

Part V:

**UNORGANIZED DRUGS**

### Test for identity:

0.4 gm powder and 3cc. alcohol 0.5cc. KOH , shake gently no ~~gelatinization takes~~  
place with american podo phyllum resin but stiff jelly with indian podophyllum resin

### Constituents:

Podophyllotoxins ,  $\beta$ - peltatin and  $\alpha$ - peltatin as free or as glycoside  
, demethylpodophyllotoxin ,its glycosides, desoxypodophyllotoxin and  
podophyllotoxin (these possess cytotoxic activity)

### Uses :

- 1- Purgative but replaced by less drastic drugs as it has cytotoxic action.
- 2- Externally, in treatment of warts.

## BALSAMS

Balsams are oleo-resinous, solid or fluid pathological mixtures containing large proportions of balsamic aromatic acids; i.e. cinnamic and benzoic acids, either free and/or combined as esters. They are obtained from plants by incision and tapping.

### 1. BALSAMUM BENZOINUM

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#### Constituents:

##### Sumatra Benzoin:

\* A resinous substance known as benzo resin (75 %): This consists of an ester of cinnamic acid (92%) and resinotannol and an ester of cinnamic acid and benzo resinol. On decomposition, benzo resin yields 30 % of cinnamic acid, 64 % of resinotannol and 5 % of benzo resinol.

\* Sumatra benzoin also contains 17 % of cinnamic acid, 9 % of benzoic acid (free and in combination); traces of benzaldehyde, vanillin and cinnamic cinnamate.

#### Uses and Actions:

1. Externally: Benzoin possesses antiseptic and stimulant properties.
2. Internally: It has carminative, antiseptic, expectorant and diuretic properties.
3. A component of incense and in perfumery industry.

## Myrrh

It is an olco-gum-resin obtained from the stems and branches of *Commiphora myrrha*, *C. molmol* and other species of *Commiphora*, Fam. Burseraceae

### Constituents

- 1- 1.5-17% volatile oil composed of limonene, pinene, cinnamaldehyde, cadinene.
- 2- Resin consists mainly of  $\alpha$ - and  $\beta$ - commiphoric acid and commiphorinic acid
- 3- 60% gum which on hydrolysis yields arabinose, galactose, xylose and 4-O-methylglucuronic acid.

### Test for identity

Triturate about 0.5g of Myrrh with 1g of sand and shake with 10ml of ether. Filter, and evaporate in a porcelain dish. Add few drops of nitric acid to the residue where a purplish violet colour is produced.

- 1- Mouth wash
- 2- Uterine stimulant and emmenagogue

## Dried Latex

Latex is an emulsion or suspension where the continuous phase is an aqueous solution of mineral salts, protein, tannins, gum, proteins and starch. Latex is often white in colour e.g. Opium, buff e.g. Papain, yellow or red.

## Opium

It is the latex obtained by incision from the unripe capsules of *papaver somniferum* Fam. Papaveraceae and dried partly by spontaneous evaporation and partly by artificial heat.

## Constituents

- 1- Alkaloids. It contains about 25 different alkaloids, which occur in combination with meconic acid. The most important alkaloids are morphine, codeine, narcotine, thebaine and papaverine.
- 2- Mucilage, wax and sugar.

## Test for identity (test for meconic acid)

Warm 20-30mg of powdered opium in 2-3ml of water for few minutes and then filtering. Add few drops of 5% ferric chloride solution to the filtrate where a purplish red colour is produced and not destroyed by addition of hydrochloric acid or 5% mercuric chloride

## Uses

- 1- Hypnotic, analgesic and sedative
- 2- Astringent
- 3- Cough sedative

## Dried juice

### Aloe

It is the solid residue obtained by evaporating the liquid, which drains from the cut leaves of *Aloe vera* known in commerce as Curacao Aloes, *Aloe verox* known in commerce as Cape Aloe or *Aloe perryi* known in commerce as Socotrine or Zanzibar Aloe, Fam. Liliaceae.

## Characters

It occurs in dark chocolate brown, usually opaque masses. The fracture is dull and waxy. It has characteristic disagreeable odour and nauseous very bitter taste.

## Constituents

- 1- Anthraquinones e.g. Aloin, barbaloin, isobarbaloin, emodin and chrysophanoic acid.
- 2- Saccharides e.g. cellulose, glucose, mannose and L-rhamnose.
- 3- Enzymes e.g. oxidase, amylase and lipase
- 4- Vitamins e.g. B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, C, E, folic acid and  $\beta$ -carotene
- 5- Minerals e.g. calcium, sodium, manganese, magnesium, zinc and copper.

## Test for identity

Boil about 0.5g of powdered aloe with 50ml of water for 2-3 minutes. Clarify with kieselguhr and filter. Carry out the following tests:

- 1- Borax test: Add 0.2 g of borax to 5ml of filtrate and heat. Pour 2-3 drops of the dark fluid into water where a green fluorescence is produced.
  - 2- Bromine test: Mix equal volumes of the filtrate and saturated solution of bromine where a yellow precipitate of tetrabromaloin is formed.
- ~~Modified Borntrager's test~~

## Uses

- 1- Topical: Wound healing, sunburn, hair tonic and minor skin irritation
- 2- Oral: Constipation and peptic ulcers

## Extracts

This group includes drugs prepared by evaporating aqueous decoction of whole or parts of certain plants or animals.

## Gelatin

It is the protein obtained by boiling the collagous tissues of animals such as skin, tendons, ligaments and bones with water, evaporating the aqueous extract and drying the residue in air.



### Constituents

It is formed mainly of protein and gluten

### Tests for identity

- 1- When it is heated with soda lime, ammonia odour is evolved
- 2- 2% hot aqueous solution gelatinize on cooling
- 3- The aqueous solution gives a precipitate with solution of tannic acid and lead subacetate.

### Uses

- 1- Nutrient
- 2- Basis for glycerin suppositories
- 3- Preparation of nutrient medium for bacterial growth

## Gums

Gums are abnormal products resulting from pathological conditions caused by either injury or by unfavourable conditions of growth and are usually formed by changes in the existing cell-walls

### Gum Arabic

It is the dried gummy exudation from the stem and branches of *Acacia Senegal* or of some other African species of *Acacia* family Leguminosae

### Constituents

- 1- Arabin (Ca, Mg and K salts of Arabic acid)
- 2- Enzymes as oxidase and diastase

### Test for identity

#### Test for oxidase enzyme

Dissolve about 0.25g of the powdered drug in 5ml of distilled water by shaking and cold. Add 0.5ml of hydrogen peroxide and 0.5ml of benzidine solution, shake and allow to stand for few minutes where a deep blue colour is formed.

#### Uses

- 1- Manufacture of emulsion
- 2- Demulcent for inflammation of the throat or stomach

## Gum tragacanth

It is the dried gummy exudation obtained by incision from the stem of *Astragalus gummafer* family Leguminosae

#### Constituents

- 1- Acid portion named tragacanthic acid
- 2- Neutral polysaccharide
- 3- Derivatives of sterol glycoside
- 4- Starch and cellulose
- 5- No oxidase enzyme

#### Tests for identity

- 1- Add few drops of N/50 iodine solution to the powder where an olive green particles will appear
- 2- Negative test for oxidase enzyme

#### Uses

- 1- Emulsifying and thickening agent
- 2- Binding agent in tablets
- 3- Tooth paste and hand lotions.