

It may be used in doses of 1 to 5 grains = 0.065 to 0.32 gramme.  
A 1 in 1 Fluid Extract (Alcohol 48.9 p.c.) is official in the U.S., average dose 15 minims = 0.9 c.c.

Not Official.

### DAMIANA.

The Leaves of one or more species of *Turnera*, from Mexico and California.

Contains a bitter substance, resins, and a volatile oil.

**Medicinal Properties.**—Tonic, diuretic, and aphrodisiac.

**Prescribing Notes.**—Frequently given in the form of pill; the Hard Extract makes a good pill with a small quantity of Alcohol (90 p.c.); the Soft Extract is best hardened with the powdered Leaves. The Liquid Extract is given in capsules.

**Foreign Pharmacopœias.**—Official in Mex.

**Descriptive Notes.**—Damiana occurs in commerce in two or three different varieties. The kind which is considered the best is known as *Helmiclis Damiana*, and is derived from *Turnera aphrodisiaca*, L. Ward (nat. ord. *Turneraceæ*) and is a native of California and Mexico. The leaves, of a light green colour, are wedge-shaped, usually less than an inch in length (10 to 25 mm.) and about  $\frac{1}{4}$  inch (5 to 10 mm.) in diameter in the broadest part, with about 3 to 6 coarsely crenate teeth on either side besides the terminal one. The taste recalls that of figs, but is aromatic and slightly bitter. The plant is considered by some botanists to be a variety of *T. diffusa*, Willd. It has reddish stems and thinner, smoother and less hairy, greener leaves, not greyish-green as in the type. The leaves of another species, possibly *T. microphylla*, Desv., are sometimes substituted for it. They are smaller, more hairy, with hairy stems which are not reddish. The leaves of *Aplopappus discoideus*, DC., nat. ord. *Compositæ*, are occasionally offered as Damiana. They have fewer, more distant, seriate teeth, usually three on either side, and composite flowers with hairy pappus, usually mixed with the leaves.

**EXTRACTUM DAMIANÆ LIQUIDUM.**—Damiana leaves exhausted with Alcohol (60 p.c.); 1 of fluid represents 1 of the drug.

This has been incorporated in the *B.P.C.*

**Dose.**—30 to 60 minims = 1.8 to 3.6 c.c.

**EXTRACTUM DAMIANÆ.**—The above evaporated to a soft extract.

**Dose.**—5 to 10 grains = 0.32 to 0.65 gramme.

This has been incorporated in the *B.P.C.*

**MISTURA DAMIANÆ COMPOSITA.**—Sodium Hypophosphite, 5 grains; Calcium Hypophosphite, 5 grains; Liquid Extract of Damiana,  $\frac{1}{2}$  fl. drm.; Liquid Extract of Nux Vomica, 2 minims; Chloroform Water, to 2 drm.—*Martindale*.

This has been incorporated in the *B.P.C.*

**PILULA DAMIANÆ COMPOSITA.**—Extract of Damiana, 2 grains; Phosphorus,  $\frac{1}{10}$  grain; Extract of Nux Vomica,  $\frac{1}{2}$  grain.—*Martindale*.

Extract of Damiana, 2 grains; Extract of Nux Vomica,  $\frac{1}{10}$  grain; Phosphorated Suet (10 p.c.),  $\frac{1}{10}$  grain; mix quickly these three with about  $\frac{1}{2}$  minim of Chloroform and add  $\frac{1}{10}$  grain of Compound Tragacanth Powder and Mucilage of Acacia *q.s.*—*B.P.C.*

### DIGITALIS FOLIA.

DIGITALIS LEAVES.

FR., DIGITALE; GER., FINGERHUTBLÄTTER; ITAL., DIGITALE; SPAN., HOJA DE DIGITAL.

The dried leaves of *Digitalis purpurea*, L. Collected from plants commencing to flower. The *U.S.P.* specifies that the leaves should be collected from plants of the second year's growth.

**Medicinal Properties.**—Cardiac and circulatory stimulant and tonic, increases the strength and efficiency of the cardiac contractions, and reduces the pulse rate without diminishing tension. Specially useful in mitral and tricuspid lesions with loss of compensation; in cardiac insufficiency from whatever cause, with irregular and rapid action and low arterial tension; not indicated in purely aortic cases. Of great value as a cardiac stimulant in acute pneumonia; useful in pulmonary hæmorrhage due to mitral disease. Diuretic, useful in cardiac dropsy; also in renal dropsy when acute or when due to failure of a hypertrophied heart.

It is cumulative in action, and requires watchfulness. Its continued use deranges the alimentary system; therefore, after it has been taken for eight or ten days it should be left off for three or four days and then recommenced. According to Lauder Brunton, *Digitalis* is distinctly dangerous in advanced fatty degeneration of the heart; he also thinks it harmful in advanced Bright's disease. For a comparison with *Strophanthus* see under *Strophanthi Semina*.

According to Kiliani, the seeds of *Digitalis purpurea* contain Digitalinum verum, and Digitonin; the leaves contain Digitoxin, but neither of the other two. Preparation of Digitalin also described.—*J.C.S. Abs.* '96, i. 58, 59, 180; '97, i. 95; *P.J.* '95, ii. 29, 120; '96, ii. 289.

Treatment of pneumonia by *Digitalis*.—*B.M.J.E.* '95, ii. 32; '96, ii. 76; '97, i. 15.

Digitoxin in doses of  $\frac{1}{2}$  milligramme =  $\frac{1}{200}$  grain.—*B.M.J.E.* '97, i. 31.

Best administered as tincture or dried leaf in pill form, one advantage being combination of active principles whereby overaction is obviated.—*L.* '02, i. 673.

Untoward effects of 20 to 24 minims of the tincture taken daily for five days in a weakly overgrown boy of 10 years.—*B.M.J.E.* '02, i. 1068.

The administration of *Digitalis* particularly deprecated in unduly high blood pressure.—*B.M.J.* '99, i. 85.

In the treatment of the rapid heart of influenza, where there is cardiac dilatation that lasts some weeks. Intermittent administration best. 10 to 20 minims of Tincture,  $\frac{1}{2}$  drm. of the Infusion or 1 grain Powdered Leaves, thrice daily for three days with intervals of three or more days during which the drug is withheld, or 2 to 4 granules of Nativelle's Digitalin containing  $\frac{1}{15}$  milligramme once in twenty-four hours for two days with intervals of at least three days.—*L.* '99, ii. 1079.

Some remarks upon *Digitalis* treatment in chronic disorders of the circulation, and especially upon the continuous use of *Digitalis*.—*Pr.* lxiv. 385.

An experimental investigation into the treatment of *Digitalis* poisoning. Nitroglycerin, besides possessing a greater antagonistic action to *Digitalis* than any other known drug, is also relatively non-toxic, and for the reduction of internal tension Nitroglycerin or an ally is the best remedy, but with a low blood pressure these substances are useless.—*B.M.J.* '99, ii. 1265.

Influence on the heart muscle when administered for a long time.—*T.G.* '97, 800.

Although this is the most powerful remedy in mitral disease which we possess, in cases of pure aortic regurgitation (*B.M.J.* '06, i. 1462), it is not only a dangerous drug but is actually a poison. It acts as a diuretic in cardiac dropsy (*B.M.J.* '06, i. 10). The diuresis produced by the ordinary doses of the pharmacopœial preparations of the drug does not make its appearance before the third or fourth day of administration. To be useful in cardiac dropsy it must be given in full doses.

The pharmacological action of *Digitalis*, *Strophanthus*, and *Squill* is fully considered.—*B.M.J. Supplement*, '06, ii. 13; *P.J.* '06, ii. 28.

**Dose.**—In powder,  $\frac{1}{2}$  to 2 grains = 0.032 to 0.13 gramme.

*Ph. Ger.* maximum single dose, 0.2 gramme; maximum daily dose, 1.0 gramme.

**Prescribing Notes.**—*The fresh Infusion is preferred by some to the Tincture. The powdered leaf is ordered in Pills with other ingredients. Ferrous Sulphate is not uncommonly prescribed with the fluid preparation of Digitalis, with a resulting blackening from the tannin of Digitalis; where this is an objection it can be prevented by the addition of Citric Acid: 6 grains of Citric Acid are sufficient for 12 grains of Ferrous Sulphate; or the powdered drugs can be given in pills.*

**Incompatibles.**—Ferrous Sulphate, Tincture of Ferric Chloride, preparations of Cinchona, and Lead Acetate.

**Official Preparations.**—Infusum Digitalis and Tinctura Digitalis.

**Not Official.**—Fluidextractum Digitalis, Infusum Digitalis Concentratum, Pilula Digitalis Composita, Pilula Digitalis et Hydrargyri Composita, Pilula Digitalis et Opii Composita, Succus Digitalis, Syrupus Digitalis, Vinum Digitalis Compositum, and Digitalin (various).

**Antidotes.**—In case of an overdose, a recumbent posture is of paramount importance; and after the stomach has been emptied, 20 grains of Tannic Acid in hot Water given frequently, or hot strong Tea or Coffee; stimulants and warmth should be employed.

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

The *Brussels Conference* agreed to use the leaf of the second year, and the powdered drug to be used entire.

**Tests.**—The ash of Digitalis varies from 7 to 10 p.c., and should not exceed the latter figure. In the present state of our knowledge of the subject a chemical method of determination is of doubtful utility, and it is generally conceded that a physiological method of standardisation leaves much to be desired.

The more or less definite principles contained in Digitalis may be arranged as follows under the names applied to them by Schmiedeberg.

(a) **Digitonin.**—A crystallisable body resembling Saponin, constituting the larger part of the glucosidal constituents. It softens at 225° C. (437.0° F.), and melts completely at 235° C. (455.0° F.). The aqueous solution is levorotatory, and is precipitated by Tannin, Ammoniacal Lead Acetate, and Barium Hydroxide Solution. Soluble in Water, insoluble in cold Alcohol, Ether, Benzol, or Chloroform. It has none of the physiological action peculiar to Digitalis, and in other respects is directly injurious.

(b) **Digitalein.**—An amorphous glucoside (possibly a mixture). Soluble in Water and in Alcohol, insoluble in Ether or Chloroform. Its action on the heart is non-cumulative, and it causes no irritation when subcutaneously injected.

(c) **Digitalin.**—A white amorphous powder or soft white grains which remains unchanged when heated to 200° C. (392.0° F.), begins to aggregate at 210° C. (410.0° F.), and melts about 217° C. (422.6° F.). It is soluble in Alcohol, almost insoluble in Water, sparingly soluble in Ether or Chloroform. It dissolves in concentrated Hydrochloric or Sulphuric Acid with golden yellow colour, the colour in the latter instance changing rapidly to a blood red. On adding to the solution whilst still yellow a drop of either Nitric Acid, Ferric Chloride, or Bromine Water, a brilliant purple coloration is produced.

Possesses in a high degree the medicinal action of Digitalis.

(d) **Digitoxin.**—Pearly plates or needles melting at 240° C. (464° F.). *Fr. Codex* (1908) gives 243° C. (469.4° F.). Easily soluble in Alcohol, slowly in Chloroform, very sparingly in Ether, quite insoluble in Water. It

does not give the colour reaction of Digitalin with strong Sulphuric Acid. It yields a yellow or greenish coloration when warmed with strong Hydrochloric Acid. The *French Codex* gives the following test: If weighed quantities of about 0.005 gramme of Ferric Sulphate be dissolved separately in 2 c.c. of Glacial Acetic Acid and in 2 c.c. of concentrated Sulphuric Acid, then if the Acetic Acid Solution of the Iron salt, previously mixed with a trace of Digitoxin, be poured gently on to the surface of the Sulphuric Acid containing the Iron salt in such a manner that the two liquids do not mix, at the point of contact of the two liquids there is developed a brown-coloured zone, the colour changing to green and then to indigo-blue and after half an hour the Acetic Acid is coloured entirely blue. This characteristic reaction for Digitoxin was given in the 17th edition of the *Companion* as follows: When dissolved in Acetic Acid to which has been added 1 p.c. of a solution containing 5 p.c. of Ferric Sulphate, and Sulphuric Acid containing the same quantity of Ferric Sulphate is poured into the tube so as to form a layer beneath it, a blue colour is gradually developed in the Acetic Acid, whilst the Sulphuric Acid remains colourless; this coloration in the Acetic Acid is not produced by any other of these compounds.

The most toxic of all the constituents, but uncertain, cumulative, and dangerous in its action.

- (e) **Digitin**.—A crystalline body, physiologically inert, difficultly soluble in Water, more readily in Alcohol, insoluble in Ether or Chloroform.

It dissolves in concentrated Sulphuric Acid with brownish-yellow colour, which becomes purple-red on exposure to air, the addition of Water turning the colour to green. It is insoluble in Hydrochloric Acid, but dissolves in Nitric Acid without coloration. It does not reduce Fehling's Solution until after boiling with dilute acid.

**Descriptive Notes.**—The *Digitalis* leaves of commerce are probably collected, not only from plants in flower, but from plants of the first year's growth and from shoots formed laterally from the second year's plant after flowering. The leaves accordingly differ in size and shape. The root leaves are broadly ovate, lanceolate, and crenate-serrate, and much larger and wider at the base than the stem leaves, which have shorter stalks and are gradually less ovate and more lanceolate and smaller from the base to the top of the leafy stem. The dimensions given in the *B.P.*, viz., 10 to 30 cm. (4 to 12 inches) long, and 12½ to 15 cm. (5 or 6 inches) broad, cover all the above forms of leaf. The leaves have a bitter taste, but no distinct odour. The features that distinguish Foxglove leaves from other similar leaves are the lower veins, which are placed at a very acute angle to the base of the mid-rib and are decurrent into the petiole, the faintly areolate (rugose, *B.P.*) upper surface, and the paler under surface, densely pubescent with short hairs, and reticulated with prominent small veins. Other leaves occasionally found mixed with those of Foxglove differ in the venation and in the character of the hairs, which in *Digitalis* are of two kinds, viz., 1 to 5 celled simple hairs (usually 3 celled, *B.P.*), with occasionally a glandular head, and short 1 to 2 celled hairs with a single or a twin gland at the apex.

The powdered leaves are distinguished by the absence of raphides and stone cells, by sinuous epidermal cells with small stomata, the 1-5-celled hairs with a more or less warty surface, and short glandular hairs.

Digitalis leaves soon lose their activity unless kept quite dry; they can be obtained in commerce with the mid-rib removed and packed dry in hermetically sealed bottles. The tincture would probably be more effective if prepared from the fresh leaves with rectified spirit and then heated to boiling point to prevent changes arising from the action of natural ferments in the leaves, since this takes place in the leaves in the presence of the 12 p.c. of moisture which they absorb after drying, if not enclosed in airtight vessels as soon as dried. The *P.G.* points out the triangular character of the petiole, and that the upper stem leaves may be sessile. The leaves should be obtained from wild plants. The *U.S.P.* directs leaves collected from the second year growth at the commencement of flowering, and that stone cells, star-shaped hairs, and Calcium Oxalate crystals should not be present. Continental Digitalis leaves are liable to be adulterated with many other leaves—see *Apotheker Zeitung*, xxi. pp. 242, 252, 267, 276, where the distinctive features of the probable adulterants are given.

#### Preparations.

##### INFUSUM DIGITALIS. INFUSION OF DIGITALIS

Digitalis Leaves, in No. 20 powder, 60 grains; boiling Distilled Water, 20 fl. oz. Infuse fifteen minutes; strain.

**Dose.**—2 to 4 fl. drm. = 7·1 to 14·2 c.c.

1 fl. oz. represents 3 grains of Leaves.

**Foreign Pharmacopœias.**—Official in Mex., Port. and Span., 1 in 200; Ital. and Swed., 1 in 100; U.S., with Cinnamon, 3 in 200. Not in the others.

**Infusum Digitalis Concentratum.**—Digitalis Leaves, in No. 20 powder, 5·5; Alcohol (90 p.c.), 20; Dilute Chloroform Water (1 in 1000), *q.s.* to make 100. Prepare by macero-expression. Dose, 15 to 30 minims.—*Farr and Wright, P.J.* '06, i. 165, and '07, i. 622; *C.D.* '06, i. 252; *Y.B.P.*, 1907, 249.

This appears in the *B.P.C.*

##### TINCTURA DIGITALIS. TINCTURE OF DIGITALIS.

2½ of Digitalis Leaves, percolated with Alcohol (60 p.c.) to yield 20. (1 in 8)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

*Ph. Ger.* maximum single dose, 1·5 grammes; maximum daily dose, 5·0 grammes, of the 1 and 10 Tincture.

Larger doses are occasionally given, but, according to some observers, the results with small doses are equally good and not nearly so dangerous.

In cases of delirium tremens, 1 fl. drm. every three hours. Two or even three fl. drm. in cases carefully watched.—*Pr.* xxvii. 373.

**Foreign Pharmacopœias.**—Official in Austr., Belg., Dan., Dutch, Fr., Russ., Swiss and U.S., 1 in 10; Ger., Ital., Jap., Norw., Span. and Swed., 1 and 10; Hung. and Port., 1 in 5. Also Port. and Span., 1 fresh Leaves, 1 Spirit; Span., with Ether, 1 dried Leaves in 5; Dan. and Port., with Spirit of Ether, 1 dried Leaves in 10; Mex., Seeds 1 in 5; also Ethereal Tincture 1 and 5. All by weight except U.S.

The *Brussels Conference* agreed to a strength of 10 p.c. prepared by percolation with Alcohol (70 p.c.). Belg., Dan., Fr. and Swiss adopt this.

**Tests.**—Tincture of Digitalis possesses a specific gravity of 0·930 to 0·935; contains from 3 to 4 p.c. w/v of total solids and about 55·0 p.c. w/v of Absolute Alcohol.

A suggestion for the preparation of a fat-free Tincture (*A.J.P.* '99, 332), by exhausting the leaves with purified Petroleum Benzin previous to the preparation of a Tincture by the official process. The resulting tincture is claimed to be less nauseating than the ordinary tincture, and to be more rapidly absorbed. Abscesses never followed its hypodermic use, whilst the official Tincture almost invariably causes pain, swelling, and abscess formation.

A fermentation test has been suggested (*C.D.* '02, i. 456) to prove the activity of Digitalis leaves. A weighed quantity of 20 grains of Amygdalin is dissolved in 1 fl. oz. of Water at 30° C. (98° F.) in a wide-mouthed bottle and set aside as a control specimen. A similar quantity of Amygdalin, together with 60 grains of powdered Digitalis leaves, is mixed in another bottle. At the end of eight hours the plain Amygdalin solution should show no change, but the specimen to which the Digitalis has been added should have developed a bitter Almond odour, and should yield a reaction for Hydrocyanic Acid when a rod moistened with Silver Nitrate solution is laid over the mouth of the bottle. The test is considered (*C.D.* '02, i. 509) ingenious, but inconclusive, as it does not prove the presence or absence of Digitoxin.

#### Not Official.

**FLUIDEXTRACTUM DIGITALIS (U.S.).**—A 1 in 1 fluid extract prepared by exhausting the Leaves with Alcohol (49 p.c.).

**Dose.**—1 to 2 minims = 0.06 to 0.12 c.c.

**Foreign Pharmacopœias.**—Official in Dan., Mex. and U.S. Not in the others.

*Extractum Digitalis (U.S.)* is the Fluid Extract evaporated (not exceeding 50° C.) to a pill consistence.

**PILULA DIGITALIS COMPOSITA.**—Digitalis Leaves, in powder, 1 grain; Squill, in powder, 1 grain; Mercury Pill, 1 grain.—*St. Thomas's.*

This has been incorporated in the *B.P.C.*, with the *syn.* Guy's Pills, and a note that Baillie's or Gilmour's Pills contain twice as much Squill.

**PILULA DIGITALIS COMPOSITA (Baillie's Pill).**—Digitalis Powder,  $\frac{1}{2}$  grain; Squill, 1 grain; Mercury Pill, 2 grains; in one pill.—*St. George's.*

**PILULA DIGITALIS ET HYDRARGYRI COMPOSITA.**—Mercurial Pill, 1 grain; Powdered Digitalis, 1 grain; Powdered Squill, 1 grain; Extract of Henbane, 2 grains.—*St. Bartholomew's.*

**PILULA DIGITALIS ET OPII COMPOSITA (Heim's Pill).**—Quinine Sulphate, 1 grain; Digitalis, in powder,  $\frac{1}{2}$  grain; Opium, in powder,  $\frac{1}{4}$  grain; Ipecacuanha, in powder,  $\frac{1}{4}$  grain; Glycerin of Tragacanth, *q.s.*—*Pharm. Form.*

Digitalis Leaves, in powder,  $\frac{1}{2}$  grain; Opium, in powder,  $\frac{1}{4}$  grain; Ipecacuanha Root, in powder,  $\frac{1}{4}$  grain; Quinine Sulphate, 1 grain; Syrup of Glucose, *q.s.*—*B.P.C.*

**SUCCUS DIGITALIS.**—The Expressed Juice, 3; Alcohol (90 p.c.), 1.

This preparation may be given for a longer period than the Tincture without causing nausea.

**Dose.**—5 to 10 minims = 0.3 to 0.6 c.c.

This has been incorporated in the *B.P.C.*

**SYRUPUS DIGITALIS.**—Tincture of Digitalis, 1; Simple Syrup, 19.—*Belg. and Fr.*

**VINUM DIGITALIS COMPOSITUM.**—Digitalis Leaves, in No. 40, powder, 5; Squill, 7.5; Juniper Fruit, 75; Alcohol, 100; White Wine, 900; Potassium Acetate, 50.—*Belg. and Fr.*

Alcoholic Extract 2, Water 360, Sugar 640.—*Span.*

**DIGITALIN.**—Under this name four distinct varieties occur in commerce, which differ so considerably in their medicinal properties that prescribers should be careful to distinguish and specify the kind intended. All four of them are soluble in Alcohol.

1. **Digitalin Amorphous (Homolle).**—A white or yellowish-white amorphous bitter powder. Soluble in Chloroform, slightly soluble in Water. Stated to consist mainly of Digitalin with some Digitoxin. Now omitted from *Fr. Codex*.

**Foreign Pharmacopœias.**—Official in Port. and Span.; formerly in Brit.

2. **Digitalin Crystallised (Nativelle).**—Fine white needles, insoluble in Water, Ether or Benzene; soluble in Alcohol (90 p.c.) and in Chloroform. It is stated to consist almost entirely of Digitoxin, and is cumulative in its action. See Digitoxin.

**Foreign Pharmacopœias.**—Official in Fr., Mex. and Span.

Granules de Digitaline Cristallisée (*Fr. Codex*) contains  $\frac{1}{10}$  milligramme in each granule. Soluté de Digitaline Cristallisée au Millième contains one milligramme to each gramme.

**Digitoxin**, official in *Swiss*, is a white, crystalline, odourless powder with a bitter taste, insoluble in Water, soluble in Alcohol (90 p.c.), and in Chloroform.

3. **Digitalin German.**—Amorphous; consists principally of Digitalein with some Digitonin and Digitalin. Readily soluble in Water, almost insoluble in Chloroform.

4. **Digitalin Verum.**—Kiliani (*P.J.* (3) xxii. 1061) states, with some show of reason, that the Digitalin of Schmiedeberg is the best form in which to prescribe Digitalis, and to distinguish it he applies the name Digitalin Verum. Its composition is definite; it is obtainable commercially in a sufficiently pure condition; it possesses all the medicinal activity in regard to the action of Digitalis upon the heart; it is non-cumulative in its action; the dose is  $\frac{1}{4}$  milligramme ( $\frac{1}{320}$  grain) every 2 or 3 hours; it is soluble about 1 in 1000 of Water, about 1 in 100 of Alcohol (50 p.c.). The aqueous solution froths upon being shaken, and is remarkably prone to become mouldy.

## MUSETANE

Not Official.

### DUBOISIA MYOPOROIDES.

A plant indigenous to N.S. Wales and Queensland; it has been classed in the order *Solanacea*.

Ringer's experiments show that the physiological action of the extract is apparently identical with that of Atropine. Tweedy has used it as an application to the eye in all cases in which Atropine is indicated.

**Foreign Pharmacopœias.**—Official in Span.

The name Duboisine represents a variable product obtained from this plant. Pseudo-hyoscyamine from *Duboisia myoporoides*, R.Br., isomeric with Atropine and Hyoscyamine, has been described by Merck.

**Foreign Pharmacopœias.**—Official in Mex.

**Duboisine Sulphate** is an amorphous hygroscopic powder, soluble in Water, consisting of an indefinite mixture of Hyoscyamine and Hyoscyne Sulphates, and the Sulphates of other bases.

Not Official.

**DUGONG OIL.**

An Oil obtained in Australia from *Halicore Dugong*, Daub., by boiling the superficial fat. A substitute for Cod-Liver Oil, recommended at one time (*P.J.* (3) iii. 3, 100) as not being disagreeable in taste, but it does not possess this character now.

Not Official.

**DULCAMARA.**

The dried young Branches of *Solanum Dulcamara* (Bittersweet), from indigenous plants which have shed their leaves.

Fresh specimens have been found (*C.D.* '02, ii. 313; *Y.B.P.* '02, 491) to contain two alkaloids (Solanine and Solanidine), a glucoside (Solanein), and a bitter principle (Dulcamarin) of a glucosidal nature yielding on hydrolysis Dulcamaretin and Glucose.

**Medicinal Properties.**—Alterative and sedative. Used in cutaneous eruptions, chiefly of a scaly nature, as psoriasis and pityriasis, a decoction being applied externally, at the same time that it is used internally.

An alkaloid **Solanine** obtained from *Solanum nigrum*, *S. Dulcamara* and *S. tuberosum* (Potato plant), has been recommended as an analgesic.—*L.M.R.* '86, 496; '88, 242; *T.G.* '87, 56; '88, 630; *L.* '87, ii. 1097.

**Foreign Pharmacopœias.**—Official in Austr., Fr. (*Douce-amère*), Mex., Port. (*Doce-amarga*), and Span. Not in the others.

**EXTRACTUM DULCAMARÆ FLUIDUM.**—1 fl. oz. equals 1 oz. Dulcamara. Prepared with diluted Alcohol.—*U.S.P.* 1890.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Foreign Pharmacopœias.**—Official in Mex.

A solid **Extractum Dulcamara** is official in Austr., Fr. and Mex.

**INFUSUM DULCAMARÆ.**—Dulcamara, 1; boiling Water, 10; infuse 1 hour.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

This has been incorporated in the *B.P.C.*

**Foreign Pharmacopœias.**—Official in Fr. (1 in 50). Not in the others.

**ELATERIUM.**

ELATERIUM.

FR., ELATERION; GER., ELATERIUM; ITAL., ELATERIO; SPAN., ELATERIO.

A sediment from the juice of the Fruit of *Ecballium Elaterium*.

It contains from 20 to 40 p.c. of Elaterin, to which principle the activity of the drug is due. It contains in addition a second crystallisable bitter principle, Prophetin, and the amorphous substances Ecballin or Elateric Acid, Hydroelaterin and Elateride, of which but little is at present known.

'Extractum Elaterii' was the official synonym in *B.P.* '85 for Elaterium.

**Medicinal Properties.**—The most powerful hydragogue cathartic, only used in special cases. Employed in cardiac or renal dropsy and in cerebral congestion. Its administration in a debilitated state of the system or in gastro-intestinal inflammation requires very great caution on account of the depression which it produces.