

Rhubarb ⇒

B.S ⇒ Dried Rhizomes of all various sp. of *Rheum* such as *Rheum palmatum*, *Rheum officinale* family *Rheum emodi* family *Polygonaceae*.

Collection

Drug is collected from high altitude over 3000 meter and from 6 to 10 years old plants. Dugs in Autumn or spring (i.e. b/w Sep. to October) before flowering.

Imp ⇒ The drug should contain Not less than 2.5% of hydroxy anthraquinone derivatives calculated as Rhein.

Indian Rhubarb ⇒ It is obtained from *Rheum emodi* family *Polygonaceae*.

Morphology ⇒ Rhizome occurs in two form.

① Flat peices.

② Round peices.

* In flat peices from larger Rhizomes, 7 to 10 cm long, 3 to 6 cm thick, round from smaller Rhizomes, 8 to cm long 4 cm thick.

* Odour - fragrant.

Taste - Bitter.

Colour - Brown or yellow.

- The outer surface is commonly dusted over with powdered rhubarb in the form of fine yellow powder to give them a good appearance.
- * Good quality rhubarb gives pink granular fracture.

- Generally the drug breaks with an uneven short fracture and the fracture surface, which varies from light pink to dull gray in color exhibit numerous small dark reddish orange like alternating with white once like Nutmeg fracture.

Microscopy: A transverse section shows

- ① Cambium - A fairly continuous line b/w xylem and phloem.
- ② Phloem outside the cambium.
 - * Radial 2° xylem, inside the cambium
 - * vessels, Reticulate cellulose thickening gives no reacⁿ for lignin.
 - * Reddish orange medullary rays.
 - * large pith in the center.
 - * Starch spot at the periphery of the pith & scattered all throughout the pith.

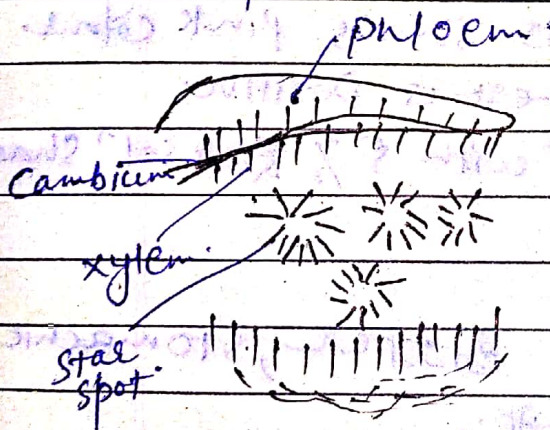
- Abundant starch in parenchyma.
- Cluster crystal of Ca oxalate in parenchyma, 20 to 500 μm in diameter.
- Sclerenchymatus and cork are absent.

Powder characteristics →

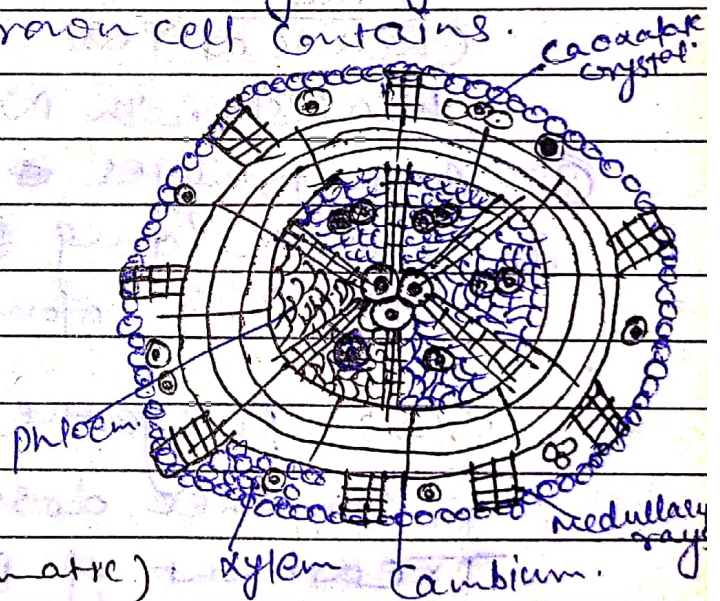
xylem vessels with unthickened Reticulate thickening.

- starch grains, rounded or angular, simple or 2 to 5 compound with helix 4 to 18 μm in size.
- Ca oxalate cluster crystal present.

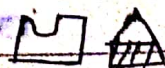
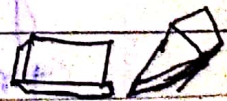
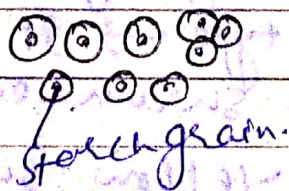
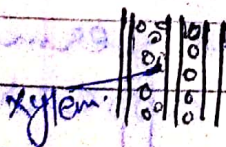
• Cells of the medullary rays with yellowish brown cell contents.



T.S of Rhizome (Diagrammatic)



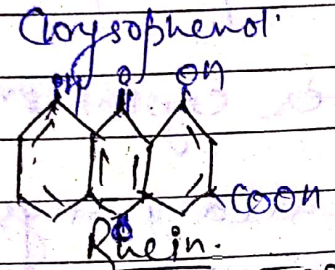
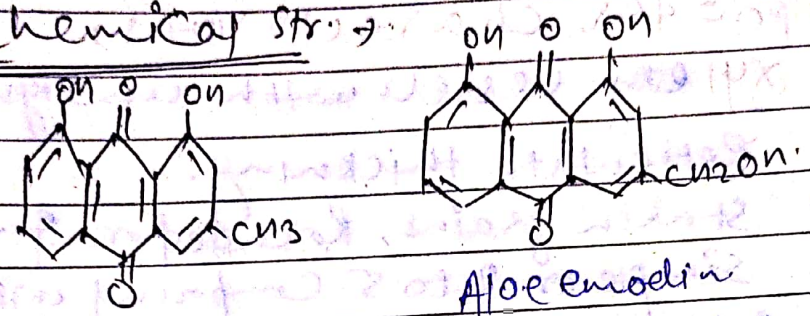
T.S through star spot (cellular)



Crystal of Ca oxalate.

C.C) Contains no. of Anthraquinone derivatives. Chrysophanol, Emodin, Aloe emodin, Rhein. also contain cinnamic acid, gallic acid, Rhein acid.

Chemical Str.



Chemical Test ① Powdered drug heated with NH_3 shows pink colour.

- ② Born tragger test is positive.
- ③ Powder drug with 5% KOH solⁿ shows blood red colour.

uses) Purgative, Bitter, stomachic in smaller dosage;
Treatment of Diarrhoea.

qualities) ① high grade obtained from shensi type → It has fern fracture non shrunken appearance and a bright yellow surface showing white reticulation.

② Medium grades obtained from Canton type - grayish patches on outer surface on granular surface, fracture surface is a pink colour.

③ IIIrd grade or lower grade (also known as highly dried Rhubarb) → smaller pieces only a small % age show a good pink fracture and the remainder of a gray or brown fracture.

Adulterants, ① Chinese Rhabarbarics - Radiated str., Darker colour, Sweetish odour.

② Indian Rhubarb consist of dried rhizome and roots. Cork cells are present in the pith, freshly fractured surface is dull orange to yellowish brown.

③ English Rhubarb → Both *R. officinale* or *R. rhabarbarum* where firmly grown drug but cultivation appears to have ceased.

④ Japanese Rhubarb a hydrate of *R. coreanicum* and *R. palmatum*.

Specific Characteristics

- Distinct sweet odor.
- It contain Rhaponticum.
- Alcoholic extract of this ~~extr~~ under ~~uv light~~ give bright blue fluorescence.

Notes In fresh drugs there all present as reduced form but during storage they oxidised

Notes Anthrone is the pale yellow colour not soluble in alkalis and give No fluorescence

Notes Anthrone it is brownish yellow Soluble alkali give strong fluorescence

