

Stramonium (<i>Datura stramonium</i>)	Stomata on the upper surface few, lower surface many, calcium oxalate in crystals, trichomes conical, palisade one row with well marked crystal layers.
Henbane (<i>Hyoscyamus niger</i>)	Stomata on the upper surface few, lower surface many, cruciferous, calcium oxalate present, trichome large, ovoid well marked crystal layers in the mesophyll.
Henna (<i>Lawsonia inermis</i>)	Stomata Ranunculus type, trichomes absent, calcium oxalate in clusters, mesophyll differentiated epidermis over the veins is strongly striated.

Some important plants with histological characters

(Flowers)

Name	Characters
	<i>Floral Members</i>
Clove (<i>Eugenia aromatica</i>)	Stalks contain calcium oxalate, epidermis of calyx is glabrous with stomata, corolla glabrous with oil glands and calcium crystals. Oil glands present in the apex of connective, pollen grain 15-20 μ triangularly lenticular, few pericyclic fibres are special features, aromatic with pungent taste.
Lavender (<i>Lavendula officinalis</i>)	Calyx contains triangular trichome, corolla with labiate glandular trichomes, anther wall bears long trichomes, pollen grains spherical 38-42 μ .
Arnica (<i>Arnica montana</i>)	Calyx modified with pappus bristles 5-6 cell wide, corolla ligulate, pollen grains spherical with 3 pores 40-52 μ in diameter.

(Contd.)

*Rauwolfia serpentina***I. Physical Observation:-**

- (a) Colour — Pale brownish yellow.
- (b) Odour — Slight.
- (c) Taste — Bitter.
- (d) Fineness and degree of uniformity of particles:- Moderate.
- (e) Sensation of Smoothness — Smooth.

II. Microscopical Observations:

(a) **Starch Grains:** Abundant, mostly simple but compound granules were also found 2, 3/4 components, individual granules were spherical to irregular often large. 5-20 μ , usually has a well-marked hilum in the form of a simple/radiate split.

(b) **Calcium-oxalate crystals:** They were scattered and in small groups in some of the parenchymatous cells of phloem and medullary rays: They were irregularly prismatic and showed variation in size.

(c) **Xylem fibres:** Numerous, irregular in shape, occur singly or in groups associated with vessels. Walls were lignified, moderately thickened and had small, slit shaped pits.

(d) **Pericyclic fibres:** Very large, unlignified, with unevenly thickened walls and frequently showed elongated ovoid arrangement at one end.

(c) **Vessels:** Single or in groups. They were fairly narrow with moderately thickened lignified walls and very small, numerous bordered pits. 36-54 μ in diameter. They had a single perforation in the laeral walls at a short distance from the tapering ends.

(d) **Stone cell:** None.

(e) **Cork:** Many fragments of straitified reddish brown cork composed of polygonal cells. Some of which were lignified were observed.

(f) **Parenchyma:-** Abundant fragments of lignified parenchyma filled with starch granules and composed of polygonal cells with moderately thickened walls. Xylem parenchyma was usually associated with tracheidal vessel.

Identifying Characters:

- (a) Leaf and flower elements absent.
- (b) Abundant parenchyma, starch numerous.

- (d) *Melotria heterophylla* Kundri; *Momordica balsamina*, Mikha, *M. charantia*, Jungli Karela; *M. cochinchinensis*, Kokrol, *M. dioica*, Kakawra
88. *Kekuna* Oil obtained from the edible nut of *Aleurites moluccana* Euphorbiaceae is used in
 (a) Paint, varnish industries (b) As a hair tonic
 (c) Cooling purposes (d) For making candles
89. Which of the following trees yield oils
 (a) *Argemone mexicana*, *Artemisia absinthium*, *Azadirachta indica*, *Balanites aegyptiaca*, *Berberis aristata*, *Bombax malabaricum*
 (b) *Buchanania lanzan*, *Calophyllum inophyllum*, *Cannabis sativa*, *Carallia brachiata*, *Carthaus olycantha*, *Carthamus tinctorius*, *Cedurs deodara*, *Ceiba pentandra*
 (c) *Cinnamomum tamala*, *Cocos nucifera*, *Diplokena butyracea*, *Garcinia indica*, *Garcinia morella*, *Jatropha curcas*
 (d) *Mimusops elengi*, *Moringa oleifera*, *Palaquium ellipticum*, *Pongamia pinnata*, *Ricinus communis*, *Schleichera oleosa*.
90. *Rogherun* oil, very much used by the peshawari artizan for the manufacutre of Afridi wax cloth; oil clothes, Tarpaulins and tent cloth:used for greasing well ropes, well buckets and leather articles used for drawing water from wells is obtained from the seeds of
 (a) *Carthamus oxycantha*, Kantiari, Compositae
 (b) *Carthamus tinctorius*, Kusumba, Compositae
 (c) *Helianthus annuus*, Surajmukhi, Compositae
 (d) *Lactuca serriola* Kahu, Compositae
91. Which of the following oil is used in food, for pressurings leather goods and in white paints
 (a) Safflower oil (b) Poli Oil
 (c) Roghien Oil (d) Kikuna Oil
92. *Phulwara* Butter, an edible vetable butter used as a substitute for ghee and also for cocoa butter is obtained from seeds of
 (a) *Achras sapota*, Sapodilla, Sapotaceae
 (b) *Sideroxylon indicum*, Sapotaceae
 (c) *Bassia latifolia*, Mahua, Sapotaceae
 (d) *Diploknema butyracea*, phulal, Sapotaceae

183. Devdaru, *Cedrus deodara*, Pinaceae is indicated in Ayurvedic medicine in
- (a) Ascites, cough, diarrhoea and dysentery
 - (b) Dropsy gravel in Kidney and bladder
 - (c) Headache and heart palpitation, inflammation leprosy
 - (d) Paralyse, pulmonary troubles, urinary diseases, ulcers and skin diseases.
184. Oil much used for preserving *leather bags* used for floating in water.
- (a) Castor oil
 - (b) Til Oil
 - (c) Mustard oil
 - (d) Cedrus wood oil
185. *Kelon-ka-tel* the best repellent to insects and fleas is obtained from
- (a) Castor Seed
 - (b) Til Seed
 - (c) Flax seed
 - (d) Cedrus wood
186. Which of the following are used to make *screens* to ward off heat-wave in summer.
- (a) *Tribulus terrestris*, gothru, Zygophyllaceae
 - (b) *Peganum, harmala*, Harmal, Zygophyllaceae
 - (c) *Cynodon dactylon*, Poaceae
 - (d) *Fagonia cretica* Dhuanasa, Zygophyllaceae
187. Amino acids found in the leaves of bhringaraj, *Eclipta alba*, Asteraceae
- (a) Leucine, Isoleucine
 - (b) Valine, Phenylalanine
 - (c) Methionine, glycine, glutamine
 - (d) Glutamic acid, cysteine
188. Which of the following are medicinal users of bhringaraj, *Eclipta alba* leaves?
- (a) Ear and eye troubles, headache
 - (b) Hepatic and spleen enlargement, liver cirrhosis; live protector against toxic drug and alcohol.
 - (c) Skin diseases, toothache and wind trouble
 - (d) All these
189. Tea leaves quickly dried after gathering, so that their colour and other characters are retained.
- (a) Black tea
 - (b) Green Tea