

PSORELEA →

Syn → Barchi.

B.S → They are dried ripe fruit of *Psorelea corallifolia* family leguminosae.

Description → Barchi is an erect annual plants about 60 to 125 cm in height.

- Stem as well as branches are grooved with glands and white hairs.
- leaves are 3.5 to 5 cm in size, broadly elliptical and rounded, white hairy and dotted with black glands on both surface.
- ~~and~~ lower glands are small, solitary in a bunch of 10 to 30 and arising in axils of leaves.
- They are bluish purple in colour.
- The plant flowers from August to December.

Macroscopic Characters →

Colour - Dark chocolate to black.

Odour - Non pungent and characteristic after crushing.

Taste - Bitter, unpleasant.

Size - 3 to 5 x 2 to 3 mm.

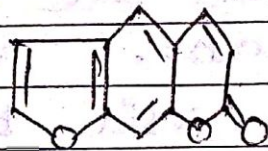
Shape - Pods are ovoid, oblong bean shaped.

- Compressed, glabrous closely pitted seeds, non endospermic, smooth oily and free of starch.

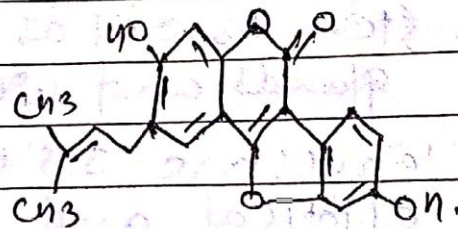
C.C→

- *Psoralea* fruits are found to contain essential oil (0.05%), resin (8.5%), brown fixed oil (10%), a pigment, raffinose and lauric compounds, Psoralen, IsoPsoralidin, Psoralidin, and Carylitalin.

Two more compound namely barachroman and Psoratenol have been reported.



Psoralen.



Psoralidin.

(3.5.4) Chemical Test→ A small quantity is dissolved in alcohol to which 3 times Propylene glycol, 5 times acetic acid and 40 times water added. A blue fluorescence observed under uv light.

- The drug shows yellow fluorescence in uv light when dissolved in alcohol and little NaOH solⁿ is added to it uses→ In treatment of leucoderma, Tinea, Psoriasis, inflammatory skin disease.

The seeds of *Psoralea* are used as Diuretic, Anthelmintic, laxative.

Adultrant Psorelea obliqua, lamina
obliquus, veins hairy.

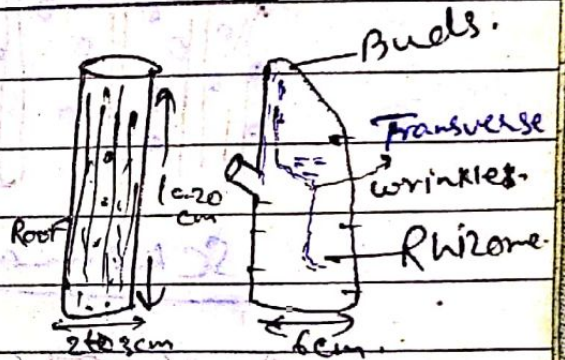
GENTIAN $\rightarrow$

Syn $\rightarrow$ Yellow Gentian Root.

B.s $\rightarrow$ Dried Roots and Rhizomes of
Gentiana lutea family Gentianaceae

Macroscopical characters $\rightarrow$

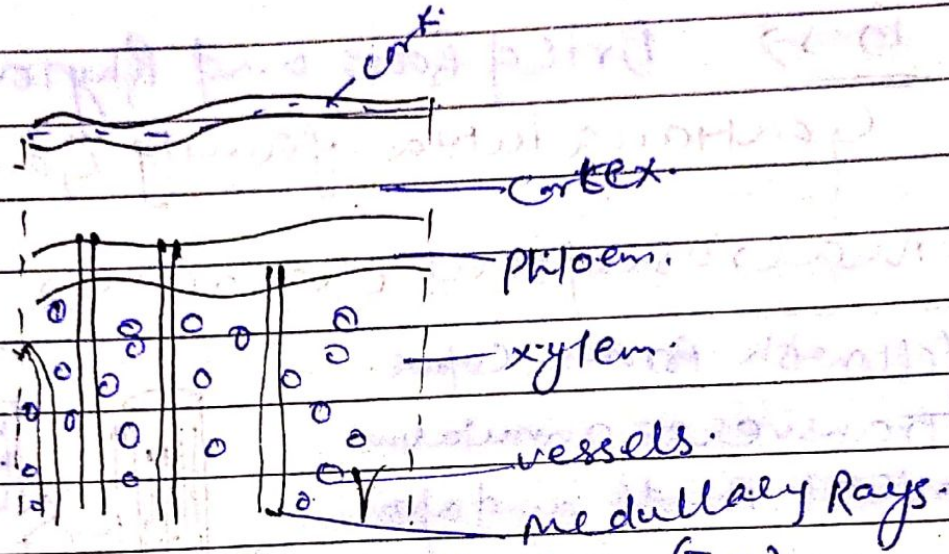
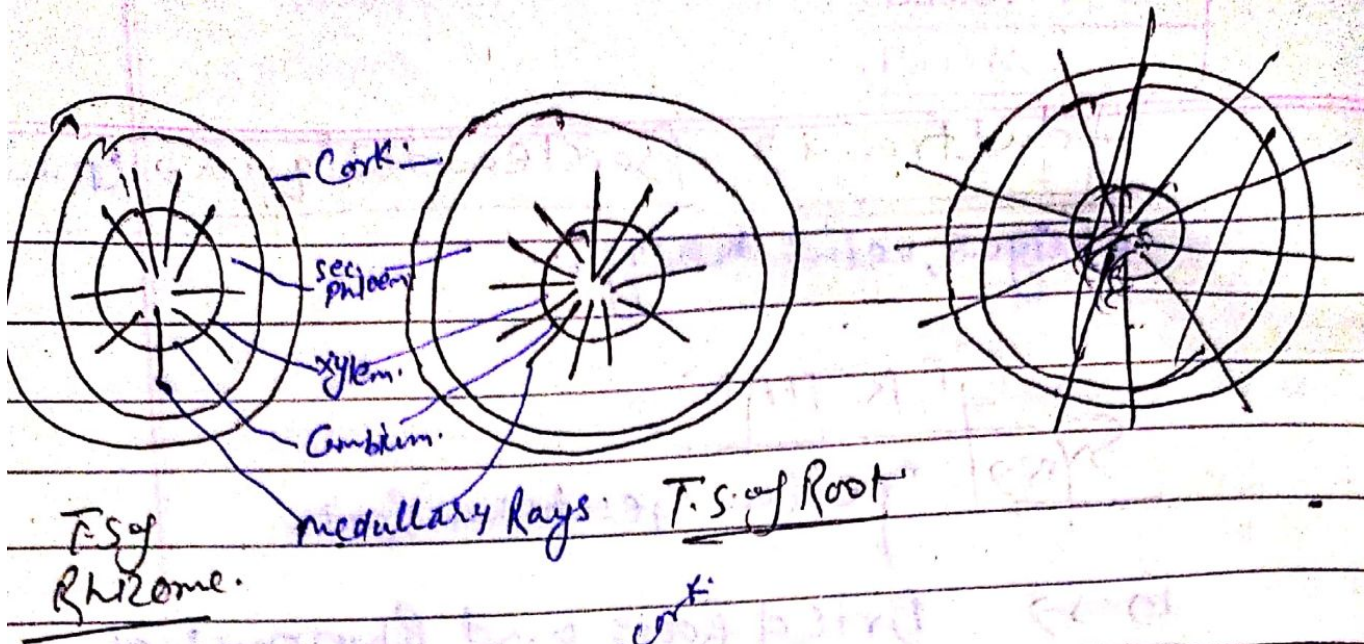
- * Yellowish Brown Color.
- * Transverse annulation.
- * conical Buds and apex.
- * Roots is narrow but continuous with Rhizome
- * longitudinally wrinkles.
- * Characteristic odour.
- * Taste - first sweet and then very bitter.
- * fracture short and brittle.



Microscopy $\rightarrow$ Contains Cambium Pith wood

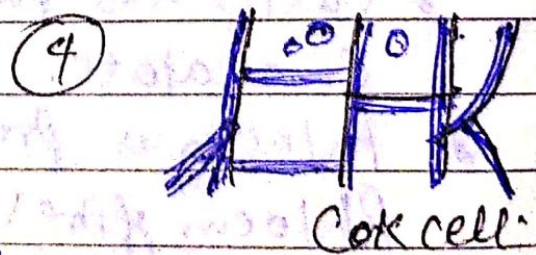
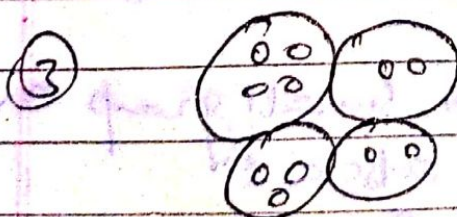
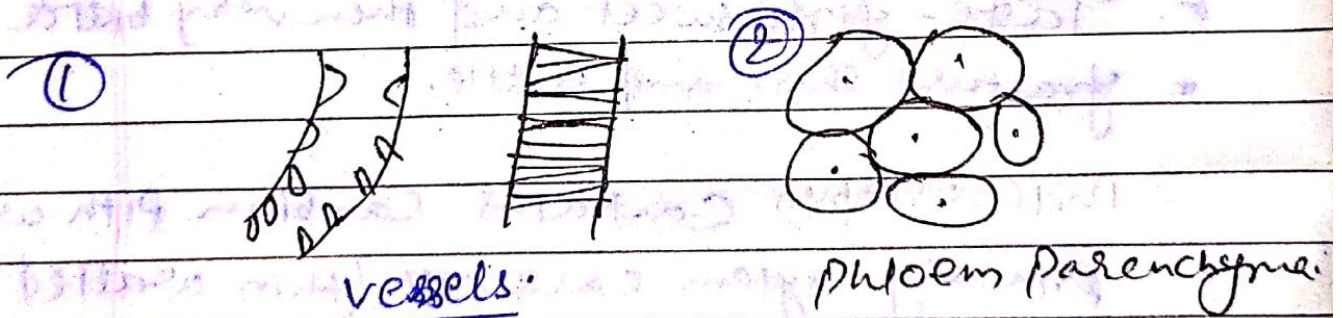
Primary xylem cork cells (thin walled)

- * Cortex has Parenchyma with oil globules & Ca.oxalate.
- * Phloem is present in small group and Phloem fibers are absent.
- * Xylems contains spiral, angular vessels.
- * No scleroids.
- * Inter xylem Phloem present.



Schematic diagram (T.S)

Microscopical characters of powdered drugs



Microscopic vessels,

- * fragments of lignified Reticulate, Annular and spiral vessels.

Phloem parenchyma: large cell with prominent nuclei with and inter cellular spaces.

Ca oxalate and oil globules, minute needle shaped crystal and oil droplets present as cell content and scattered.

COR cell → Brownish, thin walled, wavy cell containing oil globules; stone cells and fibers are absent. starch grains are almost absent.

C.C → The drug contains bitter glycoside mainly Gentiopicrosin, which is also called Gentiopicroside

- * Ammaron swallin, Gentioside, Gentisin.

- * It is a mixture of Gentiopicrosin and Gentisin contains flavanoid alkaloid called Gentiamin or Gentisin. this is of yellow colour.

- * Gentisin Insoluble in water and alcohol and 5% KOH it gives yellow solⁿ.

- * The oily materials drug contains Cholesterol

* Pectin is also present.

* water soluble extract should not less than 33%.

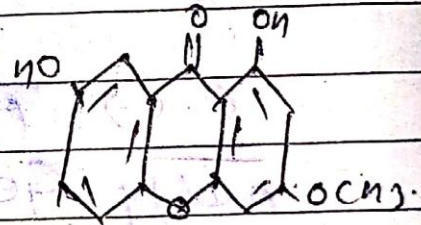
Note: In over fermented drug b/c of oxidation of sugar water soluble extractive is less. and in some inferior quality it is as low as 30 to 40% b/c usually prolonged fermentation converts sugar in alcohol and CO_2 due to which extractive value is less.

uses: Bitter tonic to stimulate the gastric secretion and hence improve the appetite.

C. str →



(Gentiopicroside)



Gentisin

Chemical test

with alkali give yellow colour.

Identification Test for Prodel drugs

S. N. Reagent observation Characters

- | | | | |
|---|----------------|--------------------|------------------------|
| ① | Phloroglucinol | Pink to red color. | Signified Symplocoside |
| ② | Sudan Red III | Red | oil globules. |
| ③ | Iodin | Blue | Starch. |

Allide dry and Adulterants

Gentiana Purpurea Root → about half the size of *Gentiana lutea* crowned with the remains of Aerial stems and covered below by scaly leaf.

Gentiana panchatata *Gentiana pannonica* → both are smaller than the official drugs.

Rumex alpinus → Rhizome Reddish brown and gives red. colour with caustic alkali.

Anthraquinone derivative present.

④ *Veratrum album* Rhizome is completely covered with root.

⑤ Indian Gentian (*Picrorrhiza kurroo*)

Ammi visnaga

B.S → Dried ripe fruits of
Ammi visnaga family
umbelliferae.

Cultivation & collection

The seeds is shown in Prepared.
Beeds on a well dried ^{loam} soil, usually
in August.

When about 6m high the plants
are transferred to an open
field and planted about
30cm apart in the rows.

• The flower in March April
oldest fruit of ripe crop
is cut with sickle in the early
morning.

• The plants are tied in bundles
and stocked in heaps for a few
days till the fruits are ripe,
the dried plants are threshed
on a clean floor, the stocks
separated by hand and the
fruits collected and ⁽⁴²⁻⁴⁵⁾ winnowed.

Ammi naga

↓
Fruit of Ammi naga
family → umbelliferae.

Cultivation & collection

• It is cultivated in
North India mainly
by some private pharma.

Central firm as well
as Central Institute
of medicinal and
Aromatic Plant.

• The propagation done by
seed which are mixed
with soil and sown
and a distance of 19cm.

• The sowing is done in
October. germination
TTP in a month.

Before sowing, firm
yard manured and
Super P₀₄ are added
to soil.

• The harvesting is done in
April, May, when the
plants bear immature
green fruits. The fruits
are dry and separated
by threshing.

Macroscopic

- umbelliferous fruits.
- separate mericarp with a few complete cremocarp.
- mericarp is planoconvex and is ovoid, lensolate.
- greenish brown and glabrous
- give yellowish 1^o ridges and 4 brown 2^o ridges.

Microscopic characteristics.

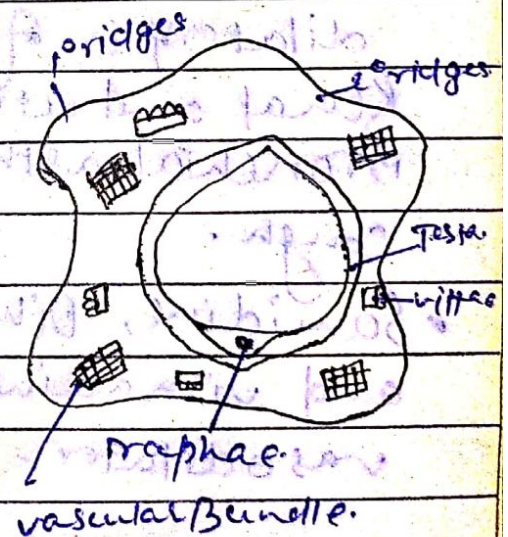
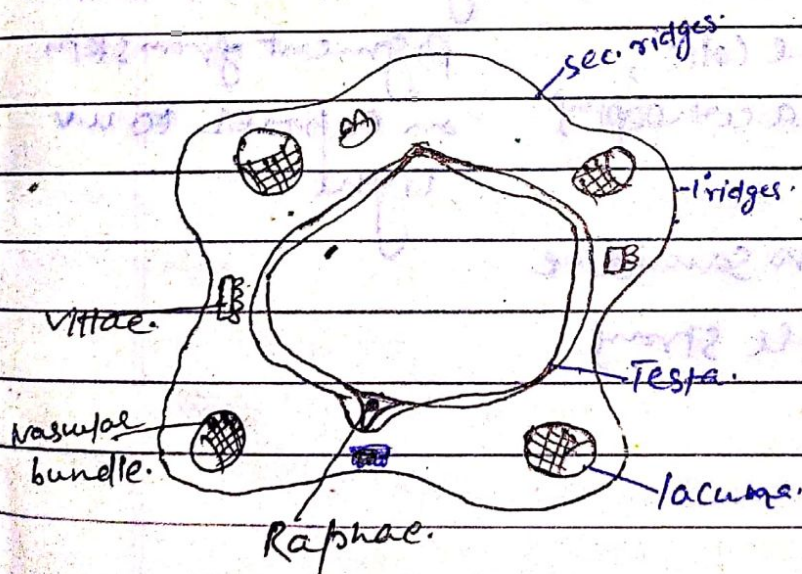
- T.S of mericarp shows 4 vascular bundles or strain.
- 4 vittae.
- large lacuna on the outer side of each vascular strain in the 1^o ridges.

Macroscopic

- The fruits resemble those of visnaga, except that they are small and passers 4 prominent 2^o ridges.

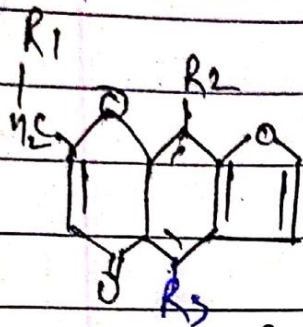
Microscopic

- No lacuna present in 1^o ridges



C.C →
 * 1% Khellin, 0.1% visnagin &
 0.3% Khelloside.

• oil present in drug contains
 - Samidine, dihydrosamidine
 and visnadine



Glucoside R1 R2 R3

visnagin: OCH₃ H H

Khellin: OCH₃ OCH₃ H

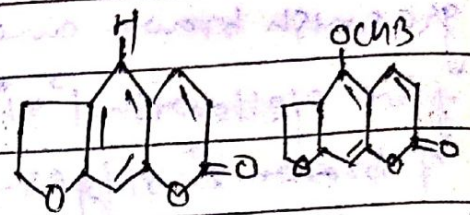
Khelloside: OCH₃ H Oglucoside.

uses → Smooth muscle
 relaxant, coronary vaso-
 dilatant in Angina Pectoris,
 Renal and uterine colic,
 Bronchial asthma whooping
 cough.

• Samidine, Dihydro samidine
 and visnadine are strong
 vasodilator.

C.C →
 Active ingredient of
 the fruit is xantho-
 -toxin

• other ingredients are
 bergapten, kopinidin,
 and imperatorin.



Xanthotoxin.

Bergapten

uses → Xanthotoxin is
 used to increase the
 formation of melanin
 pigment from skin
 on exposure to uv
 light.

SAFFRON. (Crocus) →

Syn. → Saffron, Kesar.

B.S. → Saffron consist of the dried stigma and tops of the styles of Crocus sativus family Iridaceae.

Cultivation and collection → The Corms ^(Plant Bulb like str.) are Planted in July and August in soil carefully prepared during the previous autumn.

- The first flowering T/P in September or October.
- After 3 harvest of flowers, the corms which have at least double in No., after are dug in May or June.
- The Best of these are reserved for planting in fresh ground in July or August.
- The flowers are gathered in the early morning. Placed in basket and conveyed to the picking house.
- The pickers takes each flower in termed in the left hand breaks style just below the stigma with the nail of the right thumb.
- The detached stigma are dried by artificial heat usually charcoal, stoves, over which they are placed in hair sieves.
- After 30 to 45 minutes the drug is cooled and stored in a dry place.

Macroscopic character

Colour - stigma dark red to reddish brown

Style - yellowish brown to yellowish orange

Odour - strong, characteristic and aromatic

Taste - characteristic and bitter

Size - stigma are 25mm long and styles about 10mm long.

Shape - stigma trifid and styles cylindrical

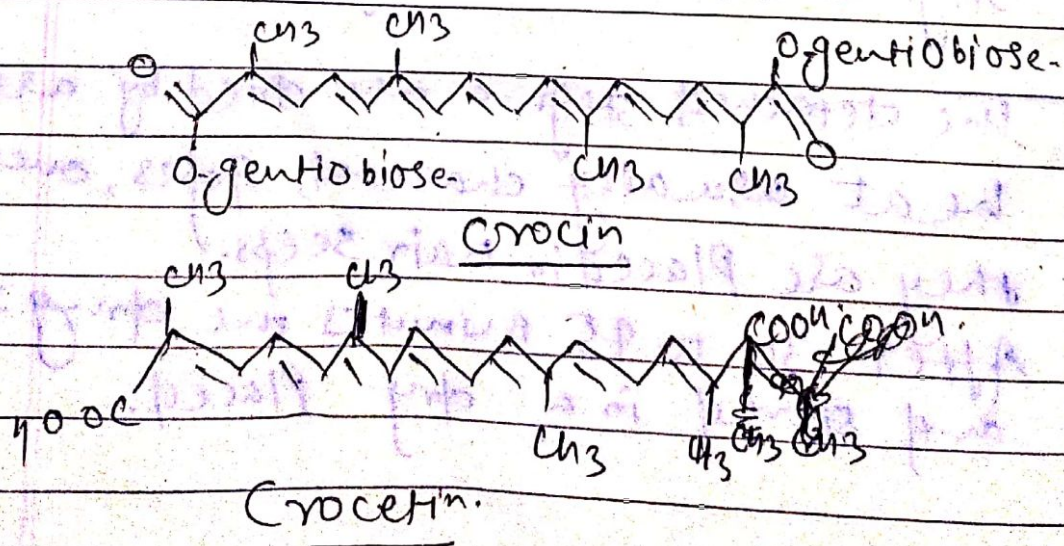
(C) Saffron contain red colouring matter k/a Crocin and crocetin, Bitter principle picrocrocin and Traces of volatile oil.

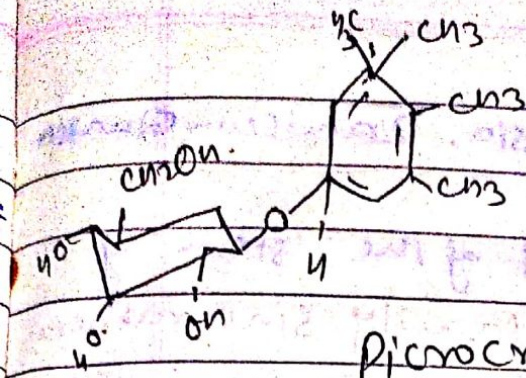
• Croto crocin, a carotenoid glycoside splits during drying into two molecules of Picrocrocin and one molecule of crocin.

Crocin $\xrightarrow{\text{hydrolysis}}$ Crocetin & gentiobiose.

Picrocrocin $\longrightarrow$ glucose and safranal.

Notes The Crocins are responsible for the blue colour when treated with conc H_2SO_4





Picrocrocin

α -crocin $\rightarrow$ Bluish red crystal.

β -crocin $\rightarrow$ reddish crystal.

γ -crocin $\rightarrow$ reddish crystal.

Chemical Test

① Add a drop of H_2SO_4 to dried stigma, it turns blue, gradually changing to purple and finally purple red.

② Saffron impart yellowish orange colour with water.

uses

Saffron used as a coloring (food dye) and flavouring Agent.

Adulterants Adulterated of Florets of Safflower.
- lower. Botanically known as *Carthamus tinctorius* family - Compositae which are orange colour.

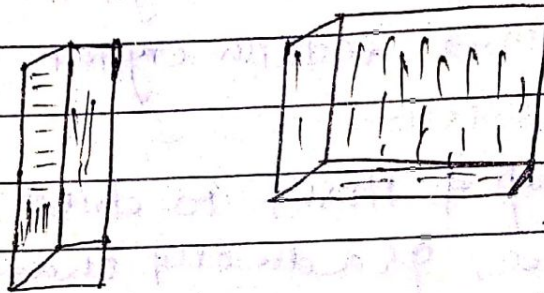
* Exhausted saffron re coloured by dyes.

Quassia

SYN. → *Lignum quassia*, *Zanicum Quassia*

B.S → Dried wood of the stem of
Aeschynomene excelsa family - Sinarubaceae

Macroscopy →



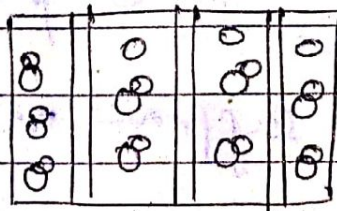
Colour - Pale yellow to Bright yellow
Odour - none.

Taste - very bitter.

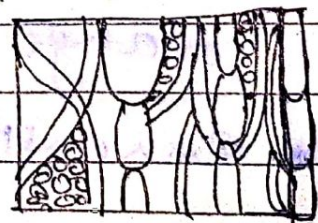
Shape - rasping, or shavings or chips.

Chips are planoconvex or concave
Convex.

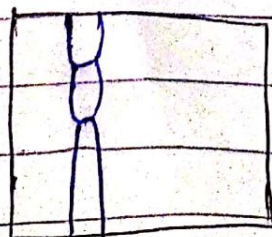
Notes wood is straight grain, diffused and
oily. Some times Black marking due
to the presence of mold.



T.S



T.L.S



R.L.S

Characteristics

Xylem fibres are thick walled, pitted, arranged in radial rows.

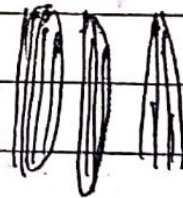
Xylem Parenchyma are small, polygonal, less pitted.

Few cells contain Ca oxalate prism.

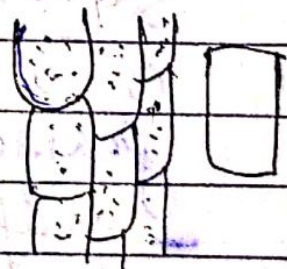
- Vessels big either single or in groups of few
- Medullary rays are prominent, uniseriate or tetraseriate radially elongated, pitted, contain few starch grains and Ca oxalate prism. Medullary rays are 6 to 10 to 15 to 30 cm height and 100 μ m in width.

Microscopic characters of Powdering

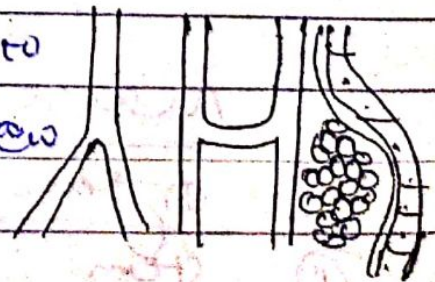
Xylem fibres $\rightarrow$ Xylem fibres crossing at right angles the medullary rays.



Xylem vessels $\rightarrow$ Numerous, bordered, pitted, thickening, frequently associated with other xylem vessels element.

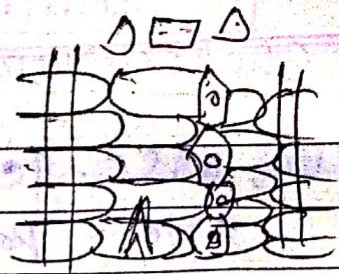


Medullary rays $\rightarrow$ Biseriate to tetraseriate tetraseriate, few are uniseriate.



Ca. oxalate crystal →

• Present Isolated are in
xylem parenchyma.



C.C → Bitter Principles of Terpenoid Nature
Quassin, Picrasmin, Neoguanin.

use →

Bitter tonic, Anthelmintic.

Substituent →

① → Solanum Quassia → (Quassia amara)

• Ca. oxalate present

• medullary rays are usually one cell wide.

② Exhausted Quassia → less Bitter test

• low aqueous extractives

KALMEGH → (Andrographis)

Syn → Bhunimba.

B.S → It consists of dried Aerial parts
peripherally leaf and stem of Andro-
graphis paniculata family. Acanthaceae.

macroscopic

organ

① Stem.

Characteristics.

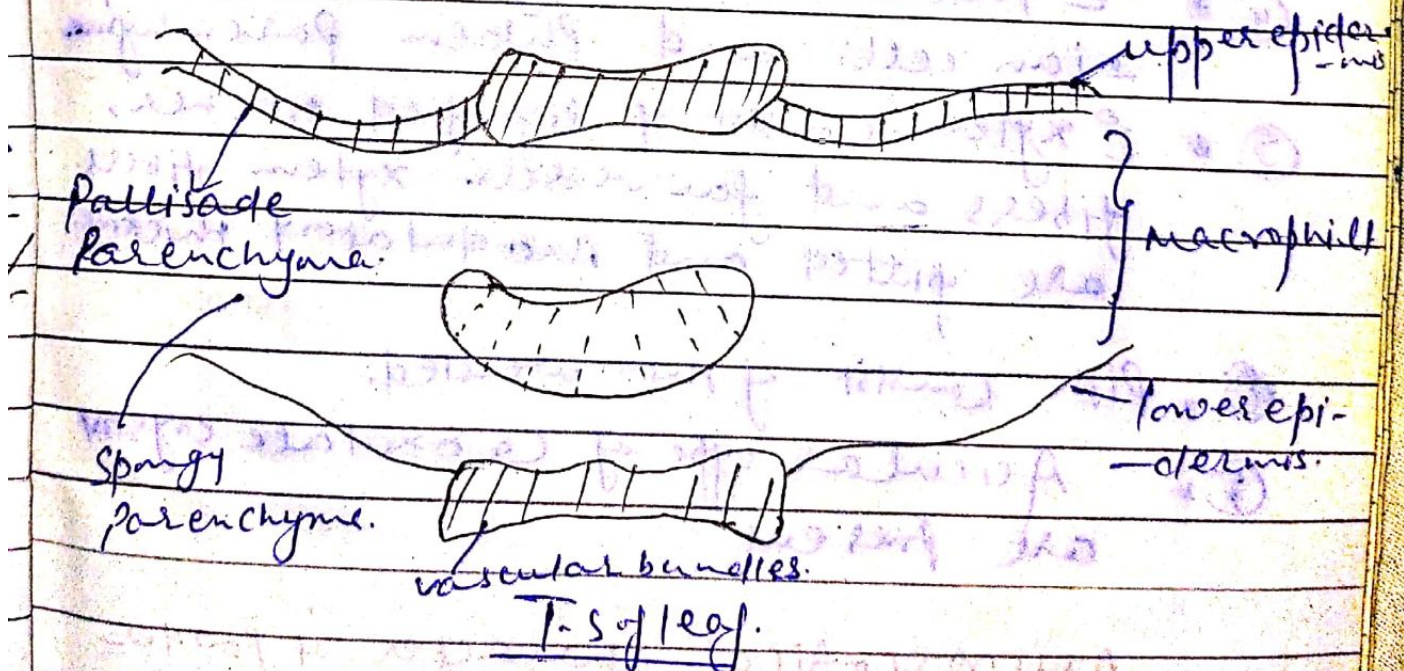
Green woody annual
& erect, upto 1 m metre
height bearing numerous
branches. upper part

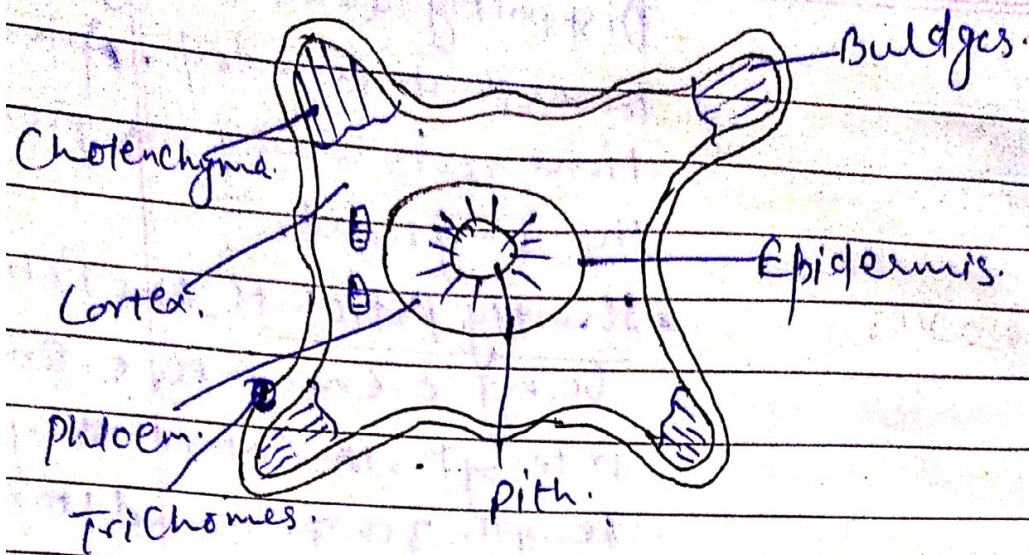
- Distinctly quadra angular, lower part rounded. Adventitious roots which are green, thin and hard.

② leaves →

- Shortly petiolate, the petiole being 0.6 mm to 0.8 mm in length, lanceolate shape, length 3 to 7 cm and 1 to 2.5 cm width entire. Margin cap-sin base, equiminate apex, reticulate venation with 4 to 6 pair of 2 veins on the lamina. Odour is faint and taste is bitter.

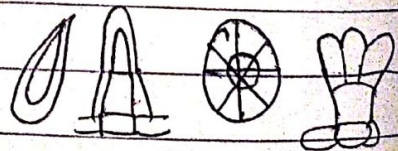
③ Microscopical characters →





- * 4 Bulges at the 4 corner of the stem
- ① Epidermis single layer of cubical cells with straight wall, surrounded by cuticle many glandular and covering trichomes are present.
- ② * endodermis distinct and followed by a single layer of Pericycles.
- ③ * Pericycle small thin walled cells.
- ④ * 2^o Phloem consist of sieve tubes, companion cells and Phloem parenchyma.
- ⑤ * 2^o xylem. consist of lignified trachea, fibers and few vessels. xylem fibers are pitted and nodulose thickening.
- ⑥ * Pith consist of thin walled.
- ⑦ * Acicular type of Ca oxalate crystals are present.

Microscopical character of powder
drugs
covering trichomes
unicellular, bicellular.



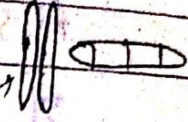


Stomata → walled straight walled

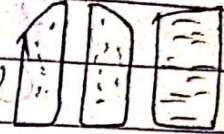
Polygonal epidermal cell with

Diacytic stomata

fibers → pitted xylem fibers.



vessels → lignified pitted walled.



Chemical Test → Aqueous extract + ferric chloride, dark coloration

or aqueous extract + Dil KMnO_4 → decolorization of KMnO_4 .

C. C → Diterpene lactones 0.5 to 0.9 % andrographolide, andrographanin, deoxyoxo-andrographolide, Neo Andrographolide and Andrographiside and flavanoids oxoxyline, Andrographidine A, B, C, D, E and F.

uses → Bitter tonic, febrifuge, Hepato-protective.

Adulterant & substitute →

Chirayita swertia → stem green color. Andrographis Echisoides - Andrographolide is not present.