, disinfectant; locally it is irritant or vesicant according to the strength employed. Internally, largely used in form of Iodide,

seldom as Iodine, in chronic rheumatism and in chronic inflammation of various kinds; to promote absorption in hepatic and splenic enlargements, and in dropsies (pleuritic effusion, hydrocele, &c.). In the form of Potassium Iodide (10 to 30 grains three times a day), it is specific in the later stages of syphilis; and in 30 grain doses three times a day it is very useful in aneurism, its most striking effect being the relief of the aneurismal pain; valuable in actinomycosis. Most efficacious in glandular enlargements, as in bronchocele; in all scrofulous conditions, such as enlarged glands of the neck and other regions, in chronically enlarged joints or bones, in many chronic diseases of the eye, nose, and ear, and as an alterative in obstinate mucous discharges; caution, however, is required, as it may, when given in very large doses, occasionally cause wasting of healthy glands, such as the mammæ and testes. Externally the **solution**, **ointment**, and **tincture** are applied in chronic and parasitic skin diseases, in phthisis, pleurisy, pericarditis and bronchitis as a counter-irritant, and for chilblains; the **tincture** is injected into the scrotal sac to cure hydrocele; Morton's fluid is injected into the sac of spina bifida. A few drops of the **tincture** in half a pint of hot water may, along with Creosote or Volatile Oils, be **inhaled** in some forms of chronic bronchitis and phthisis, and in the throat affection of scarlatina and measles. It is employed as a **gargle**, 1 or 2 of the tincture in 32 of water, for ulceration of the throat. The **Iodide of Starch Paste** is the best form for skin diseases, as it is much less irritating than the other external preparations of Iodine. One or two drops of the tincture in a tablespoonful of water every thirty minutes are often successful in checking vomiting. See also under 'Potassii Iodidum.'

**Dose.**—Not given in B.P.;  $\frac{1}{16}$  to  $\frac{1}{4}$  grain.

**Prescribing Notes.**—Very rarely given internally in the solid form, except when loosely combined as in the Alkaloidal Periodides. See p. 161; occasionally administered as Tincture which should be well diluted.

**Incompatibles.**—Alkalis, Metallic salts, Vegetable Alkaloids.

**Official Preparations.**—Liquor Iodi Fortis, Tinctura Iodi and Unguentum sodi. Used in the preparation of Syrupus Ferri Iodidi. Arsenic, Mercury, Potassium, Sodium, and Sulphur Iodides are official.

**Not Official.**—Causticum Iodi, Inhalatio Iodi cum Conio, Iodo-Glycerin Solution, Pigmentura Iodi, Pigmentum Mandl, Pigmentum Picis cum Iodo, Tinctura Iodi Decolorata, Vapor Iodi and Iodipin.

**Antidotes.**—Emetics aided by demulcent drinks, Starch, Flour, etc., diffused in water; Hypodermic Injection of Morphine to relieve pain.

**Foreign Pharmacopœias.**—Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ. Span., Swed., Swiss and U.S.

**Description.**—In rhombic prisms or octahedrons of the trimetric system, of a peculiar odour, dark colour and metallic lustre, which, even when gently heated, yield a violet-coloured vapour.

It volatilises considerably at ordinary temperatures, and melts at 107° C.

It stains the skin a yellowish-brown, which can be removed by Caustic Alkali, or Sodium Thiosulphate.

In all the preparations containing Iodine, Potassium Iodide is a constant in-

redient, presumably with the intention of assisting the solution of the Iodine. In the case of aqueous solutions this is necessary, and an excess of Iodide is advantageous. In spirituous solutions, however, where the Iodide is scarcely more soluble than the Iodine, a much smaller quantity (if any) is required.

**Tests.**—The aqueous solution strikes a deep-blue colour with Mucilage of Starch. It sublimes without residue, and the portion that first comes over does not include any slender colourless prisms emitting a pungent odour (absence of Iodine Cyanide). A solution of Iodine in Chloroform should be perfectly clear (absence of moisture). Each gramme, dissolved in 50 c.c. of Water containing 2 grammes of Potassium Iodide, should require for decoloration at least 78.4 c.c. of the Volumetric Solution of Sodium Thiosulphate.

Commercial resublimed Iodine, if in large dry scales, may be reckoned at 100 p.c.

#### Preparations.

**LIQUOR IODI FORTIS.** STRONG SOLUTION OF IODINE. LINIMENT OF IODINE, *B.P.* '85. (ALTERED.)

Iodine,  $1\frac{1}{2}$ ; Potassium Iodide,  $\frac{3}{4}$ ; Distilled Water,  $1\frac{1}{2}$ ; Alcohol (90 p.c.), 9. Dissolve the Potassium Iodide and the Iodine in the Distilled Water in a bottle; add the Alcohol and shake.

=(About 1 of Iodine in  $8\frac{1}{2}$ ).

Formerly called Linimentum Iodi. Alcohol (90 p.c.) and Distilled Water replace the Rectified Spirit and Glycerin. The Potassium Iodide is increased.

**Foreign Pharmacopœias.**—A Liquor Iodi is official in Fr., Soluté d'Iode Ioduré, Iodine 1, Potassium Iodide 1, Alcohol 10, Water 18; Norw. and Swed., Solutio Superiodeti Kalici, Iodine 1, Potassium Iodide 2, Distilled Water 97; Port., Solutio Iodo-iodetado, Tincture of Iodine 6, Potassium Iodide 1, Water 13; U.S., Liquor Iodi Co., Iodine 1, Potassium Iodide 2, Distilled Water 17; all by weight; not in the others.

**TINCTURA IODI.** TINCTURE OF IODINE. (ALTERED.)

Iodine,  $\frac{1}{2}$ ; Potassium Iodide,  $\frac{1}{2}$ ; Distilled Water,  $\frac{1}{2}$ ; Alcohol (90 p.c.), a sufficient quantity. Place the Iodine and Potassium Iodide in a bottle with the Distilled Water; when solution has been effected, add a sufficient quantity of the Alcohol to produce 20 of the Tincture.

=(1 of Iodine in 40).

The Iodine and Iodide are dissolved in a small quantity of water, as suggested in the previous edition of *Companion*.

**Dose.**—2 to 5 minims.

**Foreign Pharmacopœias.**—Official in the following without the Iodide of Potassium:—Austr., 1 and 15; Belg. and U.S., 1 in 14.3; Fr., Ital., Jap. and Mex., 1 and 12; Dan., Norw., and Swed., Sol. Iodi Spirituosa, 1 in 20; Dutch, 1 in  $12\frac{1}{2}$ ; Ger., Hung., and Russ., 1 and 10; Port. and Swiss., 1 and 9; Span., Solucion Alcoholic de Iodo, 1 and 15. All by weight except U.S.

**Test.**—If 10 c.c. of the Tincture be diluted with 20 c.c. of Water, it should require, for complete decoloration, 19.6 c.c. of the Volumetric Solution of Sodium Thiosulphate. =(1 of Iodine in 40).

Determination of Alcohol in Liquor Iodi Fortis and Tinctura Iodi.—*P.J.* '98, ii. 330.

**UNGUENTUM IODI.** IODINE OINTMENT. (ALTERED.)

Iodine, 20 grains; Potassium Iodide, 20 grains; Glycerin, 60 grains, Lard, 400 grains. Triturate the Iodine, Potassium Iodide, and Glycerin, in a glass or porcelain mortar; add the Lard gradually; mix.

= (1 of Iodine in 25).

Now 1 in 25 instead of 1 in 31.

**Foreign Pharmacopœias.**—Fr., Pomade d'Iodure de Potassium Ioduré, Iodine 1, Potassium Iodide 5, Benzoated Lard 40, Water 5; Hung., Tincture of Iodine 1, Simple Ointment 9; Mex., Pomada de Yodo, Iodine 1, Lard 30; Port., Pomada de Iodeto de Potassio Iodada, Iodine 1, Potassium Iodide 4, Water 5, Lard 40; Span., Pomada de Ioduro Potasico Iodado, Iodine 2, Potassium Iodide 6, Water 4, Lard 45; U.S., Iodine 4, Potassium Iodide 1, Water 2, Benzoated Lard 93; mix. Not in the others.

**Not Official.**

**CAUSTICUM IODI** (*B.S.H.*).—Iodine, 180 grains; Potassium Iodide, 60 grains; Alcohol (90 p.c.), 1 fl. oz.: dissolve.

Used in cases of lupus and of indolent (*i.e.* non-phagedænic) tertiary syphilitic ulcers.

**INHALATIO IODI C. CONIO.**— $\frac{1}{2}$  to 1 fl. drm. of Succus Conii being added to Vapor Iodi.

**iodo-glycerin solution** (*Morton's Fluid*).—Iodine, 10 grains; Potassium Iodide, 30 grains; Glycerin, 1 fl. oz.: dissolve.

For spina bifida, inject 30 minims, without allowing the fluid contents of the tumour to escape.—*B.M.J.* '85, i. 1098; '86, i. 874; '87, ii. 1275.

**PIGMENTUM IODI** (*B.S.H.*).—Iodine, 2; Potassium Iodide, 1; Glycerin, 4; dissolve. Used to destroy vegetable parasites.

**PIGMENTUM MANDL** (*T.H.*).—Iodine, 6 grains; Potassium Iodide, 20 grains; Oil of Peppermint, 5 minims; Glycerin, to 1 fl. oz. Dissolve and mix. Use, in granular pharyngitis.

**PIGMENTUM PICIS C. IODO** (*B.S.H.*), (*Coster's Paste*).—Iodine, 120 grains; Rectified Oil of Tar, 1 fl. oz.: dissolve cautiously, applying a gentle heat as required. Specially recommended in cases of ringworm.

**LIQUOR AMMONIÆ IODIDI** (*Sir J. Y. Simpson*).—Liq. Ammon. Fortis, 2 fl. oz.; Iodine, 10 grains; Potassium Iodide, 20 grains; Alcohol (90 p.c.), 1 fl. oz.: dissolve.

**TINCTURA IODI DECOLORATA** (*B.P.C.*).—Iodine, 250 grains; Rectified Spirit, 5½ fl. oz.: dissolve with a gentle heat: when cold add Stronger Solution of Ammonia, 10 fl. drm.; keep the mixture in a warm place until decolorised,\* after which dilute with Rectified Spirit to make 20 fl. oz.

**VAPOR IODI** (Inhalation of Iodine).—Tincture of Iodine, 1 fl. drm.; Water, 1 fl. oz.; mix in a suitable apparatus, and having applied a gentle heat, let the vapour that arises be inhaled.

**PASTA AMYLI IODIDI.**—Starch, 1 oz.; Glycerine, 2 fl. oz.; Water, 6 fl. oz.: boil together, and when nearly cold add Solution of Iodine, B.P. '85, 1 fl. oz.

**IODIPIN**, an addition—Compound of Iodine with the fatty acid from Sesame Oil.

\* B.P.C. states that if not further diluted it may be prescribed as **Tinctura Iodi Decolorata Fortior**.

## IPECACUANHÆ RADIX.

## IPECACUANHA ROOT.

The dried root of *Psychotria Ipecacuanha*.

The active principle resides in the bark, the inner or woody part contains but little.

From the experiments by Paul and Cownley (*P.J.* (3) xxiv. 61), it would appear (1) that the percentage of *total alkaloid* in Brazilian Ipecacuanha root does not vary much from 2 p.c.; (2) that the stems of the plant, with which the imported root has recently been found mixed, contain about one-half the total alkaloid of the root; (3) the root contains at least three alkaloids, Emetine (amorphous), Cephaeline (crystalline) and a small quantity of another crystalline alkaloid. Rio Ipecacuanha root contains the three alkaloids in the following proportions as compared with Carthagena Ipecacuanha:—

Brazilian (root)—Emetine 1·45 p.c., Cephaeline ·52 p.c., the third Alkaloid ·04 p.c.  
Total 2·01 p.c.

Brazilian (stem)—Emetine 1·18 p.c., Cephaeline ·59 p.c., the third Alkaloid ·03 p.c.  
Total 1·80 p.c.

Columbian—Emetine ·89 p.c., Cephaeline 1·25 p.c., the third Alkaloid ·06 p.c.  
Total 2·20 p.c.—Paul and Cownley, *P.J.* '96, i. 321.

It is also stated by Paul, *P.J.* (3) xxiv. 212, that from so-called deëmetinised Ipecacuanha he had obtained nearly ·5 p.c. of the ordinary alkaloids of Ipecacuanha.

The Histology of Ipecacuanha.—*P.J.* (3) xxv. 685.

The quality of commercial Powder of Ipecacuanha (Greenish).—*P.J.* '95, ii. 137.

Processes for the assay of Ipecacuanha may be found.—*P.J.* (3) xvi., 627; (3) xix., 721; (3) xxiv., 687; (3) xxv., 1093.

**Medicinal Properties.**—Expectorant, diaphoretic, gastro-intestinal stimulant, cholagogue. Emetic, slow in action (20 to 30 minutes), and depressant in large doses. Used in whooping cough and croup to expel exudation or membrane as well as for its depressing effects on the circulation. Used in acute and chronic bronchitis when the phlegm is thick and scanty, and in winter-cough and phthisis; in gouty dyspepsia and biliousness. Ipecacuanha has long been relied upon in the East for the cure of acute tropical dysentery. When the evacuations are frequent and accompanied with mucus and blood, 20 to 60 grains are given; and if the stomach rejects it, a little Opium is given with it, or a Mustard poultice applied to the epigastric region. It relieves some forms of vomiting, such as that of pregnancy or alcoholism, when given in small doses, 1 or 2 minims of the **Vinum** every half-hour. The diaphoretic effect is best obtained when given in the form of the Compound Powder. In small doses it is commonly added to aperient pills for chronic constipation. A **spray** of the Wine of Ipecacuanha has been strongly recommended by Ringer and Murrell for chronic bronchitis and asthma.

*Is a powerful hepatic stimulant, it increases slightly the secretion of intestinal mucus, but has no other apparent stimulant effect on the intestines.—Dr. Rutherford.*

Applied to the bites and stings of insects.

**Dose.**—As an expectorant,  $\frac{1}{4}$  to 2 grains; as an emetic, 15 to 30 grains.

**Prescribing Notes.**—Prescribed in small doses as an auxiliary in alterative pills. The compound powder is frequently given in the form of a **powder, pill,**

**cachet**, or Compressed Tablet. A good **pill** can be made by using Dispensing Syrup *q.s.* Children tolerate large doses well.

**Incompatibles.**—Lead and Mercury salts, vegetable acids, astringent infusions.

**Official Preparations.**—Of the **Root**, Extractum Ipecacuanhæ Liquidum, Pulvis Ipecacuanhæ Compositus, Trochiscus Ipecacuanhæ, Trochiscus Morphine et Ipecacuanhæ; of the **Liquid Extract**, Acetum Ipecacuanhæ and Vinum Ipecacuanhæ; of the **Compound Powder**, Pilula Ipecacuanhæ cum Scilla.

**Not Official.**—Syrupus Ipecacuanhæ, Syrupus Ipecacuanhæ Aceticus, Tinctura Ipecacuanhæ, Emetine, Emetine Hydrochloride, Emetine Hydrobromide, Cephaeline, Cephaeline Hydrochloride.

**Foreign Pharmacopœias.**—Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**Description.**—Ipecacuanha occurs in somewhat tortuous pieces not often exceeding six inches (fifteen centimetres) in length, and one quarter of an inch (six millimetres) in thickness. It varies in colour from dark brick-red to very dark brown, and is closely annulated externally, the annulations not taking the form of narrow merging ridges (distinction from Carthagena Ipecacuanha). It breaks with a short fracture, the fractured surface exhibiting a thick greyish cortex, which usually has a resinous but sometimes a starchy appearance, and a small dense central portion. When examined under the microscope the cortex exhibits small compound starch grains and raphides; the wood contains no vessels. The odour is slight, the taste bitter.

#### Preparations.

##### ACETUM IPECACUANHÆ. VINEGAR OF IPECACUANHA. (ALTERED.)

Liquid Extract of Ipecacuanha, 1; Alcohol (90 p.c.), 2; Diluted Acetic Acid, 17. Mix; filter, and if necessary add sufficient Diluted Acetic Acid to produce 20 of the Vinegar of Ipecacuanha.

Now made with the Liquid Extract, and Alcohol (90 p.c.) is added.

**Dose.**—10 to 30 minims.

(Not in the other Pharmacopœias.)

##### EXTRACTUM IPECACUANHÆ LIQUIDUM. LIQUID EXTRACT OF IPECACUANHA. (NEW.)

A Liquid Extract containing 2 to 2½ grains of the alkaloids of Ipecacuanha Root in 110 minims (2 to 2.25 grammes in 100 c.c.).

Ipecacuanha Root, in No. 20 powder, 16 oz.; Calcium Hydroxide, 700 grains; Alcohol (90 p.c.) a sufficient quantity. Moisten the powdered Ipecacuanha Root with 6 fl.oz. of the Alcohol; pack firmly in a percolator; add more of the Alcohol, and when the liquid begins to drop, close the lower orifice of the percolator; set aside for twenty-four hours. Then percolate slowly until 13½ fl. oz. have been collected; reserve this portion. Continue percolation until nothing more is extracted; drain well. Mix the Lime with the marc; allow them to remain in contact for twenty-four hours; then continue percolation until exhaustion is complete. Recover the Alcohol from the last two percolates by distillation; dissolve the residual extract in the reserved portion of percolate.

Determine the proportion of alkaloids in the resulting strong liquid

extract by the following analytical process:—Dilute 20 c.c. with an equal bulk of Water. Remove the Alcohol by the aid of a water-bath; add to the warm solution an excess of Solution of Lead Subacetate. Filter; wash the precipitate with water and add the washings to the filtrate. Remove the excess of Lead from the filtrate by precipitation with Diluted Sulphuric Acid; filter; wash the precipitate with water and add the washings to the filtrate. Transfer the filtrate to a separator; add excess of Solution of Ammonia and agitate with 25 c.c. of Chloroform. Separate and set aside the Chloroformic Solution. Twice repeat the agitation with Chloroform and the separation. Mix the Chloroformic Solutions; evaporate; dry at a temperature below 176° F. (80° C.), and weigh the residue of total alkaloids.

From this weight calculate the amount of alkaloids in the bulk of Strong Liquid Extract, and add to the latter sufficient Alcohol (90 p.c.) to produce Liquid Extract of Ipecacuanha containing not less than 2 and not more than 2.25 grammes of alkaloid in 100 c.c., or from 2 to 2½ grains in 110 minims.

The process by Wilson for the assay of this preparation (*P.J.* '98, ii. 3) gives more accurate results than the new B.P., and can moreover be almost completed whilst the first B.P. Lead precipitate is being filtered and washed. The B.P. Lead precipitate retains alkaloid even after continued washing.

**Dose.**—As an expectorant, ½ to 2 minims; as an emetic, 15 to 20 minims.

**Foreign Pharmacopœias.**—Official in Swiss and U.S. 1 in 1; Belg. and Span. have **solid extract**.

**PILULA IPECACUANHÆ CUM SCILLA.** PILL OF IPECACUANHA WITH SQUILL. (MODIFIED.)

Compound Powder of Ipecacuanha, 3; Squill, in powder, 1; Ammoniacum, in powder, 1; Syrup of Glucose, a sufficient quantity. Mix to form a mass. = (about 1 of Opium in 20).

Now made with Syrup of Glucose in place of Treacle.

**Dose.**—4 to 8 grains.

**Foreign Pharmacopœias.**—Official in Port., similar to Brit.; not in the others.

**PULVIS IPECACUANHÆ COMPOSITUS.** COMPOUND POWDER OF IPECACUANHA. *B.P.Syn.*—DOVER'S POWDER.

Ipecacuanha Root, in powder, 1; Opium, in powder, 1; Potassium Sulphate, in powder, 8: mix. = (1 Opium, 1 Ipecac. in 10).

**Medicinal Properties.**—An admirable diaphoretic and anodyne; it is also most useful in gastric ulceration, dyspeptic vomiting, dysentery and diarrhoea; in the latter case it is sometimes combined with Calomel. In doses of 3 or 4 grains it will often relieve heartburn, probably by allaying gastric irritability.

**Dose.**—5 to 15 grains.

This Powder contains 10 p.c. of Opium.

**Foreign Pharmacopœias.**—Official in all, and is the well-known Dover's Powder; Austr., Ger., Russ. and Swiss, Pulvis Ipecacuanhæ Opiatus; Hung., Pulvis Doveri; Dan., Norw. and Swed., Pulv. Ipecac. Thebaicus; Dutch, Pulvis Opii Compositus; Fr., Poudre d'Ipecacuanha Opiacée; Port., Po de Ipecacuanha Composto; Jap., Pulvis Doweri; and U.S., Pulvis Ipecacuanhæ et Opii, with Milk

Sugar; all same strength as Brit.; Span., Polvo de Ipecacuana Opiado, 1 Opium, 1 Ipecacuana, in 11.4; Belg., 9 *Extract* Opium, 9 Ipecac., in 100; Ital., Polvere di Oppio e di Ipecacuana, Opium 1, Ipecacuana 1, Liguorice powder 1, Nitre 2, Potassium Sulphate 2; Mex. (Polvo de Dower), Opium 1, Ipecacuana 1, Nitre 4, Potassium Sulphate, 4.

The original Powder of Dr. Dover was prepared by fusing together 4 parts of Potassium Nitrate with 4 of Potassium Sulphate, and reducing the product to fine powder; to this was added 1 of Ipecacuana, 1 of Opium, and 1 of Liguorice; the French Codex has now made it same strength as British; and the Belgian still retains the powdered *Extract* of Opium instead of Opium itself, which nearly doubles the strength.

**TROCHISCUS IPECACUANHÆ.** IPECACUANHA LOZENGE. (ALTERED.)

Ipecacuana Root, in powder,  $\frac{1}{4}$  grain. Mix with the Fruit Basis to form a Lozenge.

Now made with Fruit Basis.

Dose.—Not given in B.P.; 1 to 3 lozenges.

Foreign Pharmacopœias.—Official in Belg. and Ital., about  $\frac{1}{2}$  grain; Austr., Dutch, Fr., Jap., Mex., Port., Russ., and Swiss, about  $\frac{1}{2}$  grain; Span., about  $\frac{1}{2}$  grain; U.S., about  $\frac{1}{2}$  grain; not in the others.

**TROCHISCUS IPECACUANHÆ ET MORPHINÆ.** See MORPHINÆ HYDROCHLORIDUM.

**VINUM IPECACUANHÆ.** IPECACUANHA WINE. (ALTERED.)

Liquid Extract of Ipecacuana, 1; Sherry, 19. Mix; set aside for forty-eight hours; filter. = (1 in 20).

Now made with Liquid Extract in place of Ipecacuana, Acetic Acid and Water.

Dose.—As an expectorant, 10 to 30 minims; as an emetic, 4 to 6 fl. drm.

Foreign Pharmacopœias.—Official in Belg., 6 in 100 of Malaga; Dutch, 1 and 10 of Malaga; Ger., Jap., Norw., Russ. and Swed., 1 and 10 of Sherry; Port., 1 in 20 of Port; U.S., with fluid Extract, 1 in 10 of Alcohol and White Wine; not in the others.

Not Official.

**SYRUPUS IPECACUANHÆ.**—

Austr., Ger., and Hung.—Bruised Ipecacuana, 1; Alcohol (90 p.c.), 5; Water, 40; digest forty-eight hours, and filter 40; add 60 of Sugar, and dissolve to make 100 of Syrup.

Belg.—Tincture of Ipecacuana, 35; Simple Syrup, 1000.

Dutch.—Tincture of Ipecacuana, 1; Syrup, 19.

Fr.—Alcoholic Extract of Ipecacuana, 1; Alcohol (60°), 3; Water, 34; Sugar, 63.

Ital.—Ipecacuana, 1; Dilute Alcohol, 5; Simple Syrup, 95.

Jap.—Tincture of Ipecacuana, 1; Simple Syrup, 9.

Mex.—Alcoholic Extract of Ipecacuana, 1; Alcohol (60°), 4; Syrup, 95.

Port.—Alcoholic Extract of Ipecacuana, 1; Water, 35; Sugar, 65.

Russ.—Ipecacuana, 1; Alcohol (90 p.c.), 5; Water, 40; Sugar, 60.

Span.—Alcoholic Extract of Ipecacuana, 8; Water, 100; Syrup, 1150.

Swiss.—Fluid Extract of Ipecacuana, 1; Syrup, 99.

U.S.—Fluid Extract of Ipecacuana, 7; Acetic Acid, 1; Glycerin, 10; Sugar, 70; Water to 100.

All by weight except U.S.



**SYRUPUS IPECACUANHÆ ACETICUS** (*B.P.C.*).—Vinegar of Ipecacuanha (*B.P.C.*), 20 fl. oz.; Refined Sugar, 36 oz.: dissolve with a gentle heat. Sp. gr. 1.33.

Dose.—15 to 120 minims.

**TINCTURA IPECACUANHÆ**.—Bruised Ipecacuanha, 1; Alcohol (60 p.c.), 10; digest eight days, press, and make up to 10.

According to a series of experiments, detailed *C.D.* '91, ii. 706, the best menstruum for making the tincture is Rectified Spirit containing 60 minims of Liquor Ammoniac per 20 fluid ounces. Proof Spirit extracts the alkaloid almost as well as Rectified, but the result does not remain bright.

**Foreign Pharmacopœias**.—Official in Austr., Dutch, Russ., Swed. and Swiss, 1 in 10; Jap., 1 and 10; Belg., Fr., Hung., Mex., Port. and Span., 1 in 5; all by weight; not in the others.

**EMETINE**,  $C_{15}H_{22}NO_2$  or  $C_{30}H_{44}N_2O_4$ .—A colourless amorphous base present in varying amount in both Brazilian and Columbian Ipecacuanha Root, as given under Ipecacuanha. According to Paul and Cownley, Emetine melts at about  $68^\circ C.$ ; it is strongly alkaline to Litmus and neutralises acids forming crystalline salts. On exposure to light it rapidly acquires a yellow colour. It is readily soluble in Alcohol, Ether, Chloroform, and Benzene; but only sparingly soluble in hot Petroleum Spirit or in Water. Being insoluble in caustic alkalis, it is thus distinguishable from Cephaeline.

The chief salts for medicinal purposes are the Hydrochloride and Hydrobromide.—*P.J.* (3) xxiv. 61; (3) xxv. 111, 373, 690; '97, ii. 451; '98, ii. 98.

**EMETINE HYDROCHLORIDE**.—Crystallises from water in radiating groups of silky filaments, very soluble in Water, and in Alcohol. Dried at  $100^\circ C.$  the salt has the composition  $C_{15}H_{22}NO_2HCl$ , and when crystallised from an acid solution  $C_{15}H_{22}NO_2, HCl, 3H_2O$ .

**EMETINE HYDROBROMIDE**.—Crystallises from Water in beautiful silky tufts of needles. Although readily soluble in Water, it is much less soluble than the Hydrochloride, difficultly so in Absolute Alcohol or in Chloroform. The commercial salt has the composition  $C_{15}H_{22}NO_2, HBr, 2H_2O$ , and contains 67.95 p.c. of alkaloid. It is rendered anhydrous at  $100^\circ C.$  Both salts are permanent, undergoing no alteration in colour after being kept for some months.

**Medicinal Properties**.—A powerful emetic and expectorant. In acute catarrhal and febrile conditions, as well as an expectorant, and for all the uses of Ipecacuanha where vomiting is not desired, Emetine in small doses seems likely to prove of considerable value; also as an emetic in larger doses of from  $\frac{1}{6}$  to  $\frac{1}{2}$  of a grain when a more depressing action is required. The powerful local constricting effect upon blood vessels may also prove useful in hyperæmic and inflammatory conditions. The emetic dose of Emetine is about double that of Cephaeline. Emetine caused a flow of watery mucus from the nasal mucous membrane when a full dose was given; this was not noticed after Cephaeline.—*L.* '95, ii. 1276; *P.J.* '95, ii. 435.

Dose.— $\frac{1}{6}$  to  $\frac{1}{2}$  grain.

**CEPHAELINE**.— $C_{14}H_{20}NO_2$  or  $C_{28}H_{40}N_2O_4$ , the alkaloid discovered by Paul and Cownley in both Brazilian and Columbian Ipecacuanha.—*P.J.* (3) xxv. 111.

Colourless, crystallisable and much less soluble in Ether than Emetine, like Emetine it is rapidly coloured by exposure to light. Melts at  $102^\circ C.$  It is readily soluble in Alcohol and in caustic alkalis. It forms crystalline salts with acids.

**CEPHAELINE HYDROCHLORIDE**.—Readily soluble in Water. In the dry state it has the formula  $C_{14}H_{20}NO_2HCl$ , but when crystallising from a slightly acid solution, it approximates to  $C_{14}H_{20}NO_2HCl, 3H_2O$  (Paul and Cownley, *P.J.* (3) xxv. 373).

**Medicinal Properties.**—Cephaeline is more powerfully emetic than Emetine, but does not produce depressing effects in doses of  $\frac{1}{12}$  to  $\frac{1}{4}$  grain, and is slow in action.—*L.* '95, ii. 1274.

Not Official.

**IRIS.**

The rhizome and roots of *Iris versicolor*.

**Medicinal Properties.**—The preparations **Iridin** and **Extractum Iridis** are purgative and diuretic. Emetic and cathartic in large doses. Used in biliousness, torpid liver and duodenal dyspepsia.

**Preparations.**

**IRIDIN.**—A dark brown powder, obtained from Iris.

**Dose.**—1 to 5 grains.

*Is a powerful hepatic stimulant; it also stimulates the intestines.*—*Dr. Rutherford.*

**EXTRACTUM IRIDIS (U.S.)**.—Prepared by exhausting Iris with Alcohol (94 p.c.), distilling the Alcohol and evaporating to a pilular consistence.

**EXTRACTUM IRIDIS FLUIDUM (U.S.)**.—Strength 1 in 1, prepared by percolation with Alcohol (90 p.c.).

**JABORANDI FOLIA.**

JABORANDI LEAVES.

The dried leaflets of *Pilocarpus Jaborandi*.

According to Paul and Cownley (*P.J.* '96, ii. 1) it is certain that the drug met with in commerce under the name of Jaborandi is frequently in part the product of various species of *Pilocarpus*. As to the nature of the basic constituents of these drugs very little is known, and the discrepancies in the results of the pharmacological action of *Pilocarpine* are very suggestive of doubt whether the alkaloid referred to is always the same substance. The analysis of the several varieties gave the following result:—

	Total alkaloid.	Crystallisable Nitrate.	Recrystallised Nitrate.
P. Jaborandi,	.72 p.c. . .	.67 p.c., m.p. 161° C. . .	{ .37 p.c., m.p. 162.7 C. .30 " " " 158.3 "
P. spicatus,	.16 " . . . . .		{ .03 " " " 151.5 "
P. trachylophus,	.40 " . . . . .	.02 p.c.	{ .04 " " " 130.5 "
P. microphyllus,	.84 " . . . . .	.45 " m.p. 160° C. . .	{ .23 p.c., m.p. 162.7 C. .22 " " " 147.7 "

A sample of reputed Jaborandi leaves was found on examination to contain, leaves of *P. Jaborandi* 12 p.c., *P. trachylophus* 38 p.c., stalks 50 p.c.

Jaborandi leaves of commerce (Holmes).—*P.J.* '95, ii. 520, 539.

A spurious Maranham Jaborandi.—*P.J.* '96, ii. 2.

*Pilocarpus spicatus* is the source of Aracati Jaborandi.—*P.J.* '97, ii. 459.

Microscopical distinction between the different varieties of *Pilocarpus*.—*P.J.* '97, ii. 5.

**Medicinal Properties.**—Powerful and prompt diaphoretic, sialagogue, and galactagogue. Useful in the dropsy, uræmia and thirst of Bright's disease. It is antagonistic in its action to Belladonna. See also *Pilocarpinæ Nitras*.

*Is a very feeble hepatic stimulant.*—*Dr. Rutherford.*