The concentrated extract was spotted on silica gel 'G' plates and run in the solvent system chloroform : methanol (9 : 1). Under UV light four spots were observed at Rf values 0.44 (red), 0.70, 0.91, 0.96 (all blue).

History and authority : Proved by Watkins and Thayer; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **5**, 165; Hering, C., *Guiding Symptoms*, 1879, **6**, 278; Clarke, J.H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 56; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 163.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Jaborandi in moderately *coarse powder* 100 g

Strong Alcohol in sufficient quantity.

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

(c) Trituration 1x. Drug strength 1/10

Jaborandi in moderately *coarse powder* 100 g

Saccharum Lactis 900 g

to make one thousand grammes of the Trituration.

(d) Potencies: 2x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol*.

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JANOSIA ASHOKA
(J. ashok)

Botanical name : *Saraca asoca* (Roxb.) De Wild.* **Family**: Fabaceae

Synonyms : *Saraca indica* auct. non. L.; *Jonesia asoca* Roxb.

Common name : *Hindi*: Ashok.

Description : A tree 7 to 10 m high; branches glabrous. Leaves 15 to 20 cm long; rachis glabrous, petioles very short; stipules intra-petiolar, completely united, scarious, ovate-oblong, obtuse, parallel nerved; leaflets 4 to 6 pairs, 10 to 20 cm long 1 to 3 cm broad, oblong, lanceolate, obtuse or acute, quite glabrous, base rounded or cuneate, slightly oblique; petioles stout, wrinkled, stipules deciduous. Flowers fragrant, numerous, in dense axillary corymbs, 7 to 10 cm across; peduncles stout; pedicel 8 to 12 mm long, red, glabrous; bracts ovate, sub-acute; bracteoles 2, appearing like a calyx, 4 mm long spathulate or oblong, sub-acute, ciliolate, amplexicaul; calyx yellow when young, turns orange ultimately red when mature, cylindric, solid at the base, segments 4, oblong or obovate-oblong, 10 mm long; corolla absent; stamens 7, filaments filiform, thrice as long as the calyx segments; anthers purple; ovary pubescent especially on the sutures; style curved. Fruit a pod, black, 10 to 25 cm long and 4 to 5 cm broad, linear-oblong, tapering to both ends, compressed, glabrous veined. Seed 4 to 8, ellipsoid-oblong, 4 cm long and compressed.

Distribution : India.

Part used : Bark

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* The Indian plants are taxonomically segregated as ***Saraca asoca*** by de Wilde (in *Blumea*, 15: 393. 1968), whereas *Saraca indica* is distinguished by having spreading bracteoles and occurs in Java and other Indonesian islands. The name *Jonesia asoca* Roxb. (synonym) has orthographic variations in Homoeopathic literature as *Joanesia* (*sic.*), *Janosia* (*sic.*), *Jonosia* (*sic.*), *ashoka (sic.), asoka (sic.)* (HPI, 1: 141. 1971; Ghose.S.C. (*op. cit.*) 259. 1980 (Repr. Ed.); Boericke, W. *A pocket manual of Materia medica*, 358 & 1064 (1988, Repr. ed.); Murphy, Robin, *Lotus materia medica*, 908. 2009; Vermeulen, Frans, *Concordant materia medica*, 526. 2001).

Macroscopical : Bark externally yellowish to greenish, smooth with circular lenticels and transversely ridged, sometimes cracked; internally reddish-brown with fine longitudinal strands and fibres. Fracture splintery, exposing striated surface, a thin whitish. Taste astringent.

Microscopical : Periderm consists of wide layer of phellem, cells radially flattened, phellogen narrow, phelloderm interspersed with groups of sclereids; pericycle wide, composed of scattered patches of sclereids and a few cells contain prismatic crystals of calcium oxalate; secondary phloem consists of groups of phloem fibres forming tangential bands which alternate with parenchyma and sieve tubes, occasional cells contain prismatic crystals of calcium oxalate and tannin; ray uniseriate, becoming 5 to 12 cells wide towards periphery, contains groups of calcium oxalate crystals; starch grains present throughout the tissue.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a. Under UV light (254 nm), ten spots appear at R_f 0.11 (blue), 0.16 (light blue), 0.29 (blue), 0.35 (blue), 0.40 (blue), 0.51 (blue), 0.64 (light blue), 0.72 (light blue), 0.86 (blue), 0.91 (blue).

b. Under UV light (366 nm), seven spots appear at R_f 0.11 (yellow), 0.16 (yellow), 0.29 (yellow), 0.51 (blue), 0.72 (blue), 0.86 (blue), 0.91 (red).

c. On exposure to Iodine vapors, ten spots appear at R_f 0.11 (yellow), 0.16 (dark yellow), 0.29 (yellow), 0.35 (yellow), 0.40 (yellow), 0.51 (yellow), 0.64 (light yellow), 0.72 (light yellow), 0.86 (yellow), 0.91 (yellow).

History and authority : Ghose, S.C., *Drugs of Hindoostan*, 1984, 259.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Janosia Ashoka in moderately *coarse powder*	100 g
Purified Water	125 mL
Strong Alcohol	900 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

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JUSTICIA ADHATODA
(Just. ad.)

Botanical name : *Adhatoda vasica* Nees. **Family**: Acanthaceae

Synonyms : *Adhatoda zeylanica* Medicus; *Justicia adhatoda* L.

Common names : *Hindi*: Adulasa, Vasaka; *English*: Malabar nut

Description : A dense evergreen, often gregarious shrub, 1 to 2.5 m high. Stem with yellowish bark, terete, glabrous. Leaves 5 to 20 cm long and 3 to 8 cm broad, elliptic-lanceolate, acuminate, tapering to the base, minutely puberulous, dark-green above; pale beneath. Flowers in short dense axillary peduncled spikes, 2.5 to 7.5 cm long, arranged towards ends of the branches; peduncles stout, shorter than the leaf; bracts upto 22 mm long, elliptic, sub-acute, glabrous or nearly so, 5 to 7 nerved, closely reticulate, bracteole 18 mm long, 1-nerved, margin ciliate. Calyx 8 to 12 mm long, hairy outside, glabrous or slightly pubescent, divided to within 2 mm of the base; segments imbricate, oblong-lanceolate, acute, 3-nerved, reticulately veined. Corolla white, with a few irregular rose-coloured bars in the throat, 3.2 cm long, pubescent outside; tube 12 mm long, lower half cylindrical, upper half much inflated laterally, upper lip curved, ovate-oblong, mottled; lower lip as long as the upper lobes, oblong, rounded; stamens 2, inserted near the top of the corolla tube; anthers 2 celled filaments hairy at the base, the lower anther cells spiculate (not spurred) at the base; ovary 2-celled; style filiform; stigma entire; ovary and lower portion of style hairy. Fruit a capsule, 18 mm or more in length, clavate, pubescent. Seeds orbicular.

Distribution : Throughout India.

Part used : Leaf

Macroscopical : Leaf simple, exstipulate, opposite, petiolate, 5 to 20 cm long and 3 to 8 cm broad, lanceolate, hairy, light green; mature leaf glabrous, elliptic-lanceolate to ovate-lanceolate with crenate or entire margin, tapering base and acuminate

apex; reticulate venation, 8 to 10 pairs of lateral veins. Petiole 2 to 8 cm long, glabrescent. Odour characteristic; taste bitter.

Microscopical : Leaf: lamina in transection shows single layered epidermis with thick cuticle, having two types of trichomes: (i) non-glandular, uniseriate, 3 to 5 celled, and (ii) glandular trichomes with unicellular stalk and 4 celled head, mesophyll differentiated into 2 or 3 layered palisade and 6 to 8 layered spongy parenchyma with large intercellular spaces, containing chloroplast; elongated and cigar shaped cystoliths present in mesophyll. Midrib strongly convex below, covered with both types of simple and glandular trichomes; single layered epidermis followed by 6 to 8 layered collenchyma in both sides; meristele arc-shaped, xylem towards upper epidermis and phloem towards lower epidermis and encapped with 4 to 5 layers of collenchymatous cells; ground tissue parenchymatous; rosette crystals of calcium oxalate present thoughout the leaf. Stomata diacytic, abundant on lower surface, rare on upper surface, 20 x 11 µm to 31 x 21 µm in size; palisade ratio 4 to 6, vein islet number 2 to 5.5 per sq mm., stomatal index on lower epidermis 12 to 13.

Petiole: transection horse-shoe shaped in outline; epidermis single layered of small elongated cells with thick cuticle; trichomes of both types like in lamina; epidermal layer followed by 10 to 14 layers of collenchymatous cells; 3 to 5 layers of chlorenchyma; ground tissue parenchymatous; vascular bundle arc-shaped and one subsidiary bundle present in each projection; vascular bundle encircled by 3 to 4 layers of collenchymatous cells. Rosette crystals of calcium oxalate present throughout the tissue.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a) Under UV light (254 nm), ten spots appear at R_f 0.18 (blue), 0.24 (light blue), 0.32 (brown), 0.40 (brown), 0.48 (brown), 0.54 (brown), 0.62 (brown), 0.84 (light brown), 0.89 (yellow), 0.91 (yellow).

b) Under UV light (366 nm), eight spots appear at R_f 0.18 (red), 0.24 (red), 0.32 (red), 0.40 (red), 0.62 (red), 0.84 (red), 0.89 (red), 0.91 (red).

c) On exposure to Iodine vapors, ten spots appear at R_f 0.18 (yellow), 0.24 (light blue), 0.32 (green), 0.40 (light yellow), 0.48 (green), 0.54 (green), 0.62 (yellow), 0.84 (yellow), 0.89 (greenish yellow), 0.91 (yellow).

History and authority : Ghose, S.C., *Drugs of Hindoosthan*, 1984, 193

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Justicia Adhatoda moist magma containing solids 100 g and plant moisture 270 mL	370 g
Strong Alcohol	765 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

KALIUM CAUSTICUM
(Kal. caus.)

KOH **Mol. Wt.:** 56.11

Common names : *English:* Hydrate of potassium, Potassic hydrate, Caustic potash; *French*: Potassa caustique; *German*: Aetzkali, Kalium hydrat.

Description : White, hard, opaque masses, showing a crystalline texture when broken, odourless, extremely deliquescent. On exposure to air, it absorbs *water* and *carbon dioxide*. Soluble in *water* and *alcohol*. When dissolved in *water*, much heat is liberated. Heated at 530° it melts to a clear liquid and at bright red heat is volatilized without decomposition. It gives the flame a violet colour.

Identification (1) Boiled with some organic matter containing *nitrogen* it emits *ammonia gas*.

(2) Saturated with *hydrochloric acid* and treated with *platinic chloride*, a yellow precipitate is obtained and with *tartaric acid*, it gives a colourless crystalline precipitate.

Chloride : Dilute 2.0 mL of solution S with 15 mL of *water*, add 1 mL of *nitric acid* cool and add 1 mL of *silver nitrate*. Any turbidity produced is not greater than that in the blank to which 0.02 mg of chloride has been added.

Phosphate : Render 20 mL of solution S slightly acid with 25% *sulphuric acid* then add 2 mL excess of the *sulphuric acid* (25%) and evaporate in platinum crucible to incipient *sulphuric* fumes. Cautiously add 20 mL of *water*, filter, add to the filtrate 1 mL each of *phosphate solution* A and B and heat at 60° for 10 minutes. Any blue colour produced is not darker than that of a control made with 0.02 mg of *phosphate*, 2 mL of 25% *sulphuric acid*, the same quantities of the *phosphate reagent* in the same final volume as used with the sample.

Sulphate : To 30 mL of solution S add 8 mL of *hydrochloric acid* and evaporate to dryness on steam bath. Dissolve the residue in 25 mL of *water* and re-evaporate to dryness on steam bath. Dissolve the residue in 20 mL of warm *water*, add 1 mL of 0.1N *hydrochloric acid* a control made with 0.1 mL of *sulphate*, 1 mL of 0.1N *hydrochloric acid* and 2 mL *of*

barium chloride. Any turbidity produced in 20 minutes is not greater than that in *hydrochloric acid* a control made with 0.1 mL of *sulphate*, 1 mL of 0.1N *hydrochloric acid* and 2 mL of barium chloride in the same volume as used with the sample.

Heavy metals : To 5.0 mL of solution S add 15 mL of *nitric acid*. Evaporate on the steam bath to dryness, dissolve the residue in 40 mL of water, add a drop of *phenolphthalein* solution then add 0.2N *sodium hydroxide* until a pink color is just produced. Add 2 mL of 1N acetic acid and dilute to 50 mL with purified water. To 10 mL add 0.33 mL of *silver nitrate* and dilute to 40 mL (a). Then add to A and to the remaining 40 mL, (b) 10 mL of *hydrogen sulphide*. B is not darker than A.

Sodium : Neutralize 1 mL of solution S with *hydrochloric acid*, dilute to 20 mL and test on *platinum wire* in a colorless flame. No distinct yellow color impart to the flame.

Assay : Weigh about 50g of sample and dissolve it in *carbon dioxide free water*, cool and dilute to exactly 500 mL (solution S). Dilute exactly 25 mL of solution S with 175 mL of cold, *carbon dioxide free water* in a flask. Add 5 mL of *barium chloride* and allow to stand for 5 minutes, then add 3 drops of *phenolphthalein* and titrate with 1N *hydrochloric acid* to the disappearance of pink colour. Each mL of 1N *hydrochloric acid* is equivalent to 0.05611 g *potassium hydroxide*.

History and authority : Homoeopathic Pharmacopoeia of United States of America, 1981, 335.

Preparation : (a) Mother Solution Ø Drug strength 1/10

Kalium Causticum 100 g

Purified Water in sufficient quantity

to make one thousand millilitres of the Mother Solution.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

Storage : It should be stored in well closed container.

Caution : Not to be dispensed below 3x.

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LAPPA MAJOR
(Lapp. maj.)

Botanical name : *Arctium lappa* L. **Family**: Asteraceae

Synonyms : *Lappa major* Gaertn; *L. arctium* Hill; *Arctium majus* (Gaertn.) Bernh.

Common names : *Hindi*: *Jangli kuth*; *English*: Greater burdock, Beggar's button; *French*: Bardane, Glouteron; *German*: Klettenwurzel, Radix bardanæ.

Description : A coarse, biennial weed. In the first year only rosette of leaves present. Leaves large, up to 50 cm broad, rough, dentate, green above and whitish, cottony beneath; petiole solid, long, up to 30 cm, deeply furrowed; in the second year a stem arises from the middle and attains a height up to 1 m, round, furrowed, succulent, pubescent, erect and becomes much branched, bears similar types of smaller leaves, up to 30 cm broad, and solitary or clustered capitula. Each capitulum 3 to 5 cm broad, receptacle surrounded by a glabrous involucre of imbricate, lanceolate to linear-attenuate bracts with hooked tips, spines of the inner bracts equal or exceed the flowers. Flowers purple, tubular.

Distribution : Sub-alpine regions of Jammu and Kashmir, Himachal Pradesh, Uttarakhand of India; Europe and Northern Asia; naturalised in United States.

Part used : Root

Macroscopical : Fusiform, usually occur in pieces of 5 to 20 cm long and 0.5 to 2 cm thick; externally brown or light yellowish-brown, longitudinally wrinkled and bear scars or small warty projections left by removal of the small secondary roots; near the crown an indistinct annulation sometimes seen and at the top felted-hairy remains of the leaf-bases may be present; frequently shows internally a whitish, lacunous tissue. Fracture short and horny, texture rough. Odour characteristic; taste sweetish and mucilaginous.

Microscopical : Transection shows outer cork upto 5 layered, suberised, thin-walled cells, cork cambium 1 or 2 layered; phelloderm

8 to 10 layered followed by 25 to 40 layered parenchymatous cortex consisting of polygonal cells with intercellular spaces; outer cortical cells thick-walled, contains yellowish resin contents, secondary phloem parenchymatous; rays broad, cambium thin, made up of collapsed cells; stele composed of narrow radiating xylem strands separated by broad rays, up to 13 cells in width, each xylem strand composed of xylem parenchyma, few vessels with broad lumen and pitted or reticulate thickening, solitary or in groups; fibres non lignified, most of the parechymatous cells contain glistening masses of irregular shaped inulin crystals. Old roots contains fibres in abundance which should not be used in drug preparation.

Identification : Evaporate 20 mL of Mother Tincture on water bath to remove alcohol and basify with 01 mL ammonia. Extract the residue with 3 x 20 mL *chloroform* and concentrate the chloroform extract to 2 mL.

Carry out TLC study of Mother Tincture on silica gel 'G' plate using *Toluene: Ethyl acetate: Formic acid* (5:4:1, v/v) as mobile phase.

A) Under U.V. light (254 nm) two spots appear at R_f 0.23 and 0.54 (all greenish).

B) Under U.V. light (366 nm) eight spots appear at R_f. 0.23, 0.33, 0.41(blue), 0.45(yellow), 0.54, 0.67, 0.78 and 0.83.

History and authority : Proved by Dr. Jeanes and S. A. Jones; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1900, **1**, 155; Blackwood, A. L., *Mat. Med., Therapeutics and Pharmacology*, 1959, 137; Bradford, T. L., *Index of Homoeopathic Provings*, 1900, 55.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Lappa Major in *coarse powder*	100 g
Purified Water	400 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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LAVANDULA ANGUSTIFOLIA
(Lava. ang.)

Botanical name : *Lavandula angustifolia* Miller **Family**: Lamiaceae

Synonyms : *Lavandula vera* DC.; *L. angustifolia* Moench; *L. officinalis* Chaix; *L. vulgaris* Lam.

Common names : *English*: Lavender; *French*: Lavande; *German*: Lavendeivluthen.

Description : A perennial, hardy, bushy shrub, up to 1 m high. Leaf oblong-linear or lanceolate, entire, opposite, younger ones often clustered in the axil, white-tomentose, revolute at the margin, while older ones greener, 2.5 to 4 cm long. Inflorescence a loose spike, having whorls of 1 to 10 flowers. Flower bluish-violet; calyx tubular, 5-toothed; corolla bilabiate, bluish-violet; stamens 4, didynamous, included in the tube; style shortly 2-fid at the apex.

Distribution : Found in Mediterranean area between the coast and the lower mountain slopes and also cultivated throughout Europe.

Part used : Flower

Macroscopical : Calyx 5 or 6 mm long, tubular, 5-toothed of which 4 very short, while the fifth tooth forms a cordate or oval projecting lobe; lower part bears 10 to 13 very hairy longitudinal ribs. Corolla about 1 cm long, bluish-violet, tubular, upper lip about 2.5 mm long, erect, deeply 2-lobed, while lower lip 3-lobed, about 1.5 mm long and less deeply incised. Stamens 4, enclosed by corolla, 2 stamens inserted about half way up the lower lip. Ovary superior, consists of 4 carpels, stigma bi-fid. Odour strongly aromatic; taste bitter.

Microscopical : Calyx: transection shows inner epidermal cells small in size, lignified, containing crystals of calcium oxalate and bear both unicellular and branched multicellular hairs; outer epidermal cells tangentially elongated, having thick cuticle, stomata present; longitudinal ribs covered with warty cuticle and large, branched, multicellular hairs, while the area away from the ribs covered with glandular hairs

with unicellular stalk and heads. Mesophyll usually parenchymatous, while each rib bears a small vascular bundle with anterior sclerenchyma fibre patches.

Corolla: transection shows outer epidermis with thick walled, anticlinally elongated cells covered with antler type of hairs, while the inner epidermal cells tangentially elongated having papillary projections and covered with small glandular and numerous characteristically long gnarled hairs, the latter frequently found at the insertion of anthers. Mesophyll parenchymatous, loosely arranged, containing crystals of calcium oxalate and vascular elements having spiral thickenings.

Pollen grains: spherical, about 45 µm in diameter, exine with 6 raised bands and 6 emergence slits.

Identification : Extract the mother tincture with 3 x 10 mL of butane. Combine all the three layers and evaporate at reduced pressure on a water bath at about 30°. Dissolve the residue in 3 mL of *ethanol*. Following tests are proceeded with this solution.

(a) Add 20 mL of *sulphuric acid* with cooling to 1 mL of the above solution, cool and then heat on a water bath for 20 minutes. Cool and add 5 mL of vanillin solution. A dark red colour is produced.

(b) To 1 mL of the above solution add 1 mL of a 3.5 percent solution (w/v) of *hydroxylamine hydrochloride* in *ethanol* and 0.6 mL of *dilute sodium hydroxide* solution. Heat on a water bath and keep boiling for 10 seconds. When cool, acidify with about 1 mL of 1N *hydrochloric acid* so that the pH is approximately 4.5, and add 0.2 mL of *ferric chloride solution*. A dark reddish brown or reddish violet colour is produced which deepens on staying for 5 minutes.

History and authority : Mentioned in German Homoeopathic Pharmacopoeia, 1990, 595.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Lavandula Angustifolia in *coarse powder*	100 g
Purified Water	350 mL

Strong Alcohol	687 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, two parts *Purified Water* and seven parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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LEDUM PALUSTRE
(Led. pal.)

Botanical name : *Ledum palustre* L. **Family**: Ericaceae

Common names : *English*: Wild Rosemary, Marsh Cistus, Labrador-tea; *French*: Rosmarin Sauvage; *German*: Wilder Rosmarin.

Description : An evergreen shrub, up to 1 m in height, with several rusty-tomentose, clustering rounded branches, stem bark ash coloured. Leaves up to 5 cm long, 8 to 12 mm broad, alternate, short petioled, linear to elliptic-oblong, dark green above, rusty-tomentose beneath, margin revolute. Flowers on long, slender, glandular pedicels in umbel-like terminal racemes, pentamerous, 1 to 1.5 cm across. Calyx 5, lobes short; petals 5, free, creamy white, obovate; stamens 10; ovary with axile placentation, style simple, stigma capitate. Fruit a capsule, oblong, 4 to 5 mm in length. Odour heavy aromatic and taste camphoraceous bitter.

Distribution : Found in northern Europe, Asia, New Foundland, Labrador to Alaska and the Aleutian Islands.

Part used : Whole plant

Microscopical : Leaf: lamina in transection shows epidermis single layered, with thick cuticle, lower epidermis bears stomata and two types of trichomes *viz*. (i) stalked and glandular (ii) simple, unicellular and very long; mesophyll differentiated into 2-layered palisade and spongy parenchyma contains aggregates of calcium oxalate and microcrystals; midrib pronounced on lower surface and bears a deep notch on upper surface; palisade not continuous on midrib region, single layered collenchyma present below the epidermis, on both surfaces, merestele arc-shaped, having conjoint, collateral vascular bundle, encapped abaxially by a band of sclerenchyma; secretory ducts present in phloem region.

Petiole: transection shows single layered epidermis of papillose cells, bears trichomes like lamina, followed by 2 or 3 layers of collenchyma; ground tissue parenchymatous; stele conjoint, collateral, encapped adaxially by sclerenchyma.

Stem: transection shows single layered epidermis; 2 or 3 layered collenchymatous hypodermis; cortex consist of 3 to 5 layers of irregular shaped parenchymatous cells small patches of stone cells; pericycle a narrow zone of continuous or somewhat interrupted cells of thick-walled fibre; phloem and xylem in concentric rings; rays uniseriate; pith of isodiametric parenchymatous cells.

Identification : Carry out TLC of chloroform extract of Mother Tincture on silica gel 'G' 60 F_{254} pre-coated aluminium plate using *chloroform*: *methanol* (9:1 v/v) as solvent system.

Under UV light (360 nm), six spots appear at R_f 0.12, 0.26, 0.49, 0.67, 0.83 and 0.91 (all blue).

History and authority : Introduced and proved by Hahnemann, *Mat. Med. Pura*, 1830, **1**, 47; Allen, T. F., *Encylop. of Pure Mat. Med.*, 1874, **5**, 531; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 261.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Ledum Palustre in *coarse powder*	100 g
Purified Water	185 mL
Strong Alcohol	840 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

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LEONURUS CARDIACA
(Leo. card.)

Botanical name : *Leonurus cardiaca* L. **Family**: Lamiaceae

Synonym : *Leonurus glaucescens* Ledeb.

Common names : *English*: Mother wort; *Germen*: Herzgespam; *French*: Agripaume, Cardiaise.

Description : A perennial herb. Stem stout, erect, up to 1.5 m high, with ridges and furrows, finely pubescent on angles and nodes. Leaves long-petioled, lower ones larger, broadly ovate to suborbicular, palmately lobed and sharply toothed; the upper ones progressively smaller and proportionately narrower, but those subtending verticils commonly oblong and 3-toothed. Inflorescence verticillaster; flower bracts subulate, nearly half as long as the calyx; calyx tube 5-angled, 5-ribbed nearly glabrous, 3 to 4 mm long, the lower two calyces strongly deflexed; corolla bilabiate, pale pink, upper lip white-villose; stamens 4, about equal, coarsely hairy; stigma glabrous. Fruit a nutlet.

Distribution : Native of Central Asia, now naturalised in U.S.A.

Part used : Whole plant

Microscopical : Leaf: transection of lamina shows single layer of epidermis with thin cuticle; stomata anomocytic present on lower surface; two types of trichomes present on both the surfaces: (i) non glandular, uniseriate, 2 to 8 celled with warty walls, and (ii) two types of glandular (a) small, short stalk with 2 to 4 celled head, (b) large, long-stalked with multicellular head; mesophyll differentiated into single layer of palisade and 4 or 5 layers of spongy parenchyma. In mid-rib epidermis single layered followed by 2 or 3 layers of collenchyma on both the sides; stele arc-shaped, phloem towards the lower surface and xylem towards the upper surface, encapped by sclerenchymatous patches; ground tissue parenchymatous.

Stem: transection rectangular in outline shows ridges and furrows; epidermis single layered followed by collenchymatous hypodermis; cortex parenchymatous, 3 or

4 layers of thin-walled cells; vascular bundles arranged in a ring, conjoint, collateral, open, 4 small in each furrow and 4 large in each ridge; 2 or 3 layers of distinct interfascicular cambium forming secondary phloem and xylem; pith large, parenchymatous and sometimes hollow; trichomes both glandular and non-glandular types like lamina.

Identification : (1) Boil 5 mL of mother tincture in a test tube with 1 mL of dilute Sodium hydroxide solution. The colour of a moistened red litmus paper placed over the mouth of the test tube changes to blue and an amine like odour is produced.

(2) To 1 mL of the mother tincture add 0.1 mL of lead acetate solution. A voluminous precipitate is produced.

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 269.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Leonurus Cardiaca in *coarse powder*	100 g
Purified Water	400 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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LEUCAS ASPERA
(Leuc. asp.)

Botanical name : *Leucas aspera* (Willd.) Link **Family**: Lamiaceae

Synonym : *Phlomis aspera* Willd.; *Leucas plukenetii* (Roth.) Spreng.; *Phlomis plukenetii* Roth

Common names : *Hindi*: Chota halkusa, Dand kalash.

Description : A herbaceous, much-branched, erect or diffuse annual, 30 to 60 cm in height. Stem erect, trichotomously branched, quadrangular, hispid, scabrid, with swollen nodes, longitudinally grooved, exhibit remnants or scars of opposite decussate leaves, internodes 4 to 7 cm long, 1 to 3 mm in thickness. Leaf subsessile, linear or narrowly oblong-lanceolate, 3 to 7 cm long 1 to 2.5 cm broad, longer leaves up to 5 cm broad; entire or crenate, serrate, acute, both surfaces pubescent. Flowers small, white, in dense terminal or axillary whorls, globose 2.5 to 3 cm in diameter, bracts long, linear, acute, bristle-tipped, ciliate with long slender hairs; calyx variable, tubular, 8 to 13 mm long, tube curved, mouth small, oblique, teeth small, triangular, bristle tipped; corolla white, about 1 cm long, tube enlarged and pubescent above, tube about 5 mm. in length, annulate about the middle, upper lip densely white-woolly, anther 4, epipetalous, didyamous, peduncle slender 1 to 1.5 cm in length. Fruit nutlet, oblong, subtruncate about 2 to 2.5 mm in length, smooth, brown. Seed minute, quadrangular conical about 2 mm in length and 1 mm in breadth, brownish black slightly mucilaginous in taste. Whole plant fragrant, taste pungent.

Distribution : Found throughout India as a weed in cultivated fields, wastelands and road sides.

Part used : Whole plant

Microscopical : Leaf: transection shows a single layer of epidermis covered with thin cuticle; two types of trichomes present (i) uniseriate, 1 to 4-celled, thick-walled, with pointed apical cell, and (ii) glandular with unicellular stalk and 8-celled head; stomata present on both the surfaces but more frequent on lower surface; mesophyll differentiated into a

single layered, occasionally 2-layered palisade and about 5-layered loosely arranged spongy parenchyma; midrib pronounced on the lower side, 4 or 5 layers of collenchyma below both upper and lower epidermis; ground tissue parenchymatous consist conjoint, collateral vascular bundle containing xylem on the upper side and phloem on the lower side. Stomatal index for upper surface 14.29 and for lower surface 16.67; palisade ratio 6.75.

Stem: transection quadrangular in outline, shows ridges and furrows; epidermis single-layered, covered with thick cuticle; 5 or 6 layers of collenchyma below each main ridge; 2 or 3 layers of collenchyma below each furrows, followed by 4 or 5 layers of chlorenchymatous cortex; endodermis distinct; pericycle represented by a few patches of fibres; 4 large vascular bundles present opposite each angular ridge; pith large, parenchymatous. Trichomes like that of leaf.

Identification : The mother tincture was evaporated to remove alcohol. A few drops of ammonia solution was added and extracted with chloroform 2-3 times. The chloroform layer was separated and the remaining extract concentrated. The concentrated extract was spotted on silica gel 'G' plates and run in the solvent system chloroform : methanol (9 : 1). On spraying with antimony trichloride & heated at 105°C six spots in visible light are observed at R_f 0.17 (pink), 0.34 (light green), 0.40 & 0.69 (brownish green), 0.77 (pink), 0.89 (light green).

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 217.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Leucas Aspera moist magma containing solids 100 g and plant moisture 310 mL	410 g
Purified Water	100 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

LITHIUM BROMATUM
(Lit. brom.)

LiBr **Mol. Wt.:** 86.84

Common names : *English*: Lithium Bromide; *German*: Bron Lithium

Description : Odourless, white granular or powder, having a sharp bitter taste; extremely deliquescent. Soluble in *water*; very soluble in *alcohol*. Contains not less than 99 percent of LiBr (86.84) when dried at 150° for 4 hours.

Identification : (i) To the concentrated aqueous solution add a few drops of 5 percent aqueous *ammonium carbonate solution*. White precipitate is formed.

(ii) The drug with *hydrochloric acid* placed in non-illuminated flame; it imparts an intense crimson colour.

(iii) To the 1% aquous solution, add dilute solution of *silver nitrate*, yellow precipitate is formed.

Reaction : The aqueous solution is neutral or slightly alkaline to litmus.

Assay : Dissolve about 0.2 g of the drug in 10 mL of distilled *water*, add 25 mL of 0.1N solution of *silver nitrate* and shake well. To this add a few drops of *ferric ammonium sulphate* as indicator and titrate the excess of *silver nitrate* with 0.1N solution of *ammonium thiocynate*. Each mL of 0.1N *silver nitrate solution* is equivalent to 0.00868 g of LiBr.

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 293.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Lithium Bromide 100 g

Strong Alcohol in sufficient quantity.

to make one thousand milliliters of the Mother Tincture.

Potencies: 2x and higher with *Dispensing Alcohol*.

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(b) Trituration 1x Drug strength 1/10

Lithium Bromide	100 g
Saccharum Lactis	900g

to make one thousand grammes of the Trituration.

(c) Potencies: 2x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol*.

MAGNOLIA GRANDIFLORA

(Magno. gr.)

Botanical name : *Magnolia grandiflora* L. **Family**: Magnoliaceae

Synonyms : *Magnolia grandiflora* Link.; *M. lanceolata* Link.; *M. obovata* Ait. ex Link.; *M. foetida* Sarg.

Common names : *Hindi*: Anlachampa, Thin champa; *English*: Bull Bay, Southern Magnolia, Lily Tree, Laurel Magnolia.

Description : Tall evergreen tree, up to 2.50 m in height, pyramidal in habit; branchlets rusty pubescent. Leaves thick, firm, oblong to obovate, glossy above, ferruginous- pubescent beneath, sometimes glabrous at length, 12 to 20 cm long. Buds rusty pubescent. Flowers terminal, solitary, white, 17 to 20 cm across, peduncle 1 to 2 cm long. Perianth large, petaloid, numerous, obovate, 7 to 12 cm long; androecium purple, numerous, androphore 1 to 1.5 cm long, filament 2 mm long, thecae linear, 10 to 17 mm long, connective extended beyond the thecae into a fleshy triangular apex; gynoecium numerous, densely tomentose, styles recurved, 5 to 10 mm long, glabrous. Fruit oval or ovate rusty brown and pubescent, 7 to 10 cm long.

Distribution : Southeast and south of U.S.A especially North of California to Texas. Cultivated in Indian gardens.

Part used : Flower

Macroscopical : Large, showy, bisexual, actinomorphic, 17 to 20 cm across, on short pedicel; perianth large, ovate to oblong, 7 to 12 cm long and 5 cm broad, round at apex; stamens many, broad, hypogynous, spirally arranged on 1 to 1.5 cm long basal portion of floral axis (androphore), filaments short, anthers linear; gynoecium ovate, 3 to 4 cm long, carpels numerous, conical, woody, densely tomentose, style recurved at apex, 5 to 10 mm long.

Microscopical : Perianth: transection shows single layer of epidermis on both the surfaces; mesophyll parenchymatous, peripheral cells tangentially elongated and compactly arranged while cells at the center oval to isodiametric, large, loosely arranged contains sclereids, isolated or in groups; vascular bundles scattered in ground tissue; secretory cavities present near vascular bundles.

Pedicel: transection shows single layered papillose epidermis covered with cuticle and many uniseriate, multicellular trichomes; sub-epidermal layers collenchymatous, 3 to 5 layered; cortex parenchymatous having sclereids, isolated or in groups, secretory cavities and prismatic crystals; inner part of cortex contains parenchyma with intercellular spaces; stele consist of conjoint, collateral vascular bundles; pith contains sclerotic cells.

Androphore: transection shows almost similar structure as pedicels except no trichome present.

Anther: transection shows 2 celled structure, dehiscing longitudinally; pollen sacs present deeply inside; ground tissue parenchymatous with 3 vascular bundles; endothecium well developed with thickening.

Pollen grain: heteropolar, bilateral, monosulcate, oblate, elliptical-ovoid in polar view; colpa elongate, exine undulated, tectum fairly thick.

Carpel: transection shows single layer of epidermis with many uniseriate, multicellular, trichomes; ground tissue parenchymatous contains scattered vascular elements; sclereids isolated or in groups and secretory cavities; embryo 1 to 2, mostly 2 in each carpel.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform. Concentrate the chloroform extract to 2 mL. Carry out TLC of chloroform extract of mother tincture on slica gel 'G' plate using *chloroform:methanol* (9:1 v/v) as mobile phase.

(a) On spraying with *antimony trichloride reagent*, five spots appear at R_f 0.23, 0.43, 0.76, 0.81 and 0.88 (pinkish yellow).

(b) Under UV (254 nm) light, five spots appear at R_f 0.1, 0.3, 0.41, 0.62 and 0.9 (all blue).

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 388.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Magnolia Grandiflora in *coarse powder*	100g
Purified Water	600 mL
Strong Alcohol	430 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with Dispensing Alcohol.

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MOMORDICA CHARANTIA
(Momor. ch.)

Botanical name : *Momordica charantia* L. **Family**: Cucurbitaceae

Common names : *Hindi*: Karela; *English*: Bitter gourd.

Description : A monoecious annual climber with long, branched, angled and grooved, more or less pubescent or hairy stem. Tendrils simple, slender, elongated, pubescent. Leaves almost orbicular in outline, 5 to 12.5 cm in length, pubescent or sub-glabrous on both sides, cordate at base, deeply divided into 5 to 7 lobes, lobes acute or sub-acute, apiculate, coarsely spinous-dentate, constricted at the base; petiole 2.5 to 5.0 cm long, chanelled, pubescent. Flowers monoecious; male flowers solitary, peduncle 5 to 10 cm long, glabrous or pubescent, furnished with a large reniform or orbicular bract at the middle; calyx 8 to 10 mm long, pubescent, lobes 5 or 6 mm long, elliptic, yellow, segments obtuse or emarginated, 1.6 to 2 cm long, veined; stamens 3 or rarely 2, filaments short. Female flowers peduncles 5 to 10 cm long, slender, bracteate, usually at or near the base; staminodes 3, glanduliform; ovary fusiform, muricate; stigmas 3, each bi-fid. Fruits 5 to 25 cm long, light green to dark green but bright red when mature, pendulous, fusiform, beaked, ribbed with numerous tubercles. Seeds brownish, 13 to 16 mm long, compressed, embedded in red pulp.

Distribution : Cultivated throughout India.

Part used : Fruit

Macroscopical : Fruit a pepo, 5 to 25 cm long, pendulous, fusiform, ribbed with numerous tubercles; 3-valved at apex when mature; seeds brownish, dorsiventrally flat with lateral linings and distinct beak like funiculus, 13 to 16 mm long, 6 to 10 mm wide, compressed, embedded in red pulp; seed coat hard, thick and brittle, inner surface creamish-white, kernel yellow. Fruit light green to dark green, red at maturity.

Microscopical : Fruit: transection circular in outline with highly and moderately elevated tubercles; epidermis single layered, of small cells, with two types of trichomes, (i) non-glandular,

uniseriate, multicellular, 3 or 4 celled, having warts on the wall, and (ii) glandular with one-celled stalk and one-celled spatulate head; epicarp shows tubercles with thick-walled chlorenchymatous cells; followed by a wide zone of thin-walled parenchymatous cells having starch grains; mesocarp, parenchymatous, with abundant starch grains and a few conjoint, collateral vascular bundles; endocarp of simple parenchyma cells with starch grains.

Seeds: testa and tegmen fused; transection shows ridges and grooves, single layer of elongated columnar cells of varying size with mucilage cells in grooves covered by thick cuticle and contains starch grains followed by several layers of pigmented cells; hypodermis differentiated into outer zone of 3 or 4 layers of small, contiguous cells and inner zone of 5 to 11 layers of loosely spongy parenchyma, lignified, thick-walled cells with pits; endosperm parenchymatous containing vascular bundles.

Cotyledon: crescent shaped in outline, epidermis single layered; ground tissue parenchymatous; vascular bundles present in the middle and almost in a row.

Identification :

a. 25 mL of the mother tincture was diluted with water and evaporated to $1/3^{rd}$ of its initial volume. The content was transferred to a separating funnel and were extracted with chloroform thrice and the chloroform extract was concentrated to 1 mL before spotting on TLC plate. The plate was developed in different ratio of *chloroform : methanol* (9:1, v/v) as solvent system. Under UV light, four spots appear at R_f 0.37, 0.46, 0.66 and 0.86 (all light blue).

b. Another plate developed in *chloroform : methanol* (7:3, v/v) as solvent system, on spraying with *Dragendorff's reagent* two spots appear at R_f 0.80 (Orange-yellow) and 0.91 (orange) . The aqueous layer of extract was developed in *Butanol : Acetic acid : Water* (4:1:1 v/v), on spraying with Ninhydrin, four spots appear at R_f 0.21,0.35,0.46 (all violet) and 0.66 (light pink).

History and authority : Bhattacharya, M., *Homoeopathic Pharmacopoeia*, 1970, 354.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Momordica Charantia moist magma containing solids 100 g and plant moisture 460 mL	560 g
Strong Alcohol	600 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, five parts *Purified Water* and four parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

MUCOTOXIN
(Mucot.)

Microbiological name : *Klebsiella pneumoniae* Friedlander.

Family: Enterobacteriaceae

Common names : Bacillus Mucosus Capsulatus; Friedlander's Pneumobacillus.

History and authority : Introduced by Julian, O.A., Treatise of Dynamised Micro-immunotherapy, 1982, **2**,193.

Biological distribution : Respiratory tract of human being associated with inflammation.

Source for the preparation of homoeopathic drug : It is isolated from throat and bowel of human, soil and water.

Description : Form-short, thick rod possessing a capsule. Occurs single and in pairs. Size- 0.5 to 0.8 µm by 1 to 5 µm. Staining properties - stains well with *aniline dyes.* Gram-negative, non-motile; non- spore producing.

Colony characteristics : **Nutrient Agar:** Round, mucoid, translucent, grayish-white colonies with an entire edge.

Gelatin Agar: Moderate, filiform, grayish-white growth without liquefaction.

Litmus milk: Acid is produced, without coagulation of the medium.

Nutrient Broth: Turbidity, with the development of slimy sediment and a pellicle.

Resistance and metabolism : Culture at room temperature remains viable for months, but the organism is easily killed by exposure to direct sunlight and chemical disinfectants. Killed by moist heat at 55° in half an hour. Optimum temperature for growth is 37°.

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NATRUM CAUSTICUM
(Nat. cau.)

NaOH **Mol. Wt.:** 40.0

Common names : *English*: Sodium hydroxide, Caustic soda; *French*: Soude caustique; *German*: Natron, Aetznatron.

Description : White pellets or sticks, hard, opaque, deliquescent, soluble in *water* and *ethanol*; readily absorbs *carbon dioxide*. When dissolved in water or alcohol much heat is liberated. It is very caustic to organic matter. Its aqueous solution is alkaline. It is not decomposed by heat. Its flame is of a bright yellow colour. Contains not less then 97.0% and not more than 100.5% w/w calculated as NaOH.

Identification : Carefully dissolve 5 g in 12 mL of *distilled water*, add 17 mL of 7M *hydrochloric acid*, adjust to pH 7 with 1M *hydrochloric acid* and add sufficient distilled water to produce 50 mL (solution A). It gives reaction of *sodium salts.*

Arsenic : Dissolve 2.5 g in 50 mL of water, add 16 mL of *brominated hydrochloric acid* and remove the excess of *bromine* with a few drops of *stannous chloride* solution. The resulting solution complies with the limit test for arsenic.

Heavy metals : Not more than 20 ppm, determinated by method A on a solution prepared by dissolving 1 g in 5 mL of *water* and 10 mL of 3M *hydrochloric acid*, heating to boiling, cooling and diluting to 25 mL with *water*.

Iron : 20 mL of solution A complies with the limit test for *iron.*

Carbonate : Not more than 2% calculated as sodium carbonate determined in the assay.

Chloride : Dissolve 2 g in 5 mL of *water*, acidify with about 8 mL of *nitric acid* and dilute to 20 mL with *water*. The solution, without the addition of dilute *nitric acid*, complies with the limit test for *chlorides*.

Sulphates : Dissolve 2 g in 6 mL of distilled water, adjust the pH to 7 with *hydrochloric acid* and dilute to 20 mL with *distilled water*. The resulting solution complies with the limit test for *sulphates*.

Biochemical characteristics : It is aerobic and facultative anaerobe. Acid and gas are produced in *glucose, sucrose, lactose, galactose* and *fructose*. It does not ferment *maltose* and *arabinose.*

Preparation : (a) Under Nosode Group N-I suspension consisting of 20 x 10^{10} cfu/mL is obtained. Proceed according to "General Instruction for preparation of Nosode" group N-I to obtain 1x.

(b) Trituration 2x — Drug strength 1/100

Mucotoxin 1x	1.0 mL
Saccharum Lactis	99.0 g

to make one hundred grammes of the trituration.

(c) Potencies: 3x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol.*

Storage : Preparation below 6x to be stored at a temperature about 5° and not to be allowed to freeze.

Caution : (a) Not to be dispensed below 6x.

(b) 6x should be free from live germs and should pass the test for sterility as mentioned in Indian Pharmacopoeia 2007 before use.

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NUX MOSCHATA

(Nux. mos.)

Botanical name : *Myristica fragrans* Houtt. **Family**: Myristicaceae

Common names : *Hindi*: Jaiphal; *English*: Nut-meg; *French*: Le muscadier; *German*: Muskatnuss.

Description : A tree with slender branches. Leaves 7 to 10 cm long, coriaceous, elliptic-oblong or lanceolate, acuminate, glaucous beneath, nerves about 8 pairs, slender; petiole 6 to 12 mm long. Male racemes 2.5 to 5 cm. Flowers small, 6 mm long, fleshy, pale yellow and aromatic. Staminate flowers larger than pistillate flowers, axillary, usually in clusters of 3; anthers 9 to 12, connate in a cylindric stipitate column. Pistillate flowers small, yellow, solitary and axillary; bracteole a scale under the glabrate perianth. Fruit ovoid, sub-globose or pyriform, 4 to 5 cm long.

Distribution : Native of Molucca Island; grown in Nilgiri and elsewhere in Kerala, Tamil Nadu, Assam and other states.

Part used : Seed

Macroscopical : Ovoid, sub-globose or pyriform, varying in size, 20 to 30 mm in length and 15 to 24 mm in width, grayish-brown externally and marked with numerous minute dark reddish-brown points and lines, also reticulately marked with small furrows; at one end a small circular depression present which marks the position of the radicle; a groove marking the line of the raphe extends from the depression to the opposite end of kernel at the apex where chalaza present; cut surface has a mottled appearance and easily yields oil with a little indentation. Odour strong and characteristically aromatic, taste acrid and bitter.

Microscopical : Transection shows peripheral or outer perisperm of tangentially elongated, thick-walled cells filled with reddish-brown pigments and a few cells contain prismatic crystals; inner perisperm grows into the endosperm and consisting of isodiametric thin-walled parenchymatous cells with reddish-brown contents, vascular strand and numerous large cells filled with oil; endosperm consists of polyhedral parenchymatous cells, appears whitish, have occasional tannoid cells with brown content, abundant

Potassium : Acidify 2.5 mL of solution A with *acetic acid* and add 0.15 mL of *sodium cobalt nitrite* solution, no precipitate is formed.

Assay : Weigh accurately 2 g, dissolve in 80 mL of *carbon dioxide free water*, add 0.3 mL of *phenolphthalein* solution and titrate with 1M *hydrochloric acid* till pink colour disappear. Add 0.3 mL of *methyl orange* solution and continue the titration with 1M *hydrochloric acid*. Each mL of 1M *hydrochloric acid* used in the second part of the titration is equivalent to 0.1060 g *sodium carbonate*. Each mL of 1M *hydrochloric acid* used in the combined titrations is equivalent to 0.0400 g of total alkali calculated as *sodium hydroxide*.

History and authority : Homoeopathic Pharmacopoeia of United States of America, 1981, 413.

Preparation : (a) Mother Solution Ø Drug strength 1/10

Natrum Causticum 100 g

Purified Water in sufficient quantity

to make one thousand millilitres of the Mother Solution.

(b) Potencies: 2x with Dilute Alcohol; 3x and higher with *Dispensing Alcohol*.

Storage : It should be stored in well closed container.

Caution : Not to be dispensed below 3x. Upto 2x and higher in *Dispensing Alcohol*.

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NUX VOMICA

(Nux. vom.)

Botanical name : *Strychnos nux-vomica* L. **Family**: Loganiaceae

Common names : *Hindi*: Kuchla, Muhti; *English*: Poison nut; *French*: Noix vomiques; *German*: Krahenaugen.

Description : A deciduous tree, usually medium sized but sometimes attaining 30 m in height, often armed with short axillary spines. Bark thin, gray, smooth, or rough with lenticels. Young shoot polished, deep-green. Leaves 7 to 15 cm long, broadly elliptic, obtuse or acute, entire, 3 to 6 nerved, glabrous and shining, petiole 6 to 12 mm long. Flowers many, greenish-white, in terminal short peduncled, pubescent, compound cymes; calyx 2.5 mm long, hairy outside, lobes, 5, acute; corolla less than 12 mm long, glabrous or nearly so outside; tube cylindric, hairy inside towards the base, lobes 5, narrowly oblong, acute; stamens 5, half exserted from the corolla tube, oblong, glabrous; ovary glabrous. Fruit a berry, globose, 2.5 to 7.5 cm in diameter,orange when ripe. Seeds usually many, discoid, compressed, about 2 cm in diameter, convex on one side and concave on the other; rough, shining, clothed on both sides with fine silky hairs radiating from the centre.

Distribution : It grows in dry deciduous forests of Western Ghats and Himalayas.

Part used : Seed

Macroscopical : Seed gray or greenish-gray, disc-shaped, nearly flat umbonate but sometimes irregularly bent, 10 to 30 mm in diameter and 4 to 6 mm thick; margin rounded or somewhat acute, hilum raised and connected to the micropyle by radial ridge; surface silky, densely covered, with radiately arranged, closely appressed, outwardly directed, trichomes; endosperm, translucent, horny, having a central disc-shaped cavity, in which adjacent to the micropyle lies the embryo, with 2 small, thin, cordate, 5 to 7 nerved cotyledons and terete radicle.

Microscopical : Transection of testa shows single layered epidermis, each epidermal cell elongated externally to form closely

needle shaped crystals of fat, aleurone grains associated with phytoglobulin and compound starch grains with distinct hilum.

Identification : (a) Take 1 mL of mother tincture, add 10 mL of distilled water. Milky turbidity is produced. Add 0.1 mL of strong sodium hydroxide solution. An orange colour is produced. Shake vigorously; a head of froth that persists for some minutes is produced.

(b) Take 1 mL of mother tincture. Add a mixture of 0.2 mL of phloroglucinol solution and 1 mL of hydrochloric acid. A rose pink to red colour is produced; heat to boiling. A dark red colour that gradually changes to brown is produced.

(c) To 0.2 mL of mother tincture, add 2 mL of alcohol, then add 0.1 mL of sulphuric acid. A dark red colour is produced.

History and authority : Introduced by Helbig; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **7**, 61.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Nux Moschata in *coarse powder* 100g

Strong Alcohol in sufficient quantity.

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

Strong Alcohol	824 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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appressed trichomes up to 1 mm long, lignified, comprising of bulbous base and a thick walled narrow elongated projection; trichomes slightly bend beyond the base, trichomes with about 10 longitudinal ribs of lignified thickening; remainder of the testa consisting of collapsed parenchyma, appearing in section as a brown band. In the region of the hilum, some very small spiral vessels occur as components of a short vascular strand. Endosperm with very thick-walled hemicellulosic polyhedral cell with pits, connected by plasmodesmal strands and containing oil droplets and aleurone grains up to about 30 μm in diameters. Embryo of small parenchymatous cells with oil droplets and small aleurone grains.

Identification : (a) To 1 mL of mother tincture, add 3 mL of water and 0.1 mL of *ferric chloride* solution, a green colour is produced.

(b) Take 2 mL of the mother tincture in a porcelain dish. Add 0.2 mL of *dilute sulphuric acid*. Concentrate on a water bath, keeping the mixture under observation. A violet residue temporarily forms around the edge that disappears on moistening with water.

(c) Evaporate 2 mL of the mother tincture to dryness on a porcelain dish on a water bath. Add 0.2 mL of fuming *nitric acid* to the residue, an orange to reddish orange colour is produced.

(d) Evaporate 2 mL of the mother tincture to dryness on a watch glass on a water bath. Add to the residue 0.2 mL of freshly prepared solution of 5 mg of *ammonium vanadate* in 5 mL of *sulphuric acid*. The initially brown mixture is gradually coloured violet within 15 minutes starting at the edge.

History and authority : Proved by Hahnemann; *Mat. Med. Pura,* 1830, **2**, 223; Allen, T.F., *Encyclop. of Pure Mat. Med.,* 1874, **7**, 83; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 613.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Nux Vomica in moderately *coarse powder*	100 g
Purified Water	200 mL

Stomata anomocytic confined only on lower epidermis; stomatal index 15.9.
Petiole: transection horse-shoe-shaped in outline; single layered epidermis of tangentially elongated, irregular cells, covered with thick cuticle; 2 or 3 layer of collenchyma; followed by parenchymatous ground tissue, few cells of parenchyma contain oil droplets; one arc-shaped large vascular bundles present in centre and 2 to 3 small subsidiary bundles arranged in vertical rows; central vascular bundle encapped with small patches of sclerenchymatous fibres. Trichomes both glandular and non glandular types as in lamina.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a. Under UV light (254 nm), ten spots appear at R_f 0.13 (brown), 0.21 (brown),0.29 (blue), 0.37 (blue), 0.45 (blue), 0.56 (light blue), 0.62 (light blue) 0.70 (yellow), 0.86 (yellow), 0.94 (light blue).

b. Under UV light (366 nm), ten spots appear at R_f 0.13 (dark red), 0.21 (dark red),0.29 (red), 0.37 (red), 0.45 (red), 0.56 (light yellow), 0.62 (red) 0.70 (red), 0.86 (red), 0.94 (light yellow).

c. On exposure to Iodine vapors, ten spots appear at R_f 0.13 (green), 0.21 (green),0.29 (green), 0.37 (brown), 0.45 (light green), 0.56 (light brown), 0.62 (green) 0.70 (yellow), 0.86 (green), 0.94 (light brown).

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 631; Anshutz, E. P., *New Old and Forgotten Remedies*, 1996, 352.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Nyctanthes Arbortristis moist magma containing solids 100g and plant moisture 350 mL	450 g
Purified Water	50 mL
Strong Alcohol	635 mL

C.

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NYCTANTHES ARBOR-TRISTIS
(Nyct. arb.)

Botanical name : *Nyctanthes arbor-tristis* L. **Family**: Oleaceae

Common names : *Hindi:* Harsingar; *English:* Night Jasmine, Coral Jasmine.

Description : A small tree with gray or greenish rough bark. Branchlets quadrangular. Leaves opposite, ovate, short petioled. Bracteate heads disposed in terminal trichotomous cymes, 3 to 7 flowers in each head, sweet-scented, bracts elliptic, up to 1.2 cm, calyx ovoid, cylindric, subtruncate; corolla salver-shaped, white; stamen 2, inserted on the top of the corolla tube; filaments short, anthers almost subsessile; style cylindric, shortly bifid; ovary 2-celled, 1-ovule in each chamber. Capsule orbicular, compressed parallel to partition. Seed erect, orbicular, flattened.

Distribution : Native and found throughout India.

Part used : Leaf

Macroscopical : Leaf cordate or oblong, pointed, entire or coarsely serrate, scabrous, 5 to 10 cm long and 2.5 to 6.3 cm broad, short petioled, petiole upto 6 mm long. Taste bitter, astringent and stains the saliva when chewed.

Microscopical : Lamina in transection shows single layer of epidermis with thick cuticle; two types of trichomes present on both the surfaces: (i) unicellular, of varying length and with pointed end, cystoliths present at the base of hairs; (ii) glandular trichome with unicellular stalk with 4-celled head, somewhere sessile glandular trichomes also present; mesophyll differentiated into 2 layered elongated palisade cells and 5 or 6 layers of spongy parenchyma filled with starch grains; palisade cells not continuous in mid-rib region. Midrib single layer of epidermal cells covered with thick cuticle followed by 2 or 3 layers of collenchymatous tissue on both surfaces; ground tissue parenchymatous; meristele arc-shaped, vascular bundle consists of radially arranged xylem and phloem towards the lower side, encapped with sclerenchymatous fibres on lower surface.

OENOTHERA BIENNIS
(Oen. bi.)

Botanical name : *Oenothera biennis* L. **Family**: Onagraceae

Synonyms : *Onagra biennis* (L.) Scop.

Common names : *English*: Evening Primrose; *French*: Onagre; *German*: Nachtkerze.

Description : Usually biennial; in the first year up to 1.2 m high and bearing flowers; in the second year mature plant having rosette of leaves at the base and subaerial, red, fleshy roots with papery bark. In the first year plant copiously branched, green, terete or becoming somewhat angled in the inflorescence. Leaves alternate, varying from narrow to long, ovate-lanceolate, 5 to 15 cm in length, acute or acuminate, entire to repand-dentate, crisped on the margin, sessile or short petioled, pubescent. Flowers a few to many in terminal racemes; bracts resembling the leaves but much smaller; hypanthium tube 3 to 6 cm long; sepal appendages terminal, connivent for the most of their length before anthesis, 1 to 5 mm length; petals yellow, 15 to 25 mm long, obcordate, broader than long; stigma surrounded by the anthers, self pollinated in the bud. Fruit a capsule 2.5 cm long, loosely aggregated in the lower part of the spike, more densely above, shorter than the sub-persistent leafy bracts.

Distribution : United States, Canada to Gulf of Mexico, Atlantic to the Pacific coast and cultivated in India.

Parts used : Whole plant

Microscopical : Leaf: lamina in transection shows single layer of epidermis with thin cuticle; stomata on both surfaces, mostly anisocytic, a few diacytic and anomocytic; trichomes non-glandular and of two types: (i) unicellular, thick-walled, warty, narrowing towards apex with unicellular base, and (ii) short, swollen and club-shaped, thin-walled with granular contents. Mesophyll differentiated into 2 layers of palisade and compactly arranged spongy parenchyma containing raphides and idioblasts; midrib consists of 2 layered collenchyma below the epidermis on both sides; arc-shaped stele containing xylem towards the upper surface and phloem towards the lower surface; ground

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol;* 3x and higher with *Dispensing Alcohol*.

History and authority : Introduced by Riker Nute; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **7**, 137; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **2**, 640

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Oenothera Biennis moist magma containing solids 100g and plant moisture 400 mL	500 g
Purified Water	100 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four parts *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

tissue parenchymatous with idioblasts and raphides of calcium oxalate. Palisade ratio 2.75 to 4. Stomatal number of upper epidermis 200 to 400 per sq.mm, lower epidermis 300 to 400 per sq.mm. Stomatal index of upper epidermis 20 to 30, lower epidermis 26 to 36.

Petiole: cup-shaped structure in outline, with 2 small protuberances on dorsal side. Single layered epidermis covered with cuticle and followed by 1 to 2 celled thick-walled hypodermis; unicellular, warty trichomes present; vascular bundle similar as on leaf.

Stem: transection shows single layer of epidermis covered with thin cuticle and trichomes. Trichomes non-glandular and of two types: (i) unicellular, thick-walled warty, with pointed apex and multicellular swollen base, and (ii) unicellular type as in leaf; 2 or 3 layers of collenchymatous hypodermis ; cortex parenchymatous consisting of large thin-walled, oval or rounded cells and idioblasts; pericycle sclerenchymatous, in continuous ring; endodermis single-layered of barrel shaped cells; phloem and xylem arranged in a ring, xylem contains radially arranged vessels, thick-walled parenchymatous rays; intraxylary phloem consists of fibers solitary or in group of 2 or 3; pith large parenchymatous, with idioblasts and starch grains.

Root: transection shows multi-layered cork followed by wide parenchymatous cortex with well developed intercellular spaces. Cambium continuous band of 4 to 6 layers; a wide continuous secondary phloem present outer side of cambium, xylem vessels scattered in wide secondary thick-walled tissue. Pith absent. Raphides present throughout the parenchymatous tissue.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC over activated Silica gel 'G' plate using *chloroform : methanol* (9:1 v/v) as mobile phase.

(a) On spraying with antimonytrichloride and heating, four spots appear at R_f 0.13, 0.30, 0.74 and 0.91 (all blue).

(b) On exposure to Iodine vapors, three spots appear at R_f 0.43, 0.57 and 0.88 (all brown).

Petiole: in transection somewhat crown shaped; epidermis single layered with numerous non-glandular and glandular trichomes; collenchyma tissue in corners and underlying the epidermis; ground tissue parenchymatous of isodiametric, oval or elliptical cells; central vascular bundle large, conjoint, collateral and 2 small subsidiary vascular bundle present on each upper corner.

Stem: transection rectangular in outline, shows nearly rectangular epidermal cells, angular where hairs arise; 3 layers of collenchyma in each corner and 1 layer underlying the epidermis on each side; pericycle a discontinuous ring of fibres; cortex parenchymatous having brown contents except in about 3 layers of cells adjoining phloem tissue; fibrovascular in a continuous ring; pith parenchymatous of isodiametric cells and mostly pitted.

Flower: bracts and calyx have similar structure as that of leaf but in calyx no hairs present on the inner epidermis; corolla tube having irregular cells on inner side and regular and papillose towards outside of lobes.

Identification : (a) Take 1 mL of mother tincture. Add 50 mL of distilled water and 0.1 mL of ferric chloride solution. A green colour is produced.

(b) Extract 10 mL of mother tincture with hexane (3 x 10 mL), filter the organic phase and evaporate to dryness under reduced pressure at about 30° and dissolve the residue in 2 mL of ethyl acetate. Take 0.2 mL of the residual part; add 1 mL of acetic anhydride and 0.1 mL of sulphuric acid. A violet colour is produced within 2 min., which gradually changes to blue green and then to green.

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, 2, 677; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 213.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Origanum Vulgare in moderately *coarse powder* 100 g

Strong Alcohol in sufficient quantity.

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

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ORIGANUM VULGARE
(Origan. v.)

Botanical name : *Origanum vulgare* L. **Family**: Lamiaceae

Synonyms : *Origanum normale* D. Don.; *O. laxiflorum* Royle ex Benth

Common names : *Hindi*: Van Tulasi, Sathra; *English*: Common or Wild marjoram.

Description : An aromatic, branched, perennial herb, 30 to 90 cm high. Leaf broadly ovate, entire or rarely toothed, about 2.5 cm long, hairy beneath. Flowers purple or pink in corymbose cyme; bracts purplish, about the length of calyx. Calyx of 5 nearly equal teeth; corolla longer than the calyx, bi-lipped; stamens 2 or 4, exserted. Fruit a nutlet, smooth, brown. The whole plant has peculiar fragrant; odour balsamic and taste bitter.

Distribution : Found in temperate Himalayas from Kashmir to Sikkim at altitude of 1,500 to 3,600 m.

Part used : Whole plant

Microscopical : Leaf: transection of lamina shows single layered epidermis covered with thin cuticle; trichomes both, non-glandular and glandular present on both the surfaces, non-glandular trichomes curved, pointed, unicellular, some papillose, other smooth, capitate trichomes with multicellular stalks; glandular trichomes small, bicellular with unicellular stalks; mesophyll differentiated into single layer of palisade and spongy parenchyma; midrib large and more pronounced on lower side; 2 to 3 layers collenchymatous tissue present on both side below the epidermis; ground tissue parenchymatous; consist of meristele arc-shaped, xylem arranged radially towards the upper side, phloem parenchymatous towards the lower side; vascular tissue traversing the spongy mesophyll; stomata diacytic and anomocytic present on both the surfaces, numerous on the lower surface. Oil glands about 40 µm in diameter; gland cells of the trichomes about 32 µm and small capitate trichomes with head about 22 µm in diameter.

the junction of two layers indicates the presence of Phellandrene (a terpene).

History and authority : Introduced by Hartlaub and Trinks; Proved by Nenning and Richter; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1984, **7**, 335; Hering, C., *Guiding Symptoms*, 1879, **8**, 298; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 757.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Phellandrium Aquaticum in *coarse powder* 100 g

Strong Alcohol in sufficient quantity

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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PHELLANDRIUM AQUATICUM
(Phel. aqu.)

Botanical name : *Oenanthe phellandrium* Lamks. **Family**: Apiaceae

Synonym : *Phellandrium aquaticum* (L.) Poir.

Common names : *English*: Water Hemlock; *French*: Cigus aquatique; *German*: Wasserfenchel.

Description : A biennial herb. Root spindle shaped, thick, horizontal, crooked, oblique, resembling a turnip. Stem 60 to 90 cm high, very stout at the base, hollow, furrowed, very bushy, with numerous spreading leafy branches. Leaves shining; petiolate, spreading, tripinnate with innumerable fine acute segments. Inflorescence an umbel, having upper flowers largest. Flowers white, upper ones largest.

Distribution : Northern Asia and Europe.

Part used : Fruit

Macroscopical : A dry, indehiscent schizocarpic cremocarp, 2 chambered, small, yellowish-brown fruit; when ripe the fruit splits apart into indehiscent, one seeded , there no distinction between pericarp and accessory tissue; the mericarp remain attached to the prolonged end (corpophore) of the axis.

Microscopical : Transection shows 2 mericarps, each mericarp almost regular pentagon, having ridges and furrows; single layer of epidermis with occasional stomata; followed by thick-walled, lignified, pitted parenchyma or branched sclereids; vascular bundles located in ridges, 6 vitae, lined by epithelium of small polygonal tubular cells alternate with vascular bundles. Seed coat or testa 4 or 5 layers of tangentially elongated thick-walled cells; endosperm umbelliferous type, consist of moderately thick-walled parenchyma containing oil droplets, aleurone grains and occasionally rosettes of calcium oxalate crystals.

Identification : Take a solution of 5 g of *sodium nitrite* in 8 mL of *water*, add 5 mL *petroleum ether* extract, add slowly 5 mL of *glacial acetic acid*, shake gently, a flocculent precipitate at

Preparation : (a) Trituration 2x — Drug strength 1/10

Phosphorus Rubrum	1g
Saccharum Lactis	99 g

to make hundred grammes of the trituration

(b) Potencies: 3x and higher to be triturated in accordance with the method HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol*.

Caution : 2x and higher, prepared from the pure red phosphorus free from any particles of common phosphorus. In preparing the 2x triturations the mass should be kept moistened with alcohol during the process.

PHOSPHORUS RUBRUM
(Phos. rub.)

Common names : *English*: Amorphous phosphorus, Red phosphorus.

Description : It is a dark - red mass or powder, insoluble in alcohol, ether and carbon disulfide; remains unaltered in dry air, is infusible and volatilizes slowly above 260°, specific gravity 2.19. It is not readily combustible and may be handled freely as it does not take fire by friction at ordinary temperatures; it may contain small quantity of *common phosphorus*, which will float in a solution of chloride of calcium and disulfide of carbon in which the red *phosphorus* sinks to the bottom; it is an allotropic form of *phosphorus,* which may be obtained by heating ordinary *phosphorus* for many hours at 240° in a sealed glass tube.

Identification : Prepare *cupric sulfate* test paper by immersing 0.5 x 10 cm strips of filter paper in 10% *cupric sulfate* solution and drying in air. Prepare a control as follows:-dissolve about 0.1 g of yellow *phosphorus* in 100 mL of *carbon disulphide*. Dilute a volume of the solution equivalent to 3 mg of the *phosphorus* with *sufficient carbon disulfide* to make 10 mL.

(i) P when heated at 420° and lower, is deep red and often metallic, however while heating higher than 436° gives forms varying in colour from deep maroon to orange-red.

(ii) P dissolves in molten lead while hot and separates out on cooling as small dark reddish violet crystals.

(iii) Shake 20 g of the sample with 75 mL of *carbon disulfide* in a glass stoppered cylinder and let stand in the dark over night. Filter and wash to 100 mL with *carbon disulfide*, collecting the filtrate in a graduated cylinder. Immerse the cylinder in hot wåter and evaporate to 10 mL. Immerse a strip of *cupric sulphate* in the solution. The stain produced is not darker than a strip immersed in the control.

History and authority : Homoeopathic Pharmacopoeia of United States of America, 1981, 448.

(b) Add 1 mL of the mother tincture and 10 mL of distilled water and shake vigorously and repeatedly. The foam that is produced persists for several hours.

(c) Heat 1 mL of the mother tincture with 1 mL of a 1% solution (w/v) of *resorcinol* in *hydrochloric acid*, an intense red color is produced.

History and authority : Proved by Schultz; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **7**, 502; Hering, C., *Guiding Symptoms*, 1879, **8**, 411; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 802.

Preparation : (a) Mother Tincture Ø

Drug strength		1/10
Phytolacca in *coarse powder*		100 g
Purified Water		400 mL
Strong Alcohol		635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with D*ispensing Alcohol.*

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PHYTOLACCA
(Phyto.)

Botanical name : *Phytolacca americana* L. **Family**: Phytolaccaceae

Common names : *English*: Pokeweed, American night shade; *French*: Morella a' grappes; *German*: Americanische Kermesbeere.

Description : A strong smelling herb, 1 to 4 m in height. Leaves oblong or ovate-lanceolate, 10 to 30 cm long; acute or acuminate. Flowers small, about 2.5 cm across; in peduncled 5 to 20 cm long racemes, nodding in fruit; pedicels bracteate at base; perianth 5, segment small, about 2.5 mm long, broadly ovate, greenish-white, turning reddish in fruit; stamens 10, in 2 series; carpels 10, united except from the style, ovary sub-globose. Fruit a fleshy berry, dark purple, about 12 mm across.

Distribution : Indigenous to North America, common weed in Mediterranean countries.

Part used : Root

Macroscopical : Nearly cylindrical segments or short fusiform roots (rarely) occurs in transverse, longitudinal or oblique irregularly broken slices; externally the bark is light brown to light yellowish-orange, incompletely annulate and longitudinally or spirally wrinkled; texture and fracture fibrous, inner surface grayish to light brown.

Microscopical : Transverse section characterized by the presence of suberised epidermis up to 8 layers of cork; a narrow secondary cortex of parenchyma cells containing starch or raphides of calcium oxalate or microcrystals; several concentric zones of open, collateral fibrovascular bundles, each of which alternates with a narrow zone of interstitial parenchyma and separated by broad parenchymatous rays, whose cells contain either short raphides of calcium oxalate or sand and starch grains.

Identification : **(a)** Take 1 mL of the mother tincture, add 2 mL of distilled water. The mixture shows faint yellowy opalescence. Add 0.1 mL of *dilute ammonia* solution, it becomes clear again and a strong yellow.

	Proteus	1.0 mL
	Saccharum Lactis	99.0 g

to make one hundred grammes of the trituration.

(c) Potencies: 3x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol*.

Storage : Preparation below 6x to be stored at a temperature about 5° and not to be allowed to freeze.

Cautio : (a) Not to be dispensed below 6x.

(b) 6x should be free from live germs and should pass the test for sterility as mentioned in Indian Pharmacopoeia 2007 before use.

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PROTEUS
(Proteus)

Microbiological name : *Proteus vulgaris* Hauser. **Family**: Enterobacteriaceae

History and authority : Introduced by Bach, Wheeler and Dishington; Julian, O.A., *Treatise of Dynamised Micro Immunotherapy*, 1982, **2**, 291.

Biological distribution : Found in soil, intestinal contents of human, water rich in organic matter, putrefactive materials.

Source for the preparation of homoeopathic drug : Fecal material of human being.

Description : Form-small, thin, pleomorphic bacilli. Occurs singly, in pairs and frequently in long chains. Size- 0.5 to 1µm by 1 to 3 µm. Staining properties- Gram-negative, non-spore producing and motile with numerous peritrichous flagella.

Colony characteristics : **Nutrient Agar:** opaque, luxuriant, thin, moist growth spreading over the entire surface.

Nutrient Agar slant: uniform, slightly raised bluish gray, spreading growth.

Gelatin stab: filiform growth, with rapid cup shaped liquefaction, which is complete in 10 to 12 days.

Resistance and metabolism : Optimum temperature for growth is 37°, killed by moist heat at 55° in one hour.

Biochemical characteristics : Aerobic and facultative anaerobe. Produces *hydrogen sulfide* and *ammonia*. *Nitrates* are reduced to *nitrites*. Acid and gas produced from *glucose*, *galactose*, *fructose*, *maltose* and *sucrose*.

Preparation : (a) Under Nosode Group N-I suspension consisting of 20 x 10^{10}cfu/mL is obtained. Proceed according to "General Instruction for preparation of Nosode" group N-I to obtain 1x.

(b) Trituration 2x Drug strength 1/100

(a) On spraying with 5% methanolic KOH and heating, seven spots appear at Rf 0.1, 0.15, 0.22, 0.34, 0.45 (all yellow), 0.66 and 0.90 (light black).

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 321.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Psoralea Corylifolia in *coarse powder* 100 g

Strong Alcohol in sufficient quantity

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with D*ispensing Alcohol.*

Storage : Below 3x should be preserved in amber coloured bottles.

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PSORALEA CORYLIFOLIA
(Psoral. cor.)

Botanical name : *Psoralea corylifolia* L. **Family**: Fabaceae

Common names : *Hindi*: Babchi, Bakuchi; *English*: Babchi, Purple Fleabane.

Description : An erect annual herb, up to 1m high, branches firm, gland-dotted. Leaves simple, 2.5 to 7.5 cm long, roundish repand-toothed, firm, glabrescent, both sides with conspicuous black glandular dots. Flowers 10 to 30, purple, in dense long-peduncled heads, bracteate. Calyx 3 mm, teeth lanceolate, lowest one longest, hairy outside; corolla purple, little exserted, nearly twice as long as calyx; stamens 10, diadelphous, anthers small; ovary almost sessile, 1-ovuled, style filiform, stigma terminal. Fruit a pod, one seeded, small, sub-globose, glabrous, black.

Distribution : Throughout India.

Part used : Seeds.

Macroscopical : Dark chocolate to almost black with pericarp adhering to the seed coat, 3 to 4.5 mm long, 2 to 3 mm broad, ovoid-oblong or bean-shaped, somewhat compressed, glabrous, rounded or mucronate, closely pitted, non-endospermic, odour indistinct, taste bitter, oily, unpleasant and acrid; ovule campylotropous.

Microscopical : The pericarp shows prominent ridges and depressions, consisting of collapsed parenchyma and large secretory cells containing oleoresinous matter; testa consists of an outer layer of palisade-like cells, a layer of cells having much thickened inner tangential and basal radial walls, 2 or 3 layers of parenchyma; cotyledons of polyhedral parenchyma, with aleurone grains and oil globular.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC over activated slica gel 'G' plate using *chloroform:ethanol* (98.5:1.5 v/v) as mobile phase.

Stem: transection shows circular in out line with single layer of epidermis; hypodermis 1 or 2 layered collenchymatous; cortex parenchymatous; vascular bundles conjoint, collateral, encapped by sclerenchymatous patches above phloem and arranged in a ring; pith hollow.

History and authority : Proved by Franz and Lembke; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **8**, 256; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 944.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Ranunculus Acris in *coarse powder*	100 g
Purified Water	300 mL
Strong Alcohol	730 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, two parts *Purified Water* and seven parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

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RANUNCULUS ACRIS

(Ran. acri.)

Botanical name : *Ranunculus acris* L. **Family**: Ranunculaceae

Common names : *English*: Tall buttercup; *French*: Renoncule acre; *German*: Scharfhahenfuse.

Description : An annual herb; stem slender up to 1 m high, more or less pubescent, leafy mostly below the middle, the long branches bearing only a few widely separated greatly reduced leaves. Leaf reniform, deeply cleft into 3 broadly cuneate-obovate segments which are in turn incised or cleft into oblong to linear lobes. Flowers golden-yellow, about 2.5 cm across, regular, perfect; sepals spreading, ovate, villous beneath; petals 5, glabrous, glossy, broadly obovate, often retuse, 8 to 16 mm long, about twice as long as sepals; stamens numerous; carpels numerous in a head. Fruit an achene, borne on subglobose heads, flat, margined obliquely obovate, 2 to 3 mm long, beak 0.4 to 1 mm long.

Part used : Whole Plant

Distribution : Native of Europe and introduced in USA, found in meadows and fields.

Microscopical : Leaf: lamina in transection shows single layer of epidermis with thin cuticle; stomata anomocytic, confined to the lower surface; trichomes simple, unicellular, abundant on lower surface; mesophyll differentiated into 2 layered palisade and 4 or 5 layers of spongy parenchyma; midrib consists of parenchymatous ground tissue, single layer of collenchyma present below the lower epidermis; meristele conjoint, collateral, encircled by parenchymatous sheath; stomatal index 21.42 to 28.57 and palisade ratio 4.8 to 5.6.

Petiole: transection through the distal end shows arc-shaped outline with deep central notch; epidermis single layered; ground tissue parenchymatous, cells loosely arranged, vascular bundles conjoint, collateral, encapped by sclerenchymatous patches, surrounded by parenchymatous bundle sheath and arranged almost in a ring; pith hollow.

the root, consists of vessels, tracheids, wood parenchyma and wood fibres, vessels few, lignified, upto 350 µm in length and 50 µm in width or rarely more simple or bordered pits; medullary rays uni-or multiseriate; prismatic crystal of calcium oxalate and small latex cells with brown content, starch grains simple or 2 to 3 compound, spherical to sub-spherical present throughout; stone cells absent.

Identification : (a) A mixture of 1 mL of the mother tincture and 3 mL of dilute *acetic acid* fluoresces brightly under ultra-violet light (365 and 254 nm).

(b) To a cloudy mixture of 1 mL of the mother tincture and 2 mL of water add 0.1 mL of *iodine* solution, a brown precipitate is produced.

(c) A mixture of 1 mL of the mother tincture and 0.5 mL of nitric acid produces an intense red color.

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 329.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Rauwolfia Serpentina in *coarse powder*	100 g
Purified Water	200 mL
Strong Alcohol	824 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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RAUWOLFIA SERPENTINA
(Rau. serp.)

Botanical name : *Rauwolfia serpentina* (L.) Benth. ex Kurz.

Family: Apocynaceae

Synonym : *Ophioxylon serpentinum* L.

Common names : *Hindi*: Sarpagandha, Chotachand; *English*: Serpentina root.

Description : A small, erect, glabrous shrub, up to 1 m high with pale bark. Leaf whorled, 7 to 18 cm long by 1.25 to 5 cm wide, lanceolate or oblanceolate, acute or acuminate, tapering gradually into petiole, thin, pale beneath. Flowers white or pinkish, arranged in terminal or lateral corymbose cymes; peduncles about 2.5 to 5 cm long, pedicels red, bracts minute, lanceolate. Calyx 5-partite, glabrous, bright red, segment 2.5 mm long, lanceolate; corolla 5-lobed, lobes up to 12 mm long or rarely a little longer, tube slender, inflated or swollen a little above the middle, lobes much shorter than the tube, tube about 3 mm long, elliptic-oblong, obtuse; stamens 5, inserted on the corolla-tube; disc cup-shaped, membranous, slightly lobed; ovary 1 or 2 celled. Fruit a drupe, about 6 mm in diameter, purplish-black when ripe.

Distribution : Found in sub Himalyan ranges and Western Ghats of India.

Part used : Root

Macroscopical : Stout, thick, about 10 cm long and up to 22 mm in diameter, tortuous, surface slightly wrinkled, rough with coarse longitudinal markings, rarely branched, root bark grayish-yellow to brownish; wood pale yellow, fracture short irregular; odour indistinct; taste bitter.

Microscopical : Transverse section shows multi layered cork composed of alternating bands of 2 to 8 rows of small sized suberised cells and 2 to 5 rows of big lignified cells; phelloderm, tangentially elongated to isodiametric parenchyma cells; secondary phloem narrow, contains phloem parenchyma, sieve elements; secondary xylem, constitutes major part of

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RICINUS COMMUNIS
(Ric. com.)

Botanical name : *Ricinus communis* L. **Family**: Euphorbiaceae

Common names : *Hindi*: Arand, Erandi; *English*: Castor oil plant; *French*: Semence de ricin; *German*: Ricinussamen, Wunderbalm.

Description : A tall, glabrous and glaucous annual, sometimes shrubby or tree-like. Leaf alternate, broad, palmately lobed; lobes 7 or more, serrate. Flowers unisexual, rather large, in terminal sub-paniculate racemes; perianth simple and without any disc; the male flowers crowded in the upper portion of the inflorescence, the female flowers below. Male flower: calyx membranous, splitting valvately into 3 to 5 segments; stamens many, filaments connate and repeatedly branched, anthers with distinct distant subglobose divergent cells; pistillode none. Female flower: calyx spathaceous, caducous; ovary 3-celled; style entire, 2-fid or 2-partite; ovules solitary in each cell. Fruit prickly capsules of 2-valved cocci. Seed oblong, testa crustaceous, albumen fleshy; cotyledons broad, flat.

Distribution : Cultivated throughout India.

Part used : Ripe seed

Macroscopical : Rounded, oblong and somewhat flattened, 8 to 12 mm or more in length, with an arched dorsal surface and a nearly flat ventral surface; the width about two-thirds of the length and the thickness about one-third. Seed coat thin, brittle, smooth, glossy, varying in colour, grayish-brown to gray, mottled with reddish-brown or black spots and stripes. At one extremity of the seed, a prominent and usually pale coloured caruncle, from which the raphe runs along with ventral surface as a distinct line to the other extremity where it terminates in a raised chalaza. Caruncle removed easily, disclosing the hilum beneath as a dark spot. A delicate, silvery white membrane inside the seed coat surrounds a large, yellowish-white, oily endosperm, which encloses the embryo with two large, papery cotyledons. Almost odourless; taste oily, slightly acrid.

Microscopical : Transection shows hard testa, membranous tegmen, fleshy endosperms and embryo with thin, flat, broad, leafy cotyledon. Testa 6 to 8 cells thick, remain as a thin pulpy covering of the seed which dries up on maturity; outer epidermis composed of cuboid cells; mesophyll composed of loose, oblong cells; inner epidermis consists of shortly columnar cells, walls of which are not thick or lignified but bear small calcified deposits. Tegmen shows outer epidermis as palisade like cells, dark brown to black with closely pitted walls; inner epidermal cells with slightly band-like thickenings on the tangential walls; vascular traces present in tegmen in between outer and inner epidermal region having elongated parenchymatous cells. Endosperm consisting of oval, irregular cells, containing oil globules and abundant aleurone grains. Caruncle composed of thin-walled cells like testal mesophyll and covered by a shortly columnar epidermis.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a. Under UV light (254 nm), two spots appear at R_f 0.24 (blue), 0.57 (blue).

b. On exposure to Iodine vapors, four spots appear at R_f 0.24 (yellow), 0.39 (yellow). 0.57 (dark yellow), 0.87 (yellow).

History and authority : Introduced and Proved by Langier; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **8**, 400; Clarke, J.H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1012.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Ricinus Communis in *coarse powder* 100 g

Strong Alcohol in sufficient quantity

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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RICINUS FOLIA
(Rici. fol.)

Botanical name : *Ricinus communis* L. **Family**: Euphorbiaceae

Common names : *Hindi*: Arand, Erandi; *English*: Castor oil plant; *French*: Semence de ricin; *German*: Ricinussamen, Wunderbalm.

Description : A tall, glabrous and glaucous annual, sometimes shrubby or tree-like. Leaf alternate, broad, palmately lobed; lobes 7 or more, serrate. Flowers unisexual, rather large, in terminal sub-paniculate racemes; perianth simple and without any disc; the male flowers crowded in the upper portion of the inflorescence, the female flowers below. Male flower: calyx membranous, splitting valvately into 3 to 5 segments; stamens many, filaments connate and repeatedly branched, anthers with distinct distant subglobose divergent cells; pistillode none. Female flower; calyx spathaceous, caducous; ovary 3-celled; style entire, 2-fid or 2-partite; ovules solitary in each cell. Fruit prickly capsules of 2-valved cocci. Seed oblong, testa crustaceous, albumen fleshy; cotyledons broad, flat.

Distribution : Cultivated throughout India.

Part used : Leaf

Macroscopical : Leaf large, green, red and shining when young; palmately lobed; lobes 7 or more, serrate; lamina 13.5 to 35 cm long and 15 to 39 cm broad; petiole long, hollow inside, 10 to 30 cm long and 0.4 to 1 cm wide, with conspicuous glands.

Microscopical : Leaf: transection of lamina shows single layered epidermis with polygonal cells covered with thick cuticle; trichomes simple, unicellular, pointed, present only on upper surface; mesophyll differentiated into a single layered elongated palisade and compactly arranged 4 or 5 layers spongy parenchyma; midrib pronounced on both the surfaces but much on lower surface, 5 or 6 layers of collenchymatous cells towards the lower epidermis, 8 or 9 layers towards upper epidermis; meristele arc-shaped, xylem towards upper epidermis and phloem towards lower epidermis; ground tissue parenchymatous, contains rosette crystals of calcium oxalate abundantly. Stomata paracytic, present on both the surfaces.

Petiole: transection appears almost circular in outline; epidermis single layered surrounded by thick cuticle, 10 to 12 layers of collenchymatous hypodermis, large secretory ducts and small chlorenchymatous patches present in hypodermis; ground tissue parenchymatyous, 6 to 8 layers containing rosette crystals of calcium oxalate; vascular bundles conjoint, collateral, arranged in a ring, encapped by single layer of pericyclic sclerenchymatous fibres; pith broad, parenchymatous, trichomes absent.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out on percolated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (9.5:0.5 v/v) as mobile phase.

a. Under UV light (254 nm), six spots appear at R_f 0.12 (blue), 0.3 (light blue), 0.49 (yellow), 0.60 (light blue), 0.80 (light blue), 0.87 (blue).

b. Under UV light (366 nm), six spots appear at R_f 0.12 (blue), 0.3 (pink), 0.49 (red), 0.60 (orange), 0.80 (light yellow), 0.87 (light yellow).

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1013.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Ricinus Folia moist magma containing solids 100g and plant moisture 600 mL	700 g
Strong Alcohol	330 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, five parts *Purified Water* and four parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

walls considerably thick; 2 to 5 layers of thin-walled, brown, parenchymatous cells having vascular elements at the raphe region; endosperm single layered with radially elongated cells; embryo consisting of 1 or 2 layers of tangentially elongated cells followed by radially arranged, oval to isodiametric thick-walled storage parenchyma with starch grains.

Powder: Shows abundant oval starch grains with hilum at an end or in the centre, 12 to 32 µm by 12 to 28 µm; brown thick-walled cells of outer integument, 76 to 112 µm by 40 to 56 µm bearing irregular thickenings; oval to isodiametric colorless storage parenchyma cells, 72 to 88 µm in diameter; brown, oval parenchyma cells, 52 to 80 µm in diameter; a few tracheary elements and lignified cells present.

Identification : Under ultra-violet light (365nm), 2 mL of the mother tincture shows faint blue fluorescence, add 0.1 mL of *potassium hydroxide* solution. The color changes to a faint brown yellow.

History and authority : Proved by Hahnemann, Allen, T. F., *Encyclop. of Pure Mat. Med.,* 1874, **8,** 443; Hering, C., *Guiding Symptoms,* 1879, 9, 151; Clarke, J. H., *A Dict. of Pract. Mat. Med.,* 1901, **3**, 1036.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Sabadilla in *coarse powder*	100 g
Purified Water	200 mL
Strong Alcohol	824 mL

to make on thousand millilitres of the Mother Tincture.

(b) Potencies: 2 x and higher with *Dispensing Alcohol.*

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SABADILLA

(Sabadil.)

Botanical name : *Schoenocaulon officinale* (Schltdl. & Cham.) A. Gray ex Benth.

Family: Melanthiaceae

Synonyms : *Sabadilla officinalis* (Schltdl & Cham.) Standl.; *Asagraea officinalis* (Schltdl & Cham.) Lindl.; *Veratrum officinale* Schltdl. & Cham.

Common names : *English*: Sabadilla, Cevadilla; *French*: Sebadille; *German*: Sabadilla Saemen.

Description : A caespitose bulbous herb. Leaves linear, tapering to a point, even, smooth, entire, channeled above, carinate at the back, about 1.25 m long. Inflorescence a scape, naked, about the height of a man, quite simple, terminated by a raceme about 45 cm long. Lower flowers hermaphrodite and fertile; the upper ones male and sterile. Perianth deeply 6-parted, spreading, yellowish-white, permanent, having linear, thick, veinless, obtuse segments, 3 of which rather broader than the others; stamens 6, filaments somewhat clavate, those opposite the broad segments of the perianth longer than the others, and all longer than the perianth; anthers large, yellow, cordate, and obtuse; ovary formed of 3-cells, united by their sutures, stigma obscure. Fruit a capsule, tri-follicled. Seeds winged and wrinkled.

Distribution : Mexico, West Indies, Guatemala and Venezuala.

Part used : Seed

Macroscopical : Occurs as a mixture of loose seeds with papery capsules. Seeds brownish-black, narrowly oblong to lance-linear, somewhat curved, angular, with a beak at one end, rounded at the other, 5 to 8 mm in length and upto 2 mm in thickness; testa wrinkled and thin, internally showing a whitish, oily albumen with a small linear embryo at the rounded, basal end; odour indistinct, taste bitter and acrid.

Microscopical : In transection almost oval in outline and a little pronounced at the raphe region; seed coat consists of an outer layer of radially elongated palisade-like cells having only tangential

on a water bath. Add 0.2 mL of concentrated *ammonia* solution. A yellowish brown to yellowish red color is produced.

History and authority : Proved by Hahnemann; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **8,** 458; Hering, C., *Guiding Symptoms*, 1879, **9**, 165; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1050.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Sabina in *coarse powder*	100 g
Purified Water	112 mL
Strong Alcohol	903 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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SABINA
(Sabina)

Botanical name : *Juniperus sabina* L. **Family**: Cupressaceae

Common names : *English*: Savin; *French*: Sabine; *German*: Sadebaum.

Description : An evergreen shrubby tree, spreading horizontally or rising erect to the height up to 5 m with pale, reddish-brown, scaly bark. Leaf normally decussate, dark-green, triangular, with a sharp apical spine. Unisexual, dioeceous, small; male cone in catkins; female cones at the extremities of lateral branches.

Distribution : Temperate regions of Northern Hemisphere.

Part used : Stem and Leaf

Macroscopical : The young twigs, 1 or 3 cm long and 1 or 2 mm thick, densely covered with 4 rows of appressed, scale-like, imbricate and rhomboid leaves, each about 2 mm long and with an oil gland directly under its dorsal surface. Odour strong, disagreeable and taste bitter.

Microscopical : Transection of leafy twig elliptical in outline with a notch in the middle which includes circular stem in middle and two adnate triangular leaves on each side of notch. Epidermis single layered of thick and beaded walled cells covered with cuticle; hypodermis single layered of thick-walled fibrous cells; transfusion tissue irregularly oriented, parenchymatous; contains large, oval, resin canal on both the sides surrounded by epithelial cells; stele in the centre, conjoint, collateral, arranged in a ring; xylem fibres present. Stomata deeply sunken with lignified guard cells; minute prisms of calcium oxalate present in the transfusion and cuticle region.

Identification : (a) To 1 mL of the mother tincture add 1 mL of distilled water. A milky turbidity is produced.

(b) To 5 mL of the mother tincture add 5 mL of water and 5 mL of lead acetate solution; shake and filter. Shake the filtrate with 5 mL of *ethyl acetate*, then collect the organic phase, add 0.3 mL of *nitric acid* and evaporate to dryness

vascular bundles separated from each other by short medullary rays; pith very broad of thin-walled parenchyma cells containing starch grains abundantly; laticiferous ducts either isolated or arranged in chains, containing orange-red, red or reddish-brown latex, scattered among cells of the cortex, pith and medullary rays.

Identification : 0.5 mL of the mother tincture shows orange fluorescence in ultra-violet light at 365 nm. Add 0.2 mL of dilute *hydrochloric acid*. The solution now shows red fluorescence. Add 0.5 mL of dilute *sodium hydroxide* solution, a brown precipitate is produced.

History and authority : Proved by Downey and Bute; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **8**, 481; Hering, C., *Guiding Symptoms*, 1879, 9, 197; Clarke, J. H., *A. Dict. of Pract. Mat. Med.*, 1901, **3**, 1076; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 244.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Sanguinaria Canadensis in *coarse powder*	100 g
Purified Water	400 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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SANGUINARIA CANADENSIS
(Sang. can.)

Botanical name : *Sanguinaria canadensis* L. **Family**: Papaveraceae

Synonym : *Sanguinaria grandiflora* Rosc.

Common names : *English:* Blood root; *French:* Sanguinaire du Canada; *German:* Blutwurzel.

Description : A perennial, acaulescent herb with a red, cylindrical, prostrate rhizome, 2.5 to 10 cm long, 6 to 18 mm thick, slightly-branched, with fibrous root beneath, and having an abundant, red-orange, acid juice. Leaves arising from each bud of the rhizome, orbicular in outline, 5 to 9 palmately lobed, lobes undulate or coarsely toothed, on long red-orange coloured petioles, glabrous, pale green above, bluish white beneath, with orange coloured veins. Flowers white, quadrangular in outline, showy, 2.5 to 4 cm in diameter on one flowered, naked scape 15 cm high, bud erect; petals 8, 4 usually longer; stamens numerous, golden, not crumpled. Fruit a capsule.

Distribution : USA and Canada.

Part used : Rhizome

Macroscopical : The drug occurs in entire or broken, somewhat dorsiventral flattened pieces. Rhizome more or less cylindrical, somewhat vertically compressed, simple or branched, 2 to 7 cm in length and 5 to 16 mm in diameter, externally brown, internally red, slightly annulate from leaf scars, on its upper surface a few stem scars and on lower surface and lateral surfaces, numerous intact or broken filiform roots and also root scars; fracture short and uneven; odour slight; taste bitter and acrid.

Microscopical : Transverse section shows single layered epidermis of thin-walled cells; cortex consisting 10 to 15 rows of parenchymatous cells with thin walls, containing numerous small spheroidal, ovoid or plano-convex starch grains, and occasionally globules of fixed oil; a comparatively narrow circular zone of numerous small, collateral, open, fibro-

A) Under U.V. light four spots appear at R_f 0.18, 0.27, 0.32 (all yellow) and 0.75.

B) On spraying with *Anisaldehyde Sulphuric acid* reagent eight spots appear at 0.08, 0.12, 0.20, 0.27, 0.32, 0.65, 0.70 and 0.77 (all dark brown).

History and authority : Proved by Hahnemann, *Mat. Med. Pura*, 1830, 2, 452; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **8**, 526; Clarke, J. H., A *Dict. of Pract. Mat. Med.*, 1901, **3**, 1112.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Sarsaparilla in *coarse powder*	100 g
Purified Water	500 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four parts *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

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SARSAPARILLA
(Sarsap.)

Botanical name : *Smilax regelii* Killip & C. V. Morton
Family: Liliaceae

Synonyms : *Smilax sarsaparilla* L.; *Smilax officinalis* Kunth

Common names : *English*: Wild Liquorice; *French:* Salseparielle; *German:* Sarsaparille.

Description : A large, perennial climber. Rhizome underground, large, short, knotted, with thickened nodes and roots spreading 2 to 2.5 m. Stem erect, semi-woody, with very sharp prickles of about 1.3 cm. Leaf large, alternate, stalked, almost evergreen with prominent veins, 7 nerved, mid-rib very strongly marked.

Distribution : Costa Rica, Mexico, Ecuador, Honduras, Peru and Jamaica.

Part used : Rhizome and Root

Macroscopical : Root longitudinally wrinkled, about 3 mm in thickness, dark reddish-brown with numerous branching rootlets, tough, flexible, not breaking easily even when bent double. Odourless; taste slightly bitter.

Microscopical : Root in transection shows strongly lignified cells of hypodermis, with uniformly thickened walls; dark reddish-brown parenchymatous cortex of thin-walled cells and without any starch, some cells contain bundles of acicular crystals of calcium oxalate embedded in mucilage; central stele consisting of a ring of yellowish wood with large radially arranged vessels upto 15 to 20 µm wide; white starchy pith of round-rectangular parenchymatous cells with pitted walls.

Identification : Evaporate 20 mL of Mother Tincture on water bath to remove alcohol and basify with 01 mL ammonia. Extract the residue with 3 x 20 mL *chloroform* and concentrate the chloroform extract to 2 mL.

Carry out TLC study of mother tincture on silica gel 'G' plate using *chloroform: methanol* (9:1, v/v) as mobile phase.

leaf to other allied species; larger veins accompanied by rhomboid and rosette crystals of calcium oxalate while thinner veins do not; vein-islet number 20 to 23 per sq. mm; palisade ratio on upper surface 4 to 12 and on lower surface 2.5 to 10.5; stomatal index on both the surfaces 17.1 to 20.

Identification :

Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on percolated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (9.5:0.5 v/v) as mobile phase.

a. Under UV light (254 nm), Nine spots appear at R_f 0.10 (brown), 0.15 (blue), 0.23 (yellow), 0.26 (yellow), 0.35 (yellow), 0.47 (yellow), 0.64 (yellow), 0.78 (brown), 0.92 (yellow).

b. Under UV light (366 nm), Nine spots appear at R_f 0.10 (red), 0.15 (red), 0.23 (red), 0.26 (red), 0.35 (blue), 0.47 (pinkish red), 0.64 (pinkish red), 0.78 (pinkish red), 0.92 (pinkish red).

History and authority : Proved by Wigan, Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **8**, 599; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1157; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 250.

Preparation :

(a) Mother Tincture Ø — Drug strength 1/10

Senna in *coarse powder*	100 g
Purified Water	500 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four parts *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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SENNA
(Senna)

Botanical name : *Senna alexandrina* Mill. **Family**: Fabaceae

Synonyms : *Cassia senna* L.; *C. angustifolia* Vahl

Common names : *Hindi:* Sana: *English*: Indian Senna; *French:* Folioles de sene; *German:* Senneblatter.

Description : A shrub or undershrub with pale sub-terete or obtusely angled, erect or ascending branches. Leaves usually 5 to 8-jugate; leaflets lanceolate. Racemes axillary, erect, laxly to many-flowered, usually considerably exceeding the subtending leaf. Bracts membranous, ovate or obovate, caducous. Sepals obtuse, membranous. Legume flat, 15 to 17 mm in breadth. Seeds obovate, cuneate, compressed; cotyledons plane.

Distribution : Cultivated in India.

Part used : Leaf

Macroscopical : Yellowish-green (distinguishing character from allied species), about 2.5 to 6 cm long and 7 to 8 mm wide, uniformly lanceolate, less conspicuously asymmetrical, less pubescent and firmer in structure than allied species. Odour slight; taste mucilaginous, slightly bitter and characteristic.

Microscopical : Leaf: lamina in transection shows isobilateral structure; epidermis single layered, consisting of polygonal, tubular cells; stomata paracytic type, present on both sides in about equal number; many epidermal cells contain mucilaginous deposition; trichomes unicellular, conical, thick-walled, with warty cuticle, curved near the base, 70 to 260 µm long; having single layer of palisade beneath each upper and lower epidermis; palisade of upper side longer than the lower one, with spongy tissue in between; in midrib, palisade continuous only on upper surface; 2 to 3 layers of collenchyma below the lower epidermis; ground tissue of 3 to 4 layers of parenchymatous cells; meristele arc-shaped, encapped with sclerenchymatous fibers on both the sides and surrounded by parenchymatous sheath containing prismatic crystals of calcium oxalate which differs senna

differentiated into single layered palisade and 3 to 5 layers of spongy parenchyma with large intercellular spaces; some cells of palisade and spongy tissues contain dark groups of micro crystals near the vein; midrib much prominent on lower surface, palisade cells not continuous; 1 or 2 layers of collenchymatous tissue on both sides; ground tissue parenchymatous; meristele arc-shaped, vascular bundle consists of radially arranged xylem and phloem; small patches of sclerenchymatous fibres, palisade ratio 2 to 4; vein islet number 7 to 10 per sq mm.; stomatal index 12 to 13 on upper epidermis and 22 to 23 on lower epidermis.

Petiole: transection horse-shoe shaped in outline; epidermis single layered of oval or tangentially elongated cells, covered with cuticle; 3 to 4 layers of collenchyma; ground tissue parenchymatous contains microsphenoidal and prismatic crystals of calcium oxalate; 3 arc-shaped large vascular bundles present in centre and two small subsidiary bundle present in each projection, central vascular bundle consists of radially arranged xylem and phloem towards the periphery; small patches of sclerenchymatous fibres. Trichomes both glandular and non glandular types as like on lamina.

Stem: transection circular in outline having two small notches on opposite sides; epidermis single layered of cubical to barrel-shaped cells, covered with thick cuticle; followed by single layered chlorenchymatous cells; cortex composed of 2 or 3 layers of collenchymatous cells and 6 to 9 layered in angles (notch); followed by parenchymatous cells, containing microsphenoidal and prismatic crystals of calcium oxalate and oval to round starch grains of 3.8 to 8.8 μm in diameter; endodermis single layered; pericycle consists of small irregular sclerenchymatous patches of 2 to 5 cells; vascular bundles conjoint, collateral; cambium 2 to 3 layered; xylem vessels arranged radially; pith parenchymatous, sometimes contains prismatic crystals of calcium oxalate. Trichomes both non glandular and glandular types.

Root: transection circular in outline; shows 2 or 3 layers of elongated cork cells followed by parenchymatous cortical region, cells usually large, elongated, thin-walled, contains oval to rounded starch grains, 2.5 to 11 μm in size, microsphenoidal crystals of calcium oxalate and small patches of sclerenchymatous fibres; phloem consists of

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SOLANUM NIGRUM

(Sol. nig.)

Botanical name : *Solanum nigrum* L. **Family**: Solanaceae

Common names : *Hindi*: Makoi; *English*: Black nightshade, Garden nightshade, *French*: Provtard Noire; *German*: Schwarzer, Nachtschatten.

Description : A variable annual herb, 30 to 60 cm high. Stem erect, green, angular, glabrous or more or less pubescent, much divaricately branched. Leaves cauline, simple, alternate, dull green, thin, ovate or ovate-lanceolate, sub-acute or acuminate, glabrous, entire to sinuate toothed, cuneately narrowed to the base, 2.5 to 9 cm long 2 to 5 cm broad with long petiole, exstipulate. Flowers small, in extra-axillary, sub-umbellate 3 to 8 flowered cyme; peduncle 6 to 20 mm long, slender; pedicels 6 to 10 mm long, slender; calyx 3 mm long, glabrous, hairy, lobes 5, oblong, obtuse, 1.25 mm long; corolla 4 to 8 mm long, white or pale-violet, divided more than half way down into 5 oblong subacute lobes, filaments short, flattened, hairy at base, anthers 2.5 mm long, yellow, oblong obtuse, notched at apex; ovary superior, globose, glabrous, style simple, cylindrical, hairs at base, stigma bilobed. Fruit a berry, about 6 mm in diameter, globose, purplish-black, sometimes red or yellow, smooth, shining. Seeds discoid, 1.5 mm in diameter, minutely pitted, yellow.

Distribution : Throughout India

Part used : Whole plant

Microscopical : Leaf: transection of lamina shows single layered upper and lower epidermis with rugose anticlinal walls, composed of oval to tangentially elongated cells covered with thin cuticle, cells of lower epidermis smaller in size; Trichome both glandular and non glandular types present on both surfaces, non-glandular trichomes uniseriate, 2 to 3 cells, unbranched, conical, warty; glandular hairs not numerous, and two types (i) short, with unicellular stalk and multicellular secretory head, rounded to oval in shape (ii) long, with 2 to 4 celled stalk and unicellular secretory head, very rare. Stomata anisocytic, 19 x 25 µm to 17 x 37 µm in size; more abundant in lower surface; mesophyll

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SOLANUM XANTHOCARPUM
(Sol. xan.)

Botanical name : *Solanum virginianum* L. **Family**: Solanaceae

Synonyms : *Solanum xanthocarpum* Schrad. & H. Wendl., *S. surattense* Burm. f.

Common names : *Hindi:* Kateli; *English:* Yellow-berried night shade.

Description : A very prickly, diffuse, bright-green perennial herb, somewhat woody at the base. Stem zigzag, branches numerous, the younger ones clothed with dense stellate tomentum; prickles compressed, straight, yellow, glabrous and shining, often exceeding 1.3 cm in length. Leaves 5 to 10 cm in length and 2.5 to 5.7 cm in breadth, ovate or elliptic, sinuate or sub-pinnatifid, obtuse or sub-acute, stellately hairy on both sides, sometimes becoming nearly glabrous with maturity, armed on the mid-rib and often on the nerves with long, yellow, sharp, prickles, base usually rounded and unequal sided; petioles 1.3 to 2.5 cm long, stellately hairy and prickly. Flowers in extra-axillary few flowered cymes, sometimes reduced to a single flower; peduncles short, pedicel short, curved, stellately hairy. Calyx nearly 1.3 cm long, densely hairy and prickly, tube short, lobes 11 mm long, linear-lanceolate. Ovary ovoid, glabrous, style glabrous. Fruit a berry, 1.3 to 2 cm in diameter, yellow or white with green veins, surrounded by the enlarged calyx. Seeds glabrous, 2.5 mm in diameter.

Distribution : Throughout India

Part used : Whole plant

Microscopical : Leaf: transection shows single layer of upper and lower epidermis covered with thick cuticle with anisocytic stomata and stellate trichomes on both the surfaces; mesophyll differentiated into single layer of palisade and 4 to 6 rows of spongy parenchyma; in midrib 3 or 4 layers of collenchymatous cells underneath both the epidermis; stele arc-shaped, 1 large bicollateral vascular bundle in central and 2 small bundles on lateral side; ground tissue parenchymatous contains microsphenoidal crystals of calcium oxalate.

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polygonal cells, filled with starch grains; xylem composed of vessels and parenchyma; vessels arranged radially; rays composed of thin-walled, radially arranged parenchyma cells.

Identification : 10 mL of Solanum nigrum mother tincture was concentrated to half its original volume on a water bath and on cooling 20 mL of distilled water was added. It was made alkaline with 1 mL of 25% ammonia solution. The contents of the evaporating dish was transferred to separating funnel and was extracted with 20 mL of chloroform in three steps (10 mL, 5 mL & 5 mL). The chloroform extract was concentrated and was used for spotting which were allowed to run in *chloroform : methanol* (9:1 v/v) as the solvent system. The developed plate was sprayed with iodine in carbon tetra-chloride solution which gave two brownish yellow spots at R_f 0.64 & 0.59.

History and authority : Proved by Pihan Dufeilly; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **9**, 57; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1208.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Solanum Nigrum moist magma containing solids 100 g and plant moisture 400 mL	500 g
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture; three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

mL. Carry out TLC over silica gel plate using *chloroform: methanol* (9:1) as mobile phase. Under UV light (254 nm) three spots appear at R_f 0.93, 0.70 (both red) and 0.33 (blue). After spraying the plate with *antimony trichloride reagent* three spots appear at R_f 0.91 (brown), 0.81(brown), 0.44 (violet).

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 267.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Solanum Xanthocarpum moist magma containing solids 100 g and plant moisture 330 mL	430 g
Purified Water	220 mL
Strong Alcohol	480 mL

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

Petiole: transection plano-convex in outline with two lateral projections; epidermis single layered with stellate trichomes; hypodermis 3 or 4 layers of chlorenchymatous; vascular bundle 3, one large, arc-shaped conjoint, collateral vascular bundle in the central covered with parenchymatous bundle sheath, two small subsidiary bundles in each projections; ground tissue parenchymatous, contains microsphenoidal crystals of calcium oxalate

Young stem: Transection circular in outline with 1 or 2 lateral wings; epidermis single layered of cubical to barrel shaped cells covered with thick cuticle and stellate trichomes; hypodermis of narrow bands of collenchymatous cells; cortex wide, parenchymatous; endodermis of barrel shaped cells showing casparian strip on radial walls followed by single layered pericycle; stele in continuous ring, vascular bundles bicollateral; pith large, parenchymatous contains simple starch grains.

Mature stem: transection shows 6 to 12 layers of suberised cork; secondary cortex very wide, 7 to 11 layers of parenchymatous cells, contains stone cells and simple starch grains of 4 to 5 μm in diameter; followed by a band of pericycle fibre; phloem consists of sieve tissue, phloem parenchyma and uni-to biseriate medullary rays; cambium distinct; xylem wide, isolated or radially arranged xylem vessels, parenchyma and medullary rays; inner phloem distinct; pith hollow. Microsphenoidal crystals of calcium oxalate present.

Root: Young root: transection shows epidermis of cubical to radially elongated cells; cortex 3 to 5 layers of parenchymatous cells; endodermis single layered; pericycle isolated or a group of stone cells, enclosing a di-to tri-arc stele. In mature root, cork 3 to 6 layered; phellogen single layered; phelloderm 6 to 15 layered, parenchymatous with a few scattered stone cells and microsphenoidal crystals of calcium oxalate; secondary phloem with patches of stone cells in outer and middle region; cambium 3 to 5 layered of rectangular cells; wood composed of vessels, tracheids, fibres, fibre-tracheids, and ray cells, all lignified.

Identification : Evaporate 20 mL of the mother tincture on water bath to remove *alcohol*. Extract the aqueous layer with 3 x 20 mL of *chloroform* and concentrate the *chloroform* extract to 2

Flowering spike: transection shows single layer of epidermis; cortex 8 to 10 layers of collenchymatous cells; endodermis, single layers of barrel shaped cells; vascular bundle arranged in a ring, bicollateral and encapped by sclerenchymatous tissue; pith large parenchymatous.

Identification : Extract in 60% alcohol and test as follows:

(a) Warm 3 mL of extract with 50 mg of *resorcinol* in hydrochloric acid and cool; a dark red turbidity is produced.

(b) Evaporate 5 mL of the extract and dissolve in small quantity of alcohol. Add a little of magnesium powder followed by concentrated hydrochloric acid; a pink color is produced.

(c) Take 1 mL of the extract, 10 mL of water and 1 drop of sodium hydroxide solution; a yellow precipitate is produced.

(d) Evaporate 20 mL of the mother tincture on water bath to remove alcohol. Extract the aqueous layer with 3 x 20 mL of chloroform and concentrate the chloroform extract to 2 mL. Carryout TLC over activated silica gel 'G' plate using *chloroform: methanol* (9:1 v/v) as mobile phase, under UV light two spots appears at R_f 0.91, 0.66 (both blue). After spraying the plate with antimony trichloride four spots appear at R_f 0.70, 0.54 (both brown) 0.41 (violet) and 0.25 (brown).

History and authority : Introduced by Rademacher and Gucken; Clarke, J.H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1219.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Solidago Virgaurea in *coarse powder*	100 g
Purified Water	400 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

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SOLIDAGO VIRGAUREA
(Sol. vir.)

Botanical name : *Solidago virga-aurea* L. **Family**: Asteraceae

Common names : *English:* Goldenrod; *French:* Verge d' or *German:* Goldrute.

Description : A deciduous, perennial herb, 30 to 90 cm in height with an oblique, thin rhizome. Radical leaves 5.0 to 5.5 cm wide, elliptical, acute, tapering into a petiole, slightly serrate, the cauline ones lanceolate, sessile or narrowed into margined petioles. Flowers in dense terminal, narrow and often interrupted thyrsus, 20 to 30 cm long, bracts of the involucre acute or acutish.

Distribution : Alpine districts of North New England, Northern United State and Europe.

Part used : Flowering top

Macroscopical : Inflorescence a dense, rather narrow, often interrupted thyrsoid or a terminal panicle with ascending branches upto 25 cm long; involucre 4.5 to 8 mm; bracts of the involucre acute to acutish, greenish-yellow, linear, glabrous slightly downy, with scarious margin; capitula or head not secund, 6 to 10 mm, short-stalked; florets all yellow; ray floret 6 to 12, in single rows, all female or neuter; disc-floret 10 to 30, hermaphrodite; leaves on inflorescences stalked with numerous divergent, often indistinct lateral veins.

Microscopical : Leaf: transection of lamina shows single layer of epidermis with thin cuticle; stomata anomocytic more frequent on lower surface; two types of trichomes present on both the surfaces, (i) uniseriate, multicellular, 4 to 6 celled, and (ii) with single basal cell, and terminal elongated thin cells whip like in shape; mesophyll not differentiated, contains only compactly arranged parenchyma; midrib consists 3 to 4 layered of collenchyma below the lower epidermis and 2 to 3 layers collenchyma below upper epidermis; ground tissue parenchymatous; meristele a central large vascular bundle and two small bundles on lateral sides, conjoint, collateral and encapped with sclerenchymatous tissue.

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SYMPHYTUM OFFICINALE
(Symph. of.)

Botanical name : *Symphytum officinale* L. **Family**: Boraginaceae

Common names : *English:* Comfrey; *French:* Consoude; *German:* Beinwurz.

Description : An erect, perennial herb, 0.5 to 1.0 m high. Stem branched, strongly winged. Leaves decurrent, radical and lower cauline, large, 15 to 20 cm long, petiolate, oval-lanceolate, hairy; stem leaves smaller, oblong-lanceolate, sessile or short petiolate. Inflorescence terminal, scorpiod cymes. Flowers numerous, white, yellowish-purple, pink or purple-violet, corolla 5, tubular, campanulate, 12 to 18 mm long with short, reflexed petiole lobes, calyx 5, fused at the base, narrow, tri-angular and hairy; stamens 5, inserted at the summit of corolla-tube. Fruit a nutlet, 4, oblique, ovoid, brown, shining, smooth or slightly wrinkled. Odour indistinct; taste sweet, mucilaginous.

Distribution : Native of Europe.

Part used : Root

Macroscopical : Cylindrical pieces of about 10 to 40 mm in length and 5 to 10 mm in diameter, externally nearly black and exhibits glistening crystals on the surface, strongly wrinkled longitudinally. Fracture short; fractured surface grayish-white and horny. Odourless; taste mucilaginous.

Microscopical : Transection shows 6 to 8 layers of cork cells; cortex 4 to 6 layers of oval, isodiametric parenchymatous cells; a large zone of secondary phloem; 5 to 6 layers of thin-walled cambium, separating xylem and secondary phloem; xylem radiating with broad parenchymatous medullary rays, vessels with scalariform thickening; solitary or in groups of 3 or 4, scattered or radially arranged in xylem parenchyma; primary xylem diarch and exarch; starch grains simple or compound, present in parenchymatous cells.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

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SYZYGIUM JAMBOLANUM

(Syzy. jam.)

Botanical name : *Syzygium cuminii* (L.) Skeels **Family**: Myrtaceae

Synonyms : *Syzygium jambolanum* (Lam.) DC.; *Eugenia jambolana* Lam.; *Myrtus cumini* L.

Common names : *Hindi*: Jamoon, Jambu; *English*: Black plum, Java plum; *French*: Jambol, Jamlongue.

Description : A large, evergreen, glabrous tree up to 30 m high; bark gray or brown, thick, slightly rough on old stem with shallow cracks and depressions. Leaves coriaceous, variable, 6 to 11 cm long and 4 to 6 cm broad, lanceolate, elliptic-oblong or broadly ovate-elliptic, acute, acuminate or subobtuse, smooth and shining above, pellucid-dotted, slightly narrowed at the base, main nerves slender, fine, prominent on the lower surface; secondary and intermediate nerves very fine, close, numerous and nearly straight; petiole 1 to 2.5 cm long, channelled. Inflorescence panicled cyme, usually axillary. Flowers small, hypanthium, dirty white to pinkish, fragrant, 5 to 7 mm across, sessile or shortly pedicelled, arranged mostly in threes in trichotomous panicles, usually appear from the scars of fallen leaves, but sometimes in leaf-axils. Calyx gamosepalous, 5 mm long, shortly turbinate, limb cup-shaped, yellow inside, truncate or obscurely 4-lobed; corolla united into a thin membranous calyptra, dirty whitish to pinkish with yellow at throat; stamens many, staminal disc absent; ovary inferior, style filiform, stigma small. Fruit a berry, variable in size from a pea to a pigeon's egg, globose or oblong, dark-purple, smooth, pulpy, juicy, crowned with the truncate calyx-limb; 1 seeded.

Distribution : Throughout India.

Part used : Seed

Macroscopical : Stony, exalbuminous with straight, curved or twisted embryo.

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over activated silica gel 'G' plate using *chloroform: acetic acid* (48:2 v/v) as mobile phase.

On spraying with 10% sulphuric acid and heating, eight spots appear at Rf 0.1, 0.2, 0.31, 0.41, 0.53, 0.63, 0.78 and 0.93 (all brownish black).

History and authority : Proved by Macfarlan, Hering, C., *Guiding Symptoms*, 1879, **10**, 209; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1340; Anshutz, E. P., *New Old and Forgotten Remedies*, 1996, 489.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Symphytum Officinale in *coarse powder*	100 g
Purified Water	500 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four part *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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TABACUM
(Tabac.)

Botanical name : *Nicotiana tabacum* L. **Family**: Solanaceae

Common names : *Hindi:* Tambaku, Tamaku: *English:* Tobacco; *French:* Tabac; *German*: Tabak.

Description : An annual, herbaceous or sometimes of longer duration and somewhat shruby at base, viscid-pubescent, erect, branching above. Leaf large, often 30 cm or longer, oblong-lanceolate, acuminate, sessile, lower ones decurrent and half-clasping. Flowers 4 to 5 cm long, pedicelled, bracteate, in short many-flowered, panicled racemes. Calyx oblong, with lanceolate, acute unequal segments; corolla wooly, funnel-shaped, throat somewhat swollen, rose-coloured or red, limb with acute lobes, green at the base of the tube. Fruit a capsule, ovoid, 18 mm long, almost equal to the calyx.

Distribution : Cultivated in India.

Part used : Leaf

Macroscopical : Leaf simple, sessile, hairy, acuminate, oblong-lanceolate, or elliptic, about 7 to 22 cm long and 4 to 7 cm broad, the lower ones semi-amplexicaul, yellowish-green in upper surface, dark green in lower surface; odour characteristic, taste bitter.

Microscopical : Transection of lamina shows single layer of both upper and lower epidermal cells, cell walls of upper epidermis slightly straight where as that of lower epidermis slightly wavy; anisocytic stomata; non glandular and glandular trichomes; non glandular trichomes (a) uniseriate multicellular and simple; glandular trichomes, i). with unicellular head and multicellular stalk, ii) with multicellular head and unicellular stalk, iii) with multicellular head and multicellular stalk; mesophyll differentiated into single layer of palisade and 4 to 6 layered spongy parenchyma. Midrib pronounced on both the surfaces but much on lower surface; epidermis bears abundant hairs on upper surface; 2 to 3 layers of collenchyma present below upper epidermis; meristele arc-shaped, xylem towards lower surface and

Microscopical : Transection almost circular in outline; seed coat differentiated into testa and tegmen. Testa shows an outer epidermal layer of barrel shaped cells and a few ducts, followed by a zone of irregularly oriented parenchyma, with scattered vascular bundles and a few rosette crystals of calcium oxalate; tegmen consists of parenchyma and contains irregularly distributed macrosclereids and brachysclereids, in the inner most zone vascular bundles present, endodermis made up of columner cells; cotyledon of a single layered of epidermis; followed by a zone of parenchyma containing large secretory ducts, elliptic starch grains of 1 to 2 μm in diameter with star-shaped hilum and some aleurone grains; 2 to 3 layers of concentric lamellae.

Identification : Carry out TLC of chloroform extract of Mother Tincture on silica gel 60 F254 pre-coated plate, Merck, at room temperature. The TLC plate was developed in *chloroform-methanol* (17:3, v/v) as solvent system and visualized in UV short and long wave length and also in day light. The R_f values of the spots observed under UV light (254 nm) at 0.3, 0.39, 0.48, 0.56, 0.63,0.69, 0.78, 0.83, 0.89 and 0.96 (all light blue); under fluorescent light (366 nm) at 0.48 (blue), 0.56 (blue), 0.63 (green), 0.69 (red), 0.89 blue) and 0.98 (blue) whereas, in day light at 0.3 (brown), 0.39 (brown), 0.48 (brown), 0.56 (brown), 0.63 (green), 0.69 (brown), 0.78 (brown) and 0.95 (yellow).

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1354; Blackwood, A. L., *Mat. Med., Theraputics and Pharmacology*, 1921, 573.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Syzygium Jambolanum in *coarse powder*	100 g
Purified Water	150 mL
Strong Alcohol	900 mL

to make one thousand millilitres of the Mother Tincture.

(c) Potencies: 2x and higher with *Dispensing Alcohol.*

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TARAXACUM
(Tarax.)

Botanical name : *Taraxacum officinale* Weber **Family**: Asteraceae

Common name : *Hindi*: Kanphul; *English*: Dandelion; *French*: Dent de Lion; *German*: Lowenzahn.

Description : A scapigerous herb; root stock perennial. Leaves radical, sessile, usually glabrous, spreading, variable in shape, generally oblong, 5 to 30 cm long, 1 to 6 cm broad, irregularly pinnatifid into usually backward directed lobes, lobes linear or triangular, acute, toothed, pointed downwards or rarely oblanceolate, nearly entire. Scape 5 to 20 cm long, slightly purple, hollow, glabrous or more or less villous, especially upwards. Head solitary, erect, 2.5 to 4 cm broad; involucral bracts biseriate, inner involucral bracts linear, 13 to 20, erect, reflexed, margin often white, tips usually thickened or hooked; outer bracts a little shorter and scarcely wider than the inner, ovate, erect or recurved; receptacle flat, naked. Flowers yellow, ligulate, spreading, 3 to 5 toothed, ribbed, narrow to the base, minutely spiny on the upper half. Fruit an achene, oblong, pale-brown, ribbed, spinulose in the upper part, muricate below, contracted into a very long beak. Pappus copious, white, soft.

Distribution : Native of Europe and found throughout the Himalaya at altitude of 300 to 5000 m.

Part used : Whole plant

Microscopical : Leaf: transection of lamina showing single layered epidermis, contains two types of trichomes (i) simple, uniseriate, with spatulate apical cell, (ii) occasional glandular with a spherical secreting cell; mesophyll differentiated into 2 layers of short and wide palisade and spongy parenchyma; in mid-rib, 2 to 3 layers of collenchymatous cells on both the side of epidermis; 10 separate collateral vascular bundles, arranged in an ellipse; ground tissue parenchymatous. Stomata anomocytic, 12 to 28 μm in size, present on both surfaces. Vein islet number 6.25 to 12.5 per sq. mm.

phloem towards upper surface and a few patches of supernumerary phloem present towards upper surface i. e. above xylem.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a) Under UV light (254 nm), nine spots appear at R_f 0.07 (brown), 0.12 (brown), 0.23 (brown), 0.36 (blue), 0.48 (blue), 0.56 (light blue), 0.72 (light blue), 0.85 (blue), 0.94 (light blue).

b) Under UV light (366 nm), eight spots appear at R_f 0.07 (yellow), 0.12 (yellow), 0.23 (yellow), 0.36 (yellow), 0.48 (blue), 0.56 (light green), 0.85 (green), 0.94 (light blue).

c) On exposure to Iodine vapors, nine spots appear at R_f 0.07 (brown), 0.12 (brown), 0.23 (brown), 0.36 (dark brown), 0.48 (light brown), 0.56 (light brown), 0.72 (light brown), 0.85 (dark brown), 0.94 (light brown).

History and authority : Introduced by Hartlaub and Trinks; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **9**, 467.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Tabacum in *coarse powder*	100 g
Purified Water	200 mL
Strong Alcohol	824 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

Caution : Not to be dispensed below 3x.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Taraxacum officinale moist magma containing solids 100 g and plant moisture 300 mL	400 g
Purified Water	200 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four parts *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

Scape: transection wavy in outline, single layered epidermis with uniseriate trichomes; followed by up to 3 layers of fairly compact collenchymatous cells; ground tissue parenchymatous having collateral vascular bundles, up to 32, arranged in a ring; hollow in the middle.

Root: transection shows external cork up to 4 layered, of tangentially-elongated cork cells with brownish contents, cork cambium present followed by cortex of several layers of tangentially-elongated cells containing inulin and laticiferous ducts; internal cork frequently found arising from secondary phellogens at different levels in cortical region; phloem a broad zone with brownish concentric layers of laticiferous ducts and sieve tubes alternating with whitish parenchyma containing inulin; cambium a few layers of meristematic cells; xylem with lignified wood fibers.

Rhizome: mainly differs from the root by showing a small pith in the center

Identification : Evaporate 20 mL of Mother Tincture on water bath to remove alcohol and basify with 01 mL ammonia. Extract the residue with 3 x 20 mL *chloroform* and concentrate the chloroform extract to 2 mL.

Carry out TLC study of mother tincture on silica gel 'G' plate using *chloroform: methanol* (9:1, v/v) as mobile phase.

A) Under U.V. light three spots appear at R_f 0.37, 0.62 and 0.72 (all light blue).

B) On spraying with *Anisaldehyde Sulphuric acid reagent* seven spots appear at 0.12, 0.22, 0.31, 0.35, 0.37 (blue), 0.62 and 0.72.

History and authority : Introduced and proved by Hahnemann, *Mat. Med. Pura*, 1830, **2**, 638; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **9**, 509; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1369.

by uniseriate rays; alternate zones of phloem parenchyma and phloem fibres, small rosette crystals of calcium oxalate present specially in neighboring cells of phloem fibres; occasional rosette crystals of calcium oxalate and brown pigment (tannin) present in parenchymatous cells of secondary cortex and phloem.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (9:1 v/v) as mobile phase.

(a) Under UV light (254 nm), nine spots appear at R_f 0.11 (light brown), 0.29 (blue), 0.38 (blue), 0.44 (blue), 0.5 (light brown), 0.58 (light brown), 0.73 (light brown), 0.82 (brown), 0.91 (brown).

(b) Under UV light (366 nm), six spots appear at R_f 0.29 (light blue), 0.38 (light yellow), 0.44 (light yellow), 0.5 (light yellow), 0.82 (light yellow), 0.91 (light blue).

(c) On exposure to Iodine vapors, nine spots appear at R_f 0.11 (light brown), 0.29 (brown), 0.38 (brown), 0.44 (brown), 0.5 (brown), 0.58 (light brown), 0.73 (light brown), 0.82 (light brown), 0.91 (brown).

History and authority : Ghose, S.C., *Drugs of Hindoosthan*, 1984, 286.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Terminalia Arjuna *coarse powder*	100 g
Purified Water	160 mL
Strong Alcohol	875 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

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TERMINALIA ARJUNA
(Term. arj.)

Botanical name : *Terminalia arjuna* Wt. & Arn. **Family**: Combretaceae

Synonym : *Terminalia glabra* Wt. & Arn.

Common names : *Hindi:* Arjun, Arjuna; *English:* White Murdah.

Description : A large, deciduous tree, reaching 25 m in height, with horizontally spreading branches; bark thick, smooth, greenish-white, flaxing often large, flat pieces. Leaves usually sub-opposite, 10 to 15 cm long and 4 to 7 cm broad, oblong, or elliptic-oblong, obtuse or sub-acute, pale dull-green above, pale brown beneath, shallowly crenate, serrate in the upper part or sometimes throughout, base rounded or cordate, often unequal sided, veins reticulate, pellucid; petioles 6 to 10 mm long, with 1 or usually 2 prominent glands at the top immediately below the leaves. Flowers sessile, in short axillary spikes or in terminal panicles; bracteole linear-lanceolate, shorter than the flower, caducous. Perianth glabrous, 4 mm long, mouth broadly companulate, teeth triangular; stamens 10, inserted on the calyx-lobe, biseriate, filament exserted; ovary inferior, 1-celled, stigma simple. Disk clothed with yellowish-red hairs. Fruit a drupe, 2.5 to 5 cm long, ovoid or obovoid-oblong, fibrous-woody, glabrous, dark-brown, with 5-hard projecting wings.

Distribution : Throughout India.

Part used : Bark

Macroscopical : The bark occurs as flat or slightly curved pieces of varying sizes, up to 15 cm or more in length, about 10 cm in width and 0.3 to 1 cm in thickness. Outer surface gray and smooth; inner surface light gray and finely striated; fracture short inner surface pinkish. Taste astringent.

Microscopical : Transection shows few layers of tangentially elongated cork; phellogen 2 to 4 layers of thin-walled cells; phelloderm narrow; secondary cortex broad, parenchymatous with small rosette of calcium oxalate crystals present frequently; phloem very broad, traversed

thickness, Merck, using *chloroform : methanol* (9.5:0.5 v/v) as mobile phase.

a. Under UV light (254 nm), seven spots appear at R_f 0.10, 0.19, 0.23, 0.34, 0.50, 0.65, 0.89 (all blue).

b. Under UV light (366 nm), seven spots appear at R_f 0.10 (light yellow), 0.19 (light yellow), 0.23 (light yellow), 0.34 (light yellow), 0.50 (light blue), 0.65(light yellow), 0.89 (orange).

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 293.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Terminalia Chebula moist magma containing solids 100 g and plant moisture 150 mL	250 g
Purified Water	250 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol;* 3x and higher with *Dispensing Alcohol.*

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TERMINALIA CHEBULA
(Term. ch.)

Botanical name : *Terminalia chebula* (Gaertn.) Retz. **Family**: Combretaceae

Common names : *Hindi*: Harar; *English*: Chebulic Myrobalan.

Description : A moderate sized, sometimes large, deciduous tree. Leaves not clustered, often sub-opposite, 10 to 18 cm, ovate or elliptic, usually acute, not acuminate, rounded at the base; petiole 2.5 cm long, often with glands at its summit. Spike terminal, often panicled. Flowers dull white, with an offensive smell, all hermaphrodite. Fruit a drupe, glabrous, pendulous, 2 to 4 cm long, ellipsoid or obovoid from a broad base, more or less 5-ribbed when dry due to the 5-ribbed endocarp.

Distribution : Found throughout India, chiefly in deciduous forests.

Part used : Semi-mature fruit

Macroscopical : Yellowish-brown, ovoid, 2 to 4 cm long and 1.3 to 2.5 cm wide, wrinkled longitudinally, carpel 5 to 6 ribbed longitudinally, hard and stony; in some, basal portion narrower and somewhat elongated on tapering; seed light yellow, 1.5 to 2.5 cm long, rough; pulp 3 to 4 mm thick, adhered to seed. Odourless; taste astringent, later sweetish.

Microscopical : Epicarp forms several layers of corky cells followed by thin-walled parenchymatous cells filled with starch grains; mesocarp of round parenchymatous cells, having brownish cell contents, stone cells, numerous rosette crystals of calcium oxalate and starch grains present. Isolated vascular strands and sometimes long strands of vessels intermingled with parenchymatous tissue, vessels with pitted thickening. Seed shows testa of single layer of large cubical cells followed by sclerenchyma; tegmen with outer and inner epidermis and 6 to 10 layers of parenchyma; cotyledons folded and contain aleurone grains and oil globules.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on percolated silica gel aluminum plate 60F-254, 0.25 mm

Root: transection shows cork; cork cambium; secondary cortex of parenchymatous cells; single layered endodermis; xylem consists of xylem parenchyma and ray cells; wide phloem zone composed of phloem parenchyma, ray cells and phloem fibers; pith absent.

Identification : Evaporate 25 mL of mother tincture on water bath to remove alcohol, extract with chloroform (3 x 20 mL). Concentrate the chloroform extract and carry out TLC on silica gel plate using *chloroform : methanol* (9 : 1 v/v) as solvent system. Under U.V. light (366 nm) four spots appears at R_f. 0.63 (blue), 0.76 (blue), 0.86 (red), 0.95 (blue). After spraying the plate with *antimony trichloride reagent* five spots appears at R_f. 0.50 (violet), 0.81 (brown), 0.86 (green), 0.91 (violet) & 0.95 (brown).

History and authority : Proved by Macfarlan and George; Hering, C., *Guiding Symptoms,* 1879, **10**, 304; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1416; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 267.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Thlaspi Bursa Pastoris moist magma containing solids 100 g and plant moisture 233 mL	333 g
Purified Water	200 mL
Strong Alcohol	600 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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THLASPI BURSA-PASTORIS
(Thlaspi)

Botanical name : *Capsella bursa-pastoris* (L.) Medik. **Family**: Brassicaceae

Synonym : *Thlaspi bursa-pastoris* L.

Common names : *English:* Shepherd's Purse; *French:* Bourse de Pasture; *German:* Hirtentasche.

Description : A glabrous or hairy herb with long and tapering root, 15 to 20 cm long, sparingly branched. Basal leaf oblong, 5 to 10 cm long, pinnately lobed, cauline leaf much smaller, lanceolate to linear, entire or denticulate, auriculate at base; recemes at anthesis congested, at maturity greatly elongate, often forming half the total height of the plant, pedicels at maturity widely spreading, 1 to 2 cm long. Flowers 2 mm wide. Calyx oblong, obtuse; corolla white, about twice as long as the calyx. Fruit obcordate-triangular, 5 to 8 cm long, the lateral margins straight or outwardly curved.

Distribution : Found throughout India.

Part used : Whole plant

Microscopical : Leaf: transection shows single layer of papillose epidermal cells with stellate trichomes; stomata anisocytic, on both the surfaces; mesophyll differentiated into 1 to 3 layers of palisade and 4 to 5 layers of loosely arranged spongy parenchyma cells; midrib having 1 to 3 conjoint, collateral vascular bundles with xylem towards the upper epidermis and phloem towards the lower epidermis; each vascular bundle capped on both sides by sclerenchymetous cells.

Stem: transection shows single layer of columnar epidermal cells; wide zone of cortex of parenchymatous cells; distinct endodermis; vascular bundles arranged in a ring, conjoint, collateral and open, primary bundles composed of xylem parenchyma, vessels, cambium and a fairly large phloem interrupted by ray cells; pericycle sclerenchymatous only above the primary phloem; secondary xylem and secondary phloem formed by inter-fascicular cambium; large pith of isodiametric parenchyma cells.

phloem in continuous ring associated with transfusion tissues; vascular strands also present in lamina-like projections.

Stem: cork 6 to 8 layers of thin-walled cells containing brown contents; two layered hypodermis of thick-walled cells; cortex parenchymatous, containing resin ducts and isolated scattered fibres; phloem consisting of alternate bands of phloem parenchyma and phloem fibres; wood large, vessels not present, autumn wood distinct; medullary rays 1 to 3 seriate; pith scanty.

Powder of leaves greenish to brownish-green; fragments of chlorenchyma; fragments of epidermis with broadly elliptical stomata from 25 to 40 µm in size, the guard cells having lignified walls; numerous thick-walled, lignified fibres with simple oblique pores.

Identification : (A) To 1 mL of the mother tincture add 5 mL of water. Turbidity is produced.

(B) To the mixture from test A add 0.2 mL of a 10 g/l solution of aluminium chloride and filter. Add to the yellow filtrate 0.2 mL of dilute ammonia. The yellow colour of the mixture intensifies and the mixture shows blue-green fluorescence in ultraviolet light at 365 nm.

History and authority : Proved by Hahnemann, *Mat. Med. Pura*, 1830, **2** , 649; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **9**, 596; Hering, C., *Guiding Symptoms*, 1879, **10**, 306.

Preparation : (a) Mother Tincture Ø

	Drug strength 1/10
Thuja Occidentalis in *coarse powder*	100 g
Purified Water	135 mL
Strong Alcohol	885 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies 2x and higher with *Dispensing Alcohol.*

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THUJA OCCIDENTALIS
(Thuja)

Botanical name : *Thuja occidentalis* L. **Family**: Cupressaceae

Common names : *English*: American arbor-vitae; *French*: Thuja du Canada; *German*: Lebensbaum.

Description : A tall tree up to 20 m in height, in a pyramidal form, bark light red-brown, horizontal branches ascending at the end. Leaves acute, apiculate, usually conspicuously glandular, bright green above and yellowish-green beneath. Inflorescence catkin. Flowers minute, solitary, terminal, unisexual and monoecious; male catkin subglobular, male or staminate flowers yellow, bear 4 to 8 opposite, oval, coriacieous scales, stamens 12, decussate; female catkin fewer in number; female or pistillate flower bears 8 to 12 imbricate scales in 4 rows, only 4 of which being fertile. Fruit a strobile, sub-conical, oblong, at first green and then brown; seeds winged.

Distribution : United States, found in swamps and on cool rocky banks.

Part used : Leaves and Twigs

Macroscopical : Twigs entire or broken, fan-shaped, flattened, bearing 4 rows of appressed, scale-like leaves, all bearing glands on back; odour balsamic aromatic; taste camphoraceous, turpentine like and bitter.

Microscopical : Leaf: transection shows single layered thin-walled epidermis; stomata anomocytic, broadly elliptical and sunken; mesophyll parenchymatous containing 1 resin duct on each side of the stele; stele surrounded by single layer of endodermis, vascular bundle contains xylem, phloem and transfusion tissues.

Young twig: transection shows leaf-like structure with lamina-like projection on both sides; single layered epidermis with cuticle; hypodermis discontinuous, sclerenchymatous, present only in central portion; mesophyll parenchymatous, only few cells of which contain chlorophyll; endodermis single layer of barrel shaped cells and encircles the stele; in stele xylem and

Stem: transection shows epidermis with cells having convex outer walls with a papillate cuticle, non glandular hairs of two types (i) 2 to 4 celled, papillate trichomes up to 250 µm in length, and (ii) 2 to 5 celled non-papillate trichomes up to 500 µm in length, glandular trichomes few having 1-celled stalk and 1 to 2 celled head; a zone of collenchyma beneath the epidermis and well developed in the angles of the stem; a narrow zone of cortical parenchyma, the inner most layer of tangentially elongated cells; a narrow phloem and broad xylem of numerous wood wedges separated by 1-celled medullary rays; pith large, disintegrated.

Powdered drug: pale to dusky yellow-green with short unicellular, non-glandular papillate trichomes, up to 30 µm in length; 2 to 3 celled, non-glandular trichomes up to 60 µm long; 2 to 5 celled papillate, non-glandular trichomes from the stem, frequently bent, up to 250 µm in length; a few trichomes form the margins of leaves and the flower whorls, non-glandular ones up to 9-celled and up to 1.3 mm in length; glandular trichomes with a 2-celled stalk and 8-celled head; fragments of leaf tissue composed of chlorenchyma, vascular tissue and epidermis with broadly elliptical stomata, the latter up to 24 µm in length, numerous fibres with thick lignified walls. Pollen grains 20 µm in diameter.

Identification : (a) To 1 mL of the mother tincture add 50 mL of water and 0.1 mL of ferric chloride solution. A green colour is produced.

(b) To 0.5 mL of the mother tincture successively add 10 mL of water, 0.1 mL of sodium carbonate solution and 0.1 mL of a 20 g/l solution of dichloroquinonechlorimide in alcohol. A blue-green colour is produced.

History and authority : Proved by Paul, Anshutz, E. P., *New Old and Forgotten Remedies*, 1996, 512.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Thymus Serpyllum moist magma containing solids 100 g and plant moisture 300 mL	400 g
Strong Alcohol	730 mL

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THYMUS SERPYLLUM
(Thym. ser.)

Botanical name : *Thymus serpyllum* L. **Family**: Lamiaceae

Common names : *Hindi*: Ban ajwain; *English*: Mother of Thyme, Creeping Thyme, Wild Thyme; *German*: Quendel, Wilder Thymian.

Description : Perennial creeping herb, caespitose or creeping; stems wiry, prostrate and rooting below, ascending erect above, slightly puberulent, quadrangular, about 1 mm in width, dusky-red-purple or brown to dusky greenish-yellow. Leaves obovate, elliptical or ovate, up to 15 mm in length and 1 to 5 mm in width, obtuse, base attenuate, tapering into a short petiole, margin revolute, ciliate, upper surface weak olive-green, pellucid-punctate. Inflorescence verticillaster, crowded into short vermine spikes. Flowers polygamous. Calyx tubular, bilabiate, glandular-hairy with a tuft of white hairs on the throat, upper lip 3-lobed, lower lip of 2-slender attenuate lobes bearing bristly marginal hairs; corolla tubular bilabiate, purple or pink, red or white in different varieties, as long or longer than the calyx; stamens slightly didynamous and exserted; stigma bifid. Fruit a nutlet ovoid or oblong, smooth. Odour and taste characteristically aromatic.

Distribution : Western temperate Himalayas from Kashmir to Kumaon, 1500 m to 4500 m.

Part used : Whole plant

Microscopical : Leaf: transection of lamina shows upper and lower epidermal cells with thick striated cuticle and wavy vertical walls and a few elliptical stomata, more on lower surface; trichomes of two types, (i) unicellular, non-glandular, papilla-like trichomes up to 30 µm in length, and (ii) occasional uniseriate, non-lignified, non-glandular trichomes up to 6-celled but mostly 2 to 3 celled and up to 60 µm long and deep seated; glandular trichome with 2 celled stalk and up to 8 celled head, mesophyll differentiated into 2 layers of palisade, becoming 3 layers in some places and spongy parenchyma 6 to 8 rows of irregularly shaped, chlorenchymatous and meristele contains fibrous vascular bundles.

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TINOSPORA CORDIFOLIA
(Tino.spo.)

Botanical name : *Tinospora cordifolia* (Willd.) Miers. ex Hook.f. & Thoms.

Family: Menispermaceae

Common name : *Hindi*: Giloe, Guruch

Description : A large glabrous climber with succulent, corky, grooved stems, branches sending down slender, pendulous, filiform fleshy arial roots, terete, striate with tubercles, pale, sometimes shining or glaucous bark. Leaves membranous, 7 to 9 nerved, 5 to 10 cm in width, cordate, glabrous, acute or acuminate; petiole 2.5 to 7 cm long. Raceme exceeding the leaves, axillary or terminal; bracts subulate. Male flowers clustered in the axils of small subulate bracts, sepals yellow; stamens free; female flowers usually solitary, similar to male, but sepals green; ripe carpels pisiform. Fruit a drupe, size of a pea or small cherry, red.

Distribution : Throughout tropical regions up to 1,200 m elevation.

Part used : Stem

Macroscopical : Stem light, rather succulent, up to 15 or 20 cm long and about 2 to 3 cm in diameter; bark warty, light brown with transverse markings and marks of lenticels, thin, papery, easily separable from the wood. Dry wood breaks into wedge-shaped longitudinal pieces. Wood soft, luster dull, fracture short and smooth.

Microscopical : Transection shows, cork comprises of an outer zone of thick-walled brownish compressed cells and inner zone of thin-walled colorless, tangentially arranged cells; cortex wide, outer cortex consists of 3 to 5 rows of irregularly arranged, tangentially elongated chlorenchymatous cells and polygonal cells towards inner side filled with abundant starch grains; starch grains simple, ovoid or ovoid-elliptical, occasionally compound; several secretory cells also found in the cortex region. Pericyclic fibres lignified and containing prismatic crystals. Stele composed of discrete vascular strands with 10 to 12 or more wedge-shaped bands of xylem, externally surrounded by band of phloem, alternating with 15 to 20 cells wide rays; some

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, two parts *Purified Water* and seven parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol.*

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TRIBULUS TERRESTRIS
(Trib. ter.)

Botanical name : *Tribulus terrestris* L. **Family**: Zygophyllaceae

Common names : *Hindi*: Gokhru; *English*: Land Caltrops, Puncturevine

Description : A procumbent, densely hairy and prostrate herb, stems and branches pilose; younger parts silky villous. Leaves opposite, abruptly pinnate, one of each pair usually smaller than the other, sometimes wanting, stipules lanceolate, hairy. Leaflets 3 to 8 pairs, 6 to 12 mm long, oblong, mucronate, with appressed hairs beneath and more or less on the upper surface, base rounded oblique; petioles very short, pilose. Flowers axillary or leaf-opposed, solitary, pale-yellow, up to 1.5 cm in diameter. Pedicels slender, hairy. Sepals 6 mm long, lanceolate, acute, hairy. Petals 10 mm long, oblong, stout. Fruit globose, 5 angled or winged, spinous, tuberculate, hairy or nearly glabrous, often mucronate, cocci woody, each with 2 pairs of hard sharp spines, one pair longer than the other. Seeds non endospermic, several in each coccus, with transverse partition between them. Odour agreeable; taste astringent.

Distribution : Found throughout India.

Part used : Whole plant

Microscopical : Leaf: transection of leaflet shows single layered epidermis covered with thin cuticle; trichomes simple, unicellular, long, present on both the surfaces, rarely glandular trichomes also present on both surfaces but abundantly on lower surface; stomata anomocytic, present on both the surfaces, but more on the lower surface; palisade single layered, followed by compact spongy parenchyma, vascular bundles of veins present abundantly in lamina portion covered by bundle sheath; rosette crystals of calcium oxalate abundantly present in lamina, prismatic crystals also present. In midrib region, palisade layer continuous, remaining ground tissue parenchymatous, vascular bundle covered by bundle sheath composed of large elongated cells and encapped by sclerenchymatous fibre.

cells of phloem parenchyma contain crystals of calcium oxalate; cambium 1 or 2 layered, xylem consists of vessel elements with tyloses, tracheids, parenchyma and fibres. Pith small, containing starch grains.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (19:1 v/v) as mobile phase.

a. Under UV light (254 nm), nine spots appear at R_f 0.11 (blue), 0.16 (blue),0.25 (blue), 0.33 (blue), 0.43 (blue), 0.52 (blue), 0.69 (blue), 0.85 (light blue), 0.89 (light blue).

b. Under UV light (366 nm), eight spots appear at R_f 0.11 (light blue), 0.16 (light blue), 0.25 (yellow), 0.43 (light blue), 0.52 (light blue), 0.69 (light yellow), 0.85 (light yellow), 0.89 (yellow).

c. On exposure to Iodine vapors, nine spots appear at R_f 0.11 (yellow), 0.16 (yellow), 0.25 (yellow), 0.33 (yellow), 0.43 (yellow), 0.52 (dark yellow), 0.69 (yellow), 0.85 (light yellow), 0.89 (yellow).

History and authority : Ghose, S. C., *Drugs of Hindoosthan*, 1984, 298; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 268.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Tinospora Cordifolia moist magma containing solids 100 g and plant moisture 488 mL	588 g
Purified Water	69 mL
Strong Alcohol	480 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

a. Under UV light (254 nm), eight spots appear at R_f 0.16 (light blue), 0.27 (light brown), 0.42 (light brown), 0.52 (light brown), 0.66 (dark brown), 0.77 (brown), 0.83 (yellow), 0.94 (dark brwon).

b. Under UV light (366 nm), eight spots appear at R_f 0.16 (yellow), 0.27 (red), 0.42 (red), 0.52 (red), 0.66 (red), 0.77 (red), 0.83 (orange), 0.94 (red).

c. On exposure to Iodine vapors, eight spots appear at R_f 0.16 (yellow), 0.27 (yellow), 0.42 (green), 0.52 (light yellow), 0.66 (green), 0.77 (green), 0.83 (light yellow) 0.94 (dark green).

History and authority : Boericke, W., *Mat. Med. with Repertory*, 1927, 651.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Tribulus Terrestris moist magma containing solids 100 g and plant moisture 350 mL	450 g
Strong Alcohol	650 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x with *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

Stem: transection circular in outline; single layered epidermis covered by thin cuticle; trichomes both glandular and non glandular, glandular trichomes papillate in shape and non-glandular trichomes large, 1 or 2 celled, sometimes hook shaped; hypodermis of single layered barrel shaped cells followed by 6 or 7 layers of parenchymatous cortex, pericycle in patches of sclerenchymatos fibres; endodermis single layered, 1 to 3 layered cambium; phloem consists of sieve tubes, companion cells and phloem parenchyma; schizogenous canals present in phloem region; xylem large; medullary rays uni- to bi-seriate. Pith parenchymatous. Prismatic and rosette crystals of calcium oxalate and rounded to oval starch grains present.

Root: transection circular in outline; single layered epidermis followed by thin-walled parenchymatous cortex; endodermis distinct. Pericycle thick-walled parenchymatous, enclosing diarch stele. In mature root 4 to 6 layered cork cells and single layered cork cambium, followed by 5 to 16 layers of thin-walled parenchymatous cortex with patches of sclerenchymatous fibres. Phloem wide, divided into two zones consisting of numerous phloem fibres with few sieve tubes, inner zone parenchymatous and devoid of fibres; cambium 3 to 5 layered, wood composed of tracheary elements with simple pits. Medullary rays heterogenous, uni- to multi seriate. Oval to rounded simple-compound starch grains and prismatic crystals of calcium oxalate present.

Fruit: transection of fruit shows pentagonal structure and deeply partite; each coccus contains single ovule and margins with 3 to 5 notches; abundant unicellular trichomes present in ridges. Epidermal cells small in size and rectangular, followed by 6 to 10 layers of parenchymatous mesocarp, 2 to 5 small vascular bundles present in each coccus; xylem vessels not fully developed, having annular and spiral secondary wall thickening. Rosette and prismatic crystals of calcium oxalate present abundantly.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC on pre coated silica gel aluminum plate 60F-254, 0.25 mm thickness, Merck, using *chloroform : methanol* (9:1 v/v) as mobile phase.

vascular bundles conjoint, collateral, open, encircled by sclerenchyma patches; lateral vein bundles also surrounded by parenchymatous sheath; ground tissue parenchymatous having idioblasts with crystals. Stomata paracytic confined on lower surface, stomatal index 88.76 to 91.68; vein islet number 10 to 13 per sq. mm; palisade ratio 4.25 to 6.00.

Petiole: circular in outline, transection shows epidermis single layered with 2 to 4 celled uniseriate trichomes; hypodermis collenchymatous, 5 to 7 layered, followed by isodiametric parenchymatous cortex; vascular bundle arc-shaped, dorso-convex, conjoint, collateral, encapped by sclerenchyma patches on both sides.

Identification : (a) Take 5 mL of 60.0 percent alcoholic extract, add a few drops of hydrochloric acid and *Mayer's reagent*; a brown coloured precipitate appears.

(b) Take 5 mL of 60.0 percent alcoholic extract, add 100 mg magnesium powder and a few drops of hydrochloric acid; a brownish-pink colour develop.

History and authority : Short proving was conducted in CCRIM & H; *Hahnemannian Gleanings*, 1976, **3**, 13.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Tylophora Indica moist magma containing solids 100 g and plant moisture 400 mL	500 g
Strong Alcohol	630 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x with *Dilute Alcohol*; 3x and higher with *Dispensing Alcohol.*

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TYLOPHORA INDICA
(Tylo. ind.)

Botanical name : *Tylophora indica* (Burm.f.) Merill. **Family**: Asclepiadaceae

Synonyms : *Tylophora asthmatica* Wight & Arn.; *Asclepias asthmatica* Merill; *Cynanchum indicum* Burm. f.

Common names : *Hindi:* Anantamul, Jungli-pikvan; *English*: Emetic swallow-wort.

Description : A twining perennial herb. Stem densely tomentose, slender, longitudinally striated with branches arising from axil of leaves. Leaf thick, cauline, opposite, simple, entire, acute and base cordate; glabrous ventrally and pubescent dorsally. Inflorescence many flowered umbels (dichasial cyme). Flowers greenish-yellow outside, purplish within. Calyx coarsely hairy outside, divided almost to the base, segment 2.5 mm long, lanceolate, very acute; corolla greenish-yellow, 5 to 6 mm long, lobes about 4 mm long, acute; staminal column arising from the base of the corolla, anthers erect, small, with a membranous appendage; style apex not exserted beyond the anther-tip. Fruit a follicle, fusiform, divaricate, up to 10 cm, striate. Seed ovate, elongated into a coma, 2 to 2.5 cm, silky hairs at one end.

Distribution : Throughout the Southern and Eastern part of India upto an elevation of 900 m.

Part used : Leaf

Macroscopical : Leaf 5 to 10 cm long and 2.5 to 5.7 cm broad; cauline, simple, entire, acute and base cordate, often apiculate, elliptic-oblong, glabrous ventrally, pubescent dorsally, especially when young; petiole 6 to 13 mm long.

Microscopical : Leaf: transection of lamina shows, single layered epidermis with thin cuticle; upper epidermal cells larger than lower epidermal cells; trichomes uniseriate, multicellular, 3 to 8 celled. Mesophyll differentiated into 2 to 4 layered palisade and 6 to 8 layered spongy parenchyma, occasion rosettes of calcium oxalate crystals and laticiferous ducts present below palisade tissue. In mid-rib collenchyma present below lower and upper epidermis; meristele arc-shaped,

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UVA URSI
(Uva urs.)

Botanical name : *Arctostaphylos uva-ursi* (L.) Spreng. **Family**: Ericaceae

Synonym : *Arbutus uva-ursi* L.

Common names : *English*: Bearberry; *French*: Arbousier; *German*: Barentraube.

Description : A low, evergreen trailing shrub with ascending branches and thick creeping roots. Stem woody, rooting, young shoots only turning upwards, the pale-brown bark scaling off in patches. Leaves crowded, alternate, short petioled, obovate or spatulate, acute, entire, smooth. Flowers white on short reflexed peduncles in small terminal racemes, calyx 5, reddish; corolla 5, gamopetalous but divided at the margin into short reflexed segments, reddish-white, urceolate; stamens 10, anthers bifid; ovary hypogynous, carpel 5, style simple, larger than the stamens, stigma knob like. Fruit red berry-like drupe, 5 to 10 seed-like nutlets.

Distribution : Europe, United States, Mexico and northern Asia.

Part used : Leaf

Macroscopical : Dark green to brownish-green, obovate or spatulate, entire, very short petiolate and upto 3 cm in length, brittle, coriaceous and glabrous except near the base and on the petiole; margin entire, slightly revolute, in young leaf margins ciliate; upper surface glabrous shining, tessellated by sunken veinlets. Odourless; taste astringent, and somewhat bitter.

Microscopical : Leaf: transection of lamina shows single layer of upper and lower epidermis with thick cuticle, anticlinal walls of both the epidermis straight; trichomes few and of two types (i) unicellular, conical, thick-walled, and (ii) glandular with 2-celled, uniseriate stalk and multicellular head; stomata anomocytic, present only on lower epidermis; mesophyll 3 to 5 layered palisade cells, contain abundant droplets of oils; midrib transcurrent, collenchyma 3 to 5 layered, present above and below epidermis; meristele crescent-shaped; xylem towards inner side and phloem towards the outer side; a few thick-walled, fibrous sclerotic cells,

representing pericycle; numerous crystals of calcium oxalate of various sizes present either singly or in groups. Petiole: transection circular in outline; single layer of epidermis with thick cuticle; 4 to 6 layers of collenchyma, followed by 5 to 6 layers of parenchyma; pericycle in a few thick-walled fibrous sclerotic cells; stele represents radiate xylem and a band of phloem; crystals of calcium oxalate of various sizes and oil drops present. Trichomes abundant, two types as like lamina.

Identification : Evaporate 20 mL of Mother Tincture on water bath to remove alcohol and basify with 01 mL ammonia. Extract the residue with 3 x 20 mL *chloroform* and concentrate the chloroform extract to 2 mL.

Carry out TLC study of Mother Tincture on silica gel 'G' plate using *Toluene: Ethyl acetate: Formic acid* (5:4:1, v/v) as mobile phase.

A) Under U.V. light (254 nm) four spots appear at Rf. 0.43, 0.47, 0.53 and 0.70.

B) Under U.V. light (366 nm) eight spots appear at Rf. 0.26, 0.33, 0.40, 0.43, 0.48, 0.53, 0.62 and 0.70.

History and authority : Proved by Hahnemann, Heberden, Noack, Trinks; Allen, T. F., *Encyclop. of Pure Mat. Med.*, 1874, **10**, 56; Hering, C., *Guiding Symptoms*, 1879, **10**, 375; Clarke, J. H., *A Dict. of Pract. Mat. Med*, 1901, **3**, 1491.

Preparation : (a) Mother Tincture Ø

Drug strength	1/10
Uva Ursi in *coarse powder*	100 g
Purified Water	400 mL
Strong Alcohol	635 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, three parts *Purified Water* and six parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

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VALERIANA OFFICINALIS
(Valer. of.)

Botanical name : *Valeriana officinalis* L. **Family**: Valerianaceae

Common names : *Hindi*: *Billilotan*; *English*: Valerian; *French*: Valeriane Sauvage; *German*: *Augenwurzel*.

Description : A perennial herb, with a tuberous, short rhizome, bearing numerous slender, fleshy, tapering, pale-brown rootlets, 7 to 12 cm long; one or more stolons. Stem erect, 90 to 150 cm high, hollow, furrowed, branched in the terminal part and hirsute at base. Leaf both radical and cauline, the radical being on long petioles whereas the cauline ones opposite or alternate, exstipulate and pinnatisect with clasping petioles. Leaflets sessile, lanceolate and dentate. Flowers numerous, small, white or pink, in racemes of cymes. Fruit an achene, 1-seeded, oblong-ovate, 4-ridged.

Distribution : Native to Europe, found in India, mainly at Kashmir.

Part used : Rhizome (dried in artificial heat soon after collection)

Macroscopical : Rhizome 2 to 4 cm in length and 1 to 2.5 cm in diameter, sometimes split into longitudinal pieces; externally dull brown to moderate yellowish-brown or dark brown; internally brown to moderate yellowish-brown, with a thick bark and narrow central cylinder; upper part with stem bases, leaf scars and a short horizontal stolon; the outer surface with numerous slender, brittle rootlets and occasional root scars; fracture short and horny. Odour like isovaleric acid; taste sweetish, camphoraceous, and somewhat bitter.

Microscopical : Rhizome: transection shows 5 to 7 layered cork with brown polygonal cells; cortex broad with thick-walled parenchyma, traversed by numerous root and leaf-trace bundles; stone cells rarely present; endodermis of tetragonal or polygonal cells, containing globules of volatile oil; pericycle a narrow band of parenchyma; fibro-vascular bundles collateral, somewhat twisted, arranged, in a ring; tracheae 10 to 30 µm in diameter, 40 to 120 µm long, with oblique perforations and mostly with reticulate and spiral thickenings; medulla a broad zone of

parenchyma containing starch grains and islets of sclereids, 30 to 80 µm in diameter.

Rootlets: transection shows epidermis of a single layer of papillose cells, bearing a number of root hairs; cork replaces epidermis in old rootlets; hypodermis 1-layered with quadrangular to polygonal cells, containing globules of volatile oil and occasionally small prismatic crystals; cortex parenchymatous with cells axially elongated and containing starch grains; endodermis single-layer with thick radial cell walled; cambium of 1 to 2 layers of thin-walled cells; stele with 4 to 11 strands of xylem and a central parenchyma; tracheae with spiral and reticulate thickenings.

Identification : (a) Carry out TLC of chloroform extract of Mother Tincture on silica gel 'G' plate using *Hexane : ethyl acetate* (9:1 v/v) as solvent system. On spraying with vanillin sulphuric acid and heating, eleven spots appear at R_f 0.08, 0.26, 0.38 (all violet), 0.46 (yellow), 0.52, 0.62, 0.69, 0.74 (all violet), 0.80 (purple), 0.87 (yellow) and 0.97 (violet).

(b) Carry out TLC of chloroform extract of Mother Tincture on silica gel 'G' plate using *Hexane : ethyl acetate* (9:1 v/v) as solvent system. On spraying with *Dragendorff's reagent*, one spot appears at R_f 0.90 (Orange-red).

History and authority : Introduced by Hahnemann; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **10**, 59; Hering, C., *Guiding Symptoms*, 1879, **10**, 385; Bradford, T. L., *Index of Homoeopathic Provings*, 1901, 274.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Valeriana Officinalis in *coarse powder*	100 g
Purified Water	500 mL
Strong Alcohol	537 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, four parts *Purified Water* and five parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

(c) Trituration 1x, Drug strength 1/10

Valeriana Officinalis in *coarse powder*	100 g
Saccharum Lactis	900 g

to make one Thousand grammes of the Trituration.

(d) Potencies: 2x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol.*

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VERATRUM VIRIDE
(Vert. vir.)

Botanical name : *Helonias viridis* (Aiton) Ker Gawl. **Family**: Liliaceae

Synonym : *Veratrum viride* Aiton

Common name : *English:* American or Green hellebore; *French*: Veratre vert; *German*: Grûner Germer.

Description : A perennial tall herb with coarse, thick, fleshy stout, rhizomes, more or less horizontal, with numerous, white rootlets upon the lower part. Leaves sessile or nearly so, 3-ranked, broadly-oval, strongly plaited sheath clasping, lower leaf 15 to 30 cm long, curly, decreasing in size upwards to mere lanceolate bracts. Flowers polygamous, yellowish-green on pedicels much shorter than the bracts, in dense, spreading, spike-like racemes on roundish, downy peduncles, composing a terminal pyramidal panicle. Perianth-segments 6, elliptic or broadly lanceolate, 8 to 13 mm long, free from the ovary, narrowed at the base, ciliate; stamens 6; filaments erect, slender, free from the perianth; anthers extrorse, obcordate; ovary 3-lobed, each lobe terminated by a short style. Fruit a capsule, ovoid, 18 to 25 mm long, septicidal, subtended by the withered perianth. Seeds large, flat, the small embryo surrounded by a broad wing.

Distribution : Indigenous to North America and Canada.

Part used : Rhizome with root

Macroscopical : Rhizome erect, about 5 to 8 cm long, 2 to 3.5 cm wide, sub-cylindrical, obconical below and crowned with the remains of concentrically arranged leaf-bases cut off level with the top of rhizome; externally brownish-gray and rough, and internally grayish-white; fracture hard and horny. Roots numerous, weak brown to weak yellowish-orange. Odour strong and unpleasant when fresh and almost odourless when dried; taste bitter and acrid.

Microscopical : Rhizome: transverse section shows an outer layer of dark brown polyhedral cork cells; cortex broad, parenchymatous, cells isodiametric, rounded, pitted

containing spherical or ellipsoidal single or 2 to 3 compound starch grains, measuring 4 to 20 µm and raphides or acicular crystals of calcium oxalate (raphides), occasionally root trace bundles present; endodermis distinct, single layered with lignified cells, inner and radial walls being more thickened than the outer walls, giving "v" shape, endodermis broken at places by root trace and leaf trace bundles; stele consist of parenchyma and fibro-vascular bundles arranged in irregular interrupted circles or scattered.

Root: transection shows single layer of epidermis of more or less quadrangular cells with lignified and thickened outer and radial walls; hypodermis single layer of more or less compressed cells, beneath which 2 or 3 layers of collenchyma present; outer cortex consists of large irregular air-spaces surrounded by parenchyma cell; inner cortex a broad zone of parenchyma cells which become gradually smaller towards central cylinder, most of the cortical cells contain starch grains and few cells contain raphides of calcium oxalate; endodermis consisting of a single layer of cells with slightly lignified inner and radial walls; cambium 1 or 2 layered; stele consists of many radial fibro-vascular bundles; pith small, parenchymatous and containing starch grains and crystals.

Identification : (1) To 1 mL of Mother Tincture add 1mL of *ferric chloride solution;* green colour is developed.

(2) To 1 mL Mother tincture, add 1mL *sodium hydroxide* solution; yellow colour is developed.

(3) To 1 mL of Mother Tincture, add 2 to 3 drops of *sulphuric acid;* violet colour is developed.

(4) Evaporate 20 mL Mother Tincture on water bath to remove alcohol, make it alkaline by adding *ammonia* and extract it with 3 x 20 mL *chloroform*; concentrate the chloroform extract and carry out TLC on silica gel 60 F_{254} pre-coated plate using *cyclohexane* : *diethylamine* (9:1 v/v) as solvent system. After spraying the plate with 25% *trichloroacetic acid* in *chloroform* and heating the plate at 110° for 5 minutes; under UV light (366 nm), seven spots appear at Rf. 0.10 (blue), 0.32 (gray), 0.80 (blue), 0.85 (red), 0.89 (blue), 0.92 (brown) and 0.95 (blue).

(5) The Mother Tincture obtained after extraction and concentration as above is applied on silica gel 'G' plate and developed with *butanol*: *acetic acid*: *water* (4:1:5) as solvent system. After spraying with 15% sulphuric acid in acetic anhydride, three spots are developed in visible light at Rf 0.48 (yellow), 0.75 (blue) and 0.86 (yellow).

History and authority : Introduced and proved by Burt.; Allen, T.F., *Encyclop. of Pure Mat. Med.*, 1874, **10**, 639; Hering, C., *Guiding Symptoms*, 1879, **10**, 424; Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1520.

Preparation :

(a) Mother Tincture Ø — Drug strength 1/10

Veratrum Viride in *coarse powder*	100 g
Purified Water	233 mL
Strong Alcohol	800 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol.*

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WITHANIA SOMNIFERA

(With. som.)

Botanical names : *Withania somnifera* Dunal. **Family**: Solanaceae

Synonym : *Physalis somnifera* L.

Common names : *Hindi*: Ashvagandha; *English*: Winter cherry.

Description : An erect, branched, under-shrub, up to 1.5 m high, nearly all parts more or less stellately tomentose; branches flexuous, densely tomentose. Leaves simple, 5 to 10 cm long, 2.5 to 7.0 cm broad, shortly petioled, sub-opposite or alternate, broadly ovate to oblong, entire, pubescent, main lateral nerves about 6 pairs, prominent; petiole 6 to 12 mm long. Stem shows prominent nodes only on the side where from petiole arises. Inflorescence sub-sessile umbelliform cymes in the axils of leaves. Flowers greenish-yellow, usually 5 together. Pedicels becoming linear, acute, with broad base after flowering increasing up to 18 mm, becoming inflated, nearly globose and enclosing the fruit; corolla 5, gamopetalous, bell-shaped, 0.6 to 1.2 cm; stamens 5, epipetalous. Fruit a berry, small, 0.6 to 0.8 cm in diameter, globose, two chambered, brick red when ripe, enclosed within the enlarged calyx; seeds many, small, 2 to 2.5 mm in diameter, with smooth or pitted testa.

Distribution : Throughout India.

Part used : Root

Macroscopical : Straight, unbranched and conical, varying in thickness with age, generally up to 2.5 cm in diameter, buff to gray-yellow with longitudinal wrinkles; crown consisting of 2 to 6 remains of the stem bases; stem bases variously thickened; fracture short and uneven; odour pungent; taste starchy.

Microscopical : Transection shows phellem of 6 to 8 layers of thin-walled, cubical or rectangular cells; a wide secondary cortex composed of thin-walled, parenchymatous cells, filled with starch grains; starch grains 2 to 5 compound, almost round and 5 to 15 µm in diameter; some cells containing microcrystals of calcium oxalate. Phloem a narrow ring,

composed of sieve tubes, companion cells and phloem parenchyma, a few cells having microcrystals; phloem rays containing starch grains; a distinct cambium of 2 or 3 rows of thin-walled, rectangular cells; a wide xylem containing radially arranged vessels, tracheids, fibres, parenchyma and uni-to multiseriate parenchymatous rays, parenchyma completely packed with starch grains and occasional microcrystals; primary vascular bundle diarch.

Identification : Evaporate 25 mL mother tincture on water bath to remove alcohol. Extract the residue with 3 x 20 mL chloroform and concentrate the chloroform extract to 2 mL. Carry out TLC over activated slica gel 'G' plate using *methanol: ammonia* (30 : 0.5 v/v) as mobile phase.

On spraying with *Dragendorff's reagent*, five spots appear at R_f 0.22, 0.39, 0.42, 0.68 and 0.74 (all pink).

History and authority : Bhattacharya, M., *Homoeopathic Pharmacopoeia*, 1970, 106.

Preparation : (a) Mother Tincture Ø Drug strength 1/10

Withania Somnifera in *coarse powder*	100g
Purified Water	250 mL
Strong Alcohal	800 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x and higher with *Dispensing Alcohol*.

YOHIMBINUM

(Yohimb.)

Botanical name : *Pausinystalia johimbe* (K. Schum.) Pierre ex Beille
Family : Rubiaceae

Synonym : *Corynanthe yohimbe* K. Schum.

Common names : *English:* Yohimbe, Johimbe, Yohimbinum

Description : An evergreen tree, up to 27.5 m high. Leaf elliptic-oblong, in whorls, glossy, dark green, coriaceous, petiolate and stipulate. Inflorescence terminal panicle, lower branches of which being verticillate. Flowers white, pinkish or yellowish. Calyx tubular with 5 lobes, persistant; corolla funnel-shaped having 5 lobes, a club shaped appendix present at the base of each lobe; stamens 5, inserted at the throat of corolla, anthers sessile, glabrous, exserted, linear-oblong; ovary 2-celled, style filiform, stigma just exserted, ovules numerous. Fruit a capsule, oblong, coriaceous; seeds numerous, compressed.

Distribution : Tropical Africa, wide spread in the forests of Cameroon Republic, Gabon and Congo.

Part used : Bark

Macroscopical : Flat or slightly quilled pieces, up to 75 cm long and 2 cm thick; externally dark grayish-brown, with transverse cracks and longitudinal ridges forming a pattern of square patches, bearing grayish patches of lichens; inner surface golden-brown to reddish-brown, satin-like finely striated and longitudinally ridged; taste bitter.

Microscopical : Transection shows thin layer of cork; narrow cortex, both cork and cortex dark reddish-brown to yellowish-gray; medullary rays 1 to 3-celled wide with broadened distal ends; pericycle represented by small scattered strands of fibres; phloem fibres spindle-shaped, 1-cell wide and in radial rows, individual fibres in a row and frequently separated from one another by phloem parenchyma.

Identification : Carry out TLC of Mother Tincture on silica gel 'G' coated plate using *toluene*: *ethylacetate*: *diethyl amine* (7:2:1 v/v) as solvent system. After spraying the plate with *Dragendorff's reagent*, one spot appears at R_f 0.31 (orange, comparable with standard yohimbine).

History and authority : Clarke, J. H., *A Dict. of Pract. Mat. Med.*, 1901, **3**, 1578; Boericke, W., *Mat. Med. with Repertory*, 1927, 636.

Preparation : (a) Mother Tincture Ø — Drug strength 1/10

Yohimbinum in *coarse powder*	100 g
Purified Water	385 mL
Strong Alcohol	650 mL

to make one thousand millilitres of the Mother Tincture.

(b) Potencies: 2x to contain one part Mother Tincture, two parts *Purified Water* and seven parts *Strong Alcohol*; 3x and higher with *Dispensing Alcohol*.

(c) Trituration 1x — Drug strength 1/10

Yohimbinum	100 g
Saccharum Lactis	900 g

to make one thousand grammes of the Trituration.

(d) Potencies: 2x and higher to be triturated in accordance with the method, HPI; 6x may be converted to liquid 8x, HPI; 9x and higher with *Dispensing Alcohol*

Caution : Not to be prescribed below 3x.

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Appendix

Limit of Alcohol on Mother Tincture

S. No.	Drug Name	HPI Volume	Alcohol Limit
1.	Abelmoscus	IX	91-95
2.	Abroma Augusta	IX	42-46
3.	Aconitum Ferox	VII	91-95
4.	Aconitum Lycoctonum	VI	54-58
5.	Adlumia Fungosa	VIII	54-60
6.	Aegle Marmelos	VI	23-27
7.	Agaricus Campanulatus	IX	41-45
8.	Agaricus Campestris	VI	50-54
9.	Agaricus Citrinus	IX	41-45
10.	Agaricus Muscarius	IX	41-45
11.	Agaricus Pantherinus	IX	41-45
12.	Agaricus Phalloides	IX	41-45
13.	Agaricus Procerus	IX	41-45
14.	Agaricus Stercorarius	VII	41-45
15.	Agave Americana	X	19-23
16.	Agnus Castus	IX	91-95
17.	Agrarphis Nutans	VI	42-46
18.	Agrostemma Githago	IX	47-51
19.	Alchemilla Vulgaris	VIII	42-46
20.	Allium Ursinum	VIII	38-42
21.	Alnus Serrulata	VI	56-60
22.	Alstonia Constricta	VII	56-60
23.	Althea Officinalis	VII	74-78
24.	Ammi Majus	IX	56-60
25.	Ammi Visnaga	IX	56-60
26.	Anhalonium Lewinii	VI	67-71
27.	Angelica Archangelica	IX	37-41
28.	Athamantha Oreoselinum	VI	56-60
29.	Aralia Racemosa	IX	79-83
30.	Argemone Mexicana	IX	56-60
31.	Artemisia Vulgaris	IX	62-66
32.	Arundo Donax	IX	62-66
33.	Asclepias Curassavica	IX	57-61
34.	Asclepias Incarnata	VI	58-62
35.	Asimina Triloba	IX	91-95
36.	Aspidosperma	VI	91-95
37.	Astacus Fluviatilis	VI	91-95
38.	Atista Indica	VII	83-87

S. No.	Drug Name	HPI Volume	Alcohol Limit
39.	Atista Radix	VI	85-89
40.	Averrhoa Carambola	IX	56-60
41.	Azadirachta Indica	VIII	56-60
42.	Bacopa Monnieri	IX	57-61
43.	Baptisia Confusa	VII	57-61
44.	Baptisia Tinctoria	IX	62-66
45.	Barosma Serratifolia	VII	74-78
46.	Bellis Perennis	IX	61-65
47.	Beta Vulgaris	IX	30-34
48.	Betula Pendula Folia	VIII	61-65
49.	Bixa Orellana	VII	65-69
50.	Blatta Americana	VII	91-95
51.	Boldo	VI	47-51
52.	Borago Officinalis	VIII	62-66
53.	Brassica Oleracea	VIII	47-51
54.	Bryonia Alba	IX	56-60
55.	Bryonia Cretica	VIII	41-45
56.	Caesalpinia Bonducella	VIII	56-60
57.	Calluna Vulgaris	VIII	61-65
58.	Canna	IX	65-69
59.	Carbonium Hydrogenisatum	VI	91-95
60.	Cardiospermum Halicacabum	VIII	56-60
61.	Carduus Benedictus	X	47-51
62.	Carduus Marianus	IX	70-74
63.	Carum Carvi	VIII	91-95
64.	Cassia Sophera	VI	51-55
65.	Catharanthus Roseus	IX	65-69
66.	Cereus Bonplandii	VI	41-45
67.	Cetraria Islandica	VIII	61-65
68.	Cheiranthus Cheiri	VIII	65-69
69.	Chimaphila Maculata	VII	65-69
70.	Cichorium Intybus	IX	56-60
71.	Cicuta Maculata	IX	47-51
72.	Citrus Vulgaris	VII	70-74
73.	Clerodendron Infortunatum	X	73-77
74.	Colchicum Autumnale	IX	47-51
75.	Coleus Aromaticus	X	44-48
76.	Cundurango	VIII	47-51
77.	Coriandrum Sativum	X	74-78
78.	Cornus Circinata	VI	58-60
79.	Cotyledon Umbilicus	VIII	38-42
80.	Cresol	IX	91-95

S. No.	Drug Name	HPI Volume	Alcohol Limit
81.	Cuphea Viscosissima	IX	65-69
82.	Cupressus Australis	IX	56-60
83.	Cydonia Vulgaris	IX	31-35
84.	Cynara Scolymus	IX	65-69
85.	Cytisus Laburnum	IX	56-60
86.	Datisca Cannabina	VIII	56-60
87.	Datura Arborea	VI	65-69
88.	Datura Metel	X	61-65
89.	Desmodium Gangeticum	VI	83-87
90.	Dirca Palustris	VII	62-66
91.	Draba Verna	IX	41-45
92.	Echinacea Purpurea	IX	53-57
93.	Eclipta Alba	IX	67-71
94.	Eichhornia Crassipes	VIII	56-60
95.	Elaeis Guinensis	IX	91-95
96.	Embelia Ribes	IX	56-60
97.	Emblica Officinalis	VIII	65-69
98.	Ephedra Vulgaris	VII	79-83
99.	Erechthites	VI	47-51
100.	Erodium Cicutarium	VIII	41-45
101.	Eschscholtzia Californica	VIII	42-46
102.	Eugenia Caryophyllata	VIII	62-66
103.	Euonymus Europaeus	VI	47-51
104.	Eupatorium Aromaticum	VII	47-51
105.	Euphorbia Cyparissias	VIII	61-65
106.	Fabiana Imbricata	IX	62-66
107.	Ficus Indica	VI	70-74
108.	Filipendula Ulmaria	VIII	56-60
109.	Foeniculum Vulgare	VIII	63-67
110.	Fuchsinum	VII	91-95
111.	Galega Officinalis	VIII	91-95
112.	Galphimia Glauca	IX	58-62
113.	Genista Tinctoria	VII	65-69
114.	Gingko Biloba	VII	56-60
115.	Glycerinum	VII	91-95
116.	Glycyrrhiza Glabra	X	28-32
117.	Guaco	VII	65-69
118.	Guarana	VI	56-60
119.	Gymnocladus Canadensis	VII	56-60
120.	Haplopappus Baylahuen	VIII	67-71
121.	Harungana Madagascariensis	VIII	56-60
122.	Hemidesmus Indicus	X	47-51

S. No.	Drug Name	HPI Volume	Alcohol Limit
123.	Hepatica Triloba	IX	61-65
124.	Herniaria Glabra	VIII	56-60
125.	Hoang Nan	VII	61-65
126.	Hoitzia Coccinea	VIII	53-57
127.	Hura Brasiliensis	VI	91-95
128.	Hygrophila Spinosa	IX	58-62
129.	Ilex Aquifolium	VIII	56-60
130.	Ilex Paraguayensis	VII	47-51
131.	Iris Germanica	IX	65-69
132.	Jacaranda Caroba	VI	56-60
133.	Jequirity	IX	91-95
134.	Juncus Effusus	IX	56-60
135.	Kousso	VII	91-95
136.	Lactuca	VII	47-51
137.	Lamium Album	VII	47-51
138.	Larrea Mexicana	VIII	91-95
139.	Latrodectus Mactans	VI	65-69
140.	Lavandula Angustifolia	X	61-65
141.	Leonourus Cardiaca	X	56-60
142.	Lespedeza Capitata	IX	61-65
143.	Lespedeza Sieboldii	IX	61-65
144.	Leucas Aspera	X	56-60
145.	Levisticum Officinale	VIII	61-65
146.	Lilium Tigrinum	IX	44-48
147.	Linaria Vulgaris	VI	56-60
148.	Lobelia Syphilitica	VI	53-57
149.	Luffa Acutangula	IX	69-73
150.	Luffa Amara	VI	69-73
151.	Luffa Bindal	VI	73-77
152.	Luffa Operculata	VIII	57-61
153.	Magnolia Grandiflora	X	38-42
154.	Malva	VIII	91-95
155.	Mandragora Officinarum	VII	74-78
156.	Mangifera Indica	VII	60-64
157.	Melilotus Officinalis	VI	47-51
158.	Mentha Arvensis	IX	56-60
159.	Mentha Viridis	IX	56-60
160.	Mercurialis Perennis	VII	44-48
161.	Mimosa Pudica	IX	56-60
162.	Mitchella Repens	VI	74-78
163.	Momordica Charantia	X	52-56
164.	Moringa Oleifera	IX	65-69

S. No.	Drug Name	HPI Volume	Alcohol Limit
165.	Musa Sapientum	IX	47-51
166.	Myrrhis Odorata	VIII	61-65
167.	Myrtillocactus Geometrizans	VIII	56-60
168.	Nabalus Serpentaria	VII	65-69
169.	Narcissus Pseudo Narcissus	VI	47-51
170.	Nasturtium Officinale	VIII	43-47
171.	Negundium Americana	VII	56-60
172.	Nuphar Lutea	VI	41-45
173.	Nyctanthes Arbortristis	X	56-60
174.	Ocimum Basilicum	IX	65-69
175.	Ocimum Canum	VI	79-83
176.	Ocimum Gratissimum	VI	78-82
177.	Oenothera Biennis	X	47-51
178.	Oldenlandia Herbacea	VII	64-68
179.	Oleum Cajuputi	VI	91-95
180.	Oleum Ricini	VII	91-95
181.	Ononis Spinosa	VIII	61-65
182.	Onosmodium Virginianum	VII	56-60
183.	Opuntia Vulgaris	VI	41-45
184.	Origanum Vulgare	X	91-95
185.	Ornithogalum Umbellatum	IX	47-51
186.	Oxalis Acetosella	VIII	38-42
187.	Oxytropis	VI	74-78
188.	Papaver Rhoeas	IX	56-60
189.	Paronychia Illecebrum	VIII	72-76
190.	Parthenium	VII	68-70
191.	Penthorum Sedoides	VII	65-69
192.	Perilla Frutescens	VIII	61-65
193.	Persea Americana	IX	56-60
194.	Petasites Hybridus	VIII	61-65
195.	Phaseolus	VI	91-95
196.	Pimpinella Anisum	VIII	61-65
197.	Pimpinella Saxifraga	VII	60-64
198.	Pix Liquida	VI	91-95
199.	Potentilla Anserina	VIII	61-65
200.	Potentilla Erecta	VIII	39-43
201.	Quassia	VI	74-78
202.	Quillaja Saponaria	VI	47-51
203.	Ranunculus Repens	VIII	47-51
204.	Resina laricis	VIII	91-95
205.	Resorcinum	VI	91-95
206.	Rhamnus Californica	VI	74-78

S. No.	Drug Name	HPI Volume	Alcohol Limit
207.	Ricinus Folia	X	32-36
208.	Rumex Acetosa	VIII	56-60
209.	Salvia Officinalis	VI	56-60
210.	Sambucus Canadensis	VI	47-51
211.	Santolina Chamaecyparissus	IX	65-69
212.	Saponaria Officinalis	VIII	56-60
213.	Sassafras	VII	74-78
214.	Scrophularia Nodosa	VI	47-51
215.	Sedum Acre	VI	47-51
216.	Sempervivum Tectorum	VI	41-45
217.	Siegesbeckia Orientalis	IX	37-41
218.	Silphium Laciniatum	VI	79-83
219.	Solanum Pseudocapsicum	IX	65-69
220.	Solanum Xanthocarpum	X	42-46
221.	Stachys Officinalis	VIII	56-60
222.	Stellaria Media	IX	43-47
223.	Stigmata maydis-zea (Zea Mays)	VI	37-41
224.	Strophanthus Gratus	VIII	91-95
225.	Strophanthus Sarmentosus	VIII	91-95
226.	Swertia Chirata	VIII	69-73
227.	Tarentula Cubensis	VI	46-50
228.	Teucrium Scorodonia	VIII	56-60
229.	Thymus Serpyllum	X	65-69
230.	Thymus Vulgaris	VIII	61-65
231.	Trichosanthes Dioica	VI	56-60
232.	Triosteum Perfoliatum	VII	56-60
233.	Tussilago Fragrans	VI	41-45
234.	Tylophora Indica	X	56-60
235.	Typha Latifolia	IX	56-60
236.	Ulex Europaeus	IX	65-69
237.	Ulmus Fulva	VI	56-60
238.	Vaccinium Myrtillus	VI	61-65
239.	Verbena Officinalis	VI	56-60
240.	Vernonia Anthelmintica	VI	91-95
241.	Vespa Crabro	VI	91-95
242.	Vincetoxicum Hirudinaria	VIII	61-65
243.	Wyethia Helenioides	VI	56-60
244.	Xanthium Spinosum	IX	61-65
245.	Yohimbinum	X	58-62