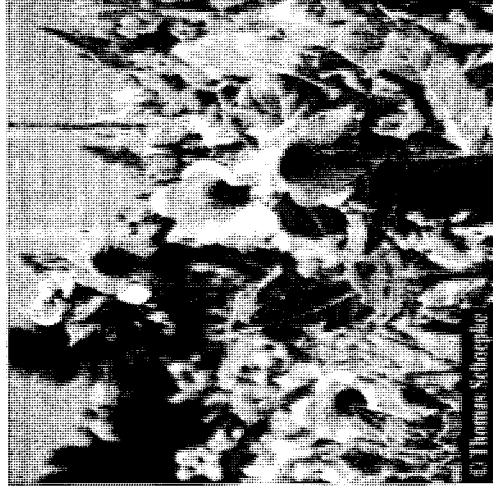


## Hyoscyamus leaf

### أوراق البنج

- Used part: dried leaves and flowering tops
- يستعمل منه الأوراق والبرؤوس المزهرة
- Latin name: *Hyoscyamus niger*. الاسم اللاتيني
- Family: Solanaceae الفصيلة الباذنجانية
- The plant is annual or biennial. نبات عشبي حولي الى ثنائي الحول
- Origin: Europe and Mediterranean countries. منشأه الجغرافي حوض المتوسط وأوروبا.



## Microscopical characters

- A transverse section of a leaf shows: **يبدي المقطع العرضي للورقة :**
- Both surfaces are covered with a smooth cuticle and possess stomata and hairs.
- Cluster crystals of calcium oxalate are abundant in the mesophyll.
- Uniseriate not clothing hairs
- Small glandular hairs
- Big glandular hairs with clothing head

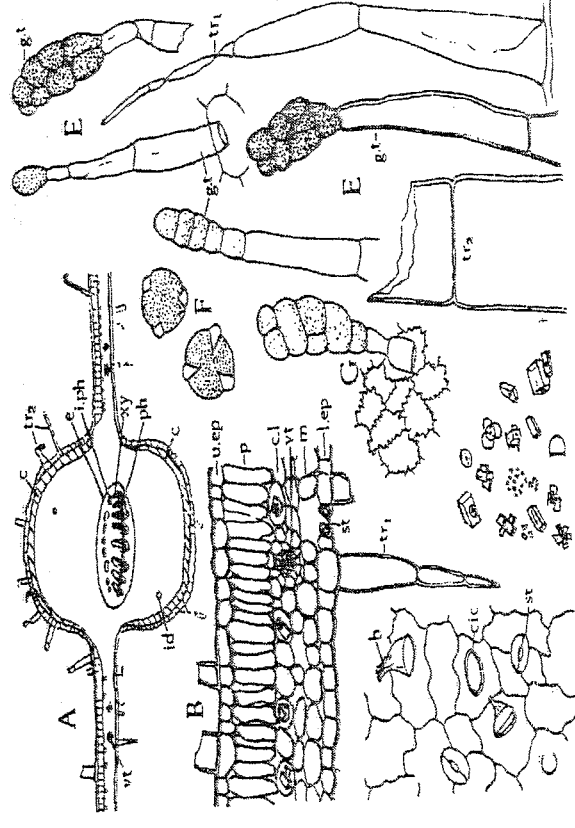
## Macroscopical characters

- The commercial drug henbane contains **يسمى العقار تجاريا بالهنبانه** Leaves and flowers.
- henbane leaves have heavy odour, and bitter, slightly acrid taste. **رائحة الأوراق شديدة. وهي بطعم مر ولاذع خفيف**
- Flowers have a yellowish corollas with purple veins. **التويجات بلون ضارب للأصفر وذات اعصاب أرجواني**

## Constituents

- Henbane leaves contain 0.045% Alkaloids and 8-12% of acid-insoluble ash (*BP* not more than 12%). غير ذواب بالحمض
- Hyoscyamine and Hyoscine are the principal alkaloids. الهوسيامين والهوسين هي القلويدات الرئيسية

## Hyoscyamus leaf



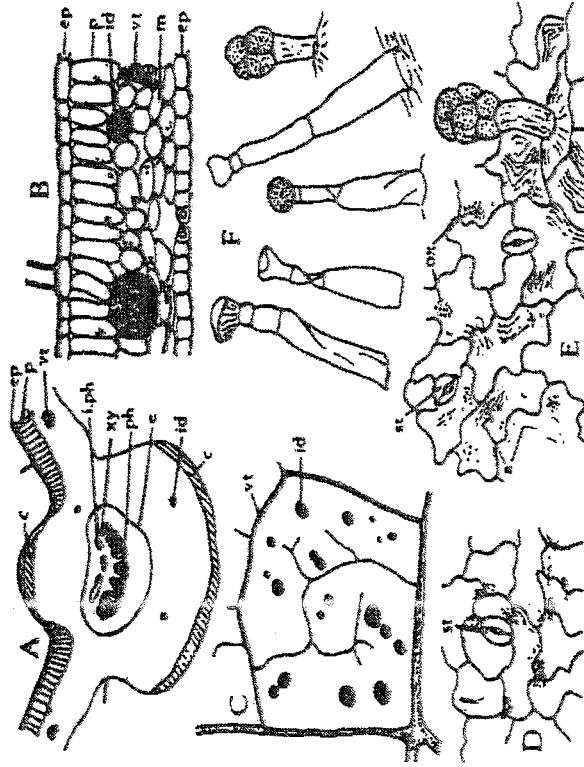
## Belladonna Herb

- Used Parts: Belladonna Herb BP consists of the dried leaves and flowering tops. Also roots can be used.
- Latin name: *Atropa belladonna*
- English name: nightshade, a perennial herb with about 1.5 m height.
- Family: Solanaceae
- Origin: Europe

## Uses of Henbane

- Henbane resembles belladonna and Stramonium in action but is somewhat weaker. يشابه تأثير الهيبانة تأثير كل من البلادون (اللفاح) والبنج ولكنه أضعف
- Henbane is often used to relieve spasm of the urinary tract and with strong purgatives to prevent griping. غالباً ما تستخدم الهيبانة لتخفيف تشنج الطرق البولية ولحد من المعص المحدث نتيجة استعمال المسهلات الشديدة.

# Belladonna Herb



## Uses

- Belladonna leaves are mainly used for internal preparations which are used as:
  1. Sedatives
  2. To check secretion
- Preparations of the roots are mainly used externally.

## Constituents

- 0.3-0.6% alkaloids, the chief compounds is hyoscyamine.
- Small amount of volatile bases such as pyridine and N-methylpyrrolidine
- The leaves also contain a fluorescent substances such as scopoletin
- Calcium oxalate.

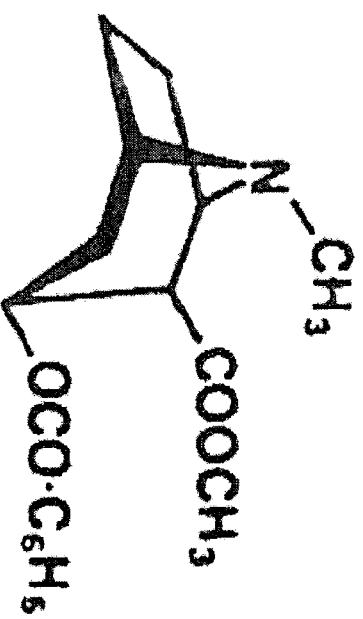
## Microscopical Characters

- A transverse section of the leaf shows;
1. Upper epidermis
  2. Palisade parenchymatous containing prisms of calcium oxalate
  3. Spongy parenchyma
  4. Lower epidermis with stomata
  5. Pericyclic fibres surround the midrib.

## Coca leaf and Cocaine الكاكو

- Latin Name: *Erythroxylum coca*,
- Family: Erythroxylaceae حمراوات الخشب
- Used parts: the leaves
- Origin: Bolivia and Peru

## Coca leaf

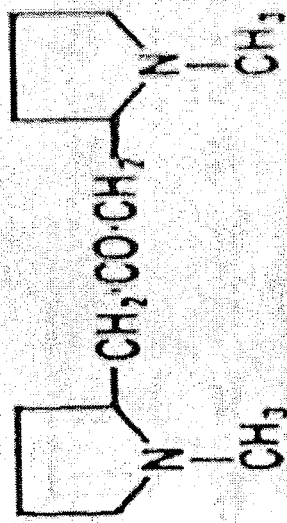


**Cocaine**

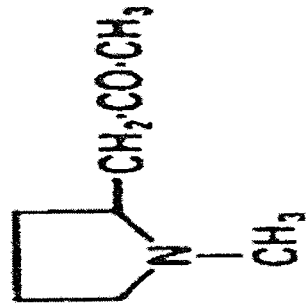
## Constituents

- 0.7-1.5% Alkaloids, of which cocaine, cinnamyl-cocaine and α-truxilline
- Hygrine, Hygroline
- Tropacaine
- Cocatannic acid
- Essential oil
- Methyl salicylate

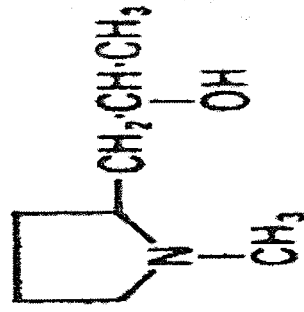




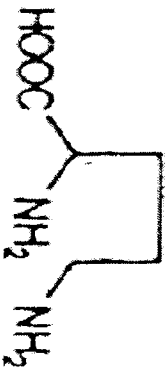
Cuscohygrine



Hygrine



Hygroline



Ornithine

## Ornithine Derived Alkaloids

Tobacco alkaloids

## Uses

- Cocaine is used as local anesthetics in the surgery of:
  1. ophthalmic,
  2. ear,
  3. nose
  4. throat.

## Nicotiana tabaccum



## Tobacco

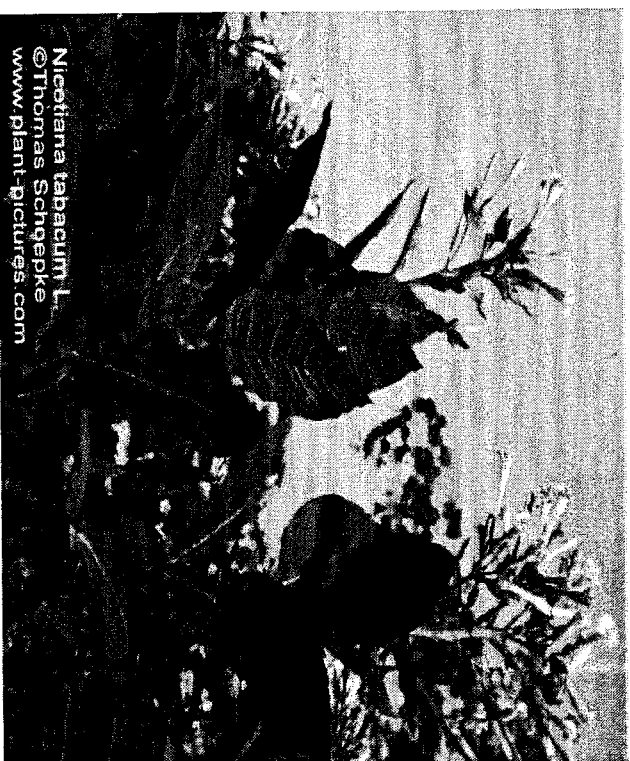
التبغ

- Latin Name; *Nicotiana verginiana*,  
*Nicotiana tabaccum*
- Family; Solanaceae الباذنجانية
- Used Part; The leaves
- Origin; North America

## Constituents of *Nicotiana glauca* leaves

- 2-10% Liquid volatile Alkaloids, the most important of which is Nicotine (pyridine ring and methyl pyrrolidine), Anabasine.
- .

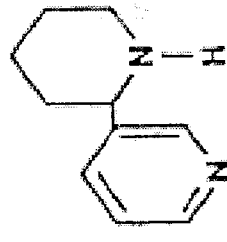
## *Nicotiana glauca*



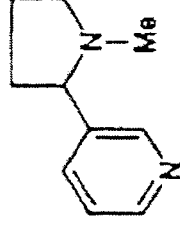
*Nicotiana glauca* L.  
©Thomas Schepke  
[www.plant-pictures.com](http://www.plant-pictures.com)

## Uses and toxicity

- Tobacco is a poisonous Plant. Lethal dose of nicotine about 50-60 mg (about 5 g of the drug).
- Nicotine was used as insecticide.



Anabasine

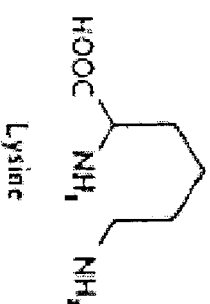


Nicotine  
(*Nicotiana* spp.)

## Lobelia

لوبيليا

- Used parts; dried aerial parts (BP, BHP 1988)
- Latin name; Lobelia inflata
- Family; Campanulaceae
- Lobelia is annual herb
- Origin; USA, Canada



Lysine

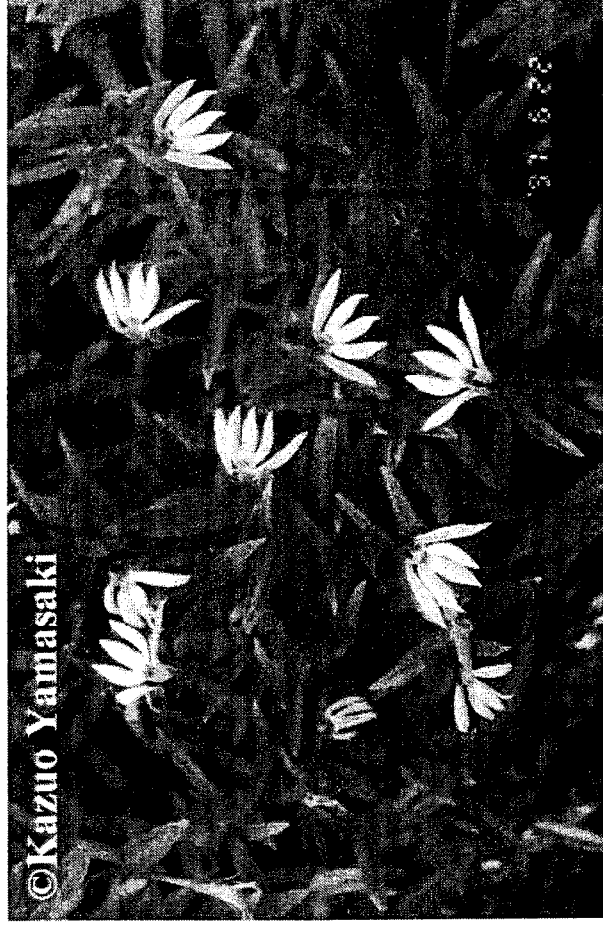
## Lysine Derived Alkaloids

Lobelia

## Constituents

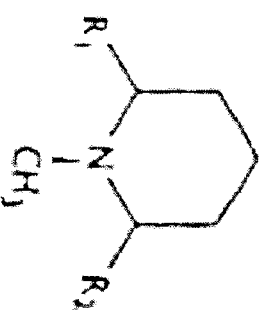
- Lobelia contains 0.4% of Alkaloids, and the most important of which is lobeline.
- Other alkaloids are lobelidine, lobelanine, lobelanidin and isolobelanine.
- All alkaloids have a piperidine nucleus.

## Lobelia



## Uses

- Lobelia is used in;
  1. Spasmodic asthma
  2. Chronic bronchitis
  3. It is included in some antismoking preparations
  4. An injection of lobeline hydrochloride is used in the resuscitation of new-born infants.



$R_1 = R_2 = C_6H_5COCH_2^-$ ; Lobelanine

$R_1 = R_2 = C_6H_5CH(OH)CH_2^-$ ; Lobelanidine

$R_1 = C_3H_8CH(OH)CH_2^-$ ,  
 $R_2 = C_3H_8COCH_2^-$ ; } Lobeline



## لحاء الرمان

### Pomegranate bark

- Used parts; Stem and roots barks
- Latin name; *Punica granatum*
- Family; Punicaceae
- Constituents; 0.9% volatile liquid alkaloids, Main alkaloids are; pelletierine and pseudopelletierine, Tannins 22%, A mixture of the tannates of the alkaloids (Pelletierine Tannate).

### Uses of Lobelia

1. In toxic doses the drug has a paralytic effect.

## Pepper (black and white pepper)

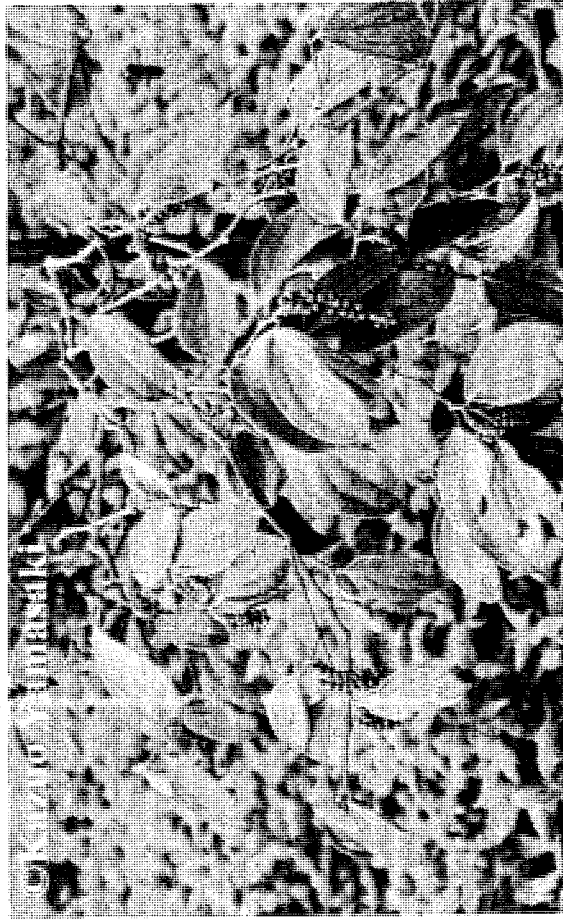
جِلَالِي

- Used Parts; dried unripe fruits (3.5-6 mm diameter).
- Latin name; *Piper nigrum*
- Family; Piperaceae جِلَالِي
- Pepper is perennial climbing plant
- Pepper has an aromatic odour and pungent taste.

## Pomegranate



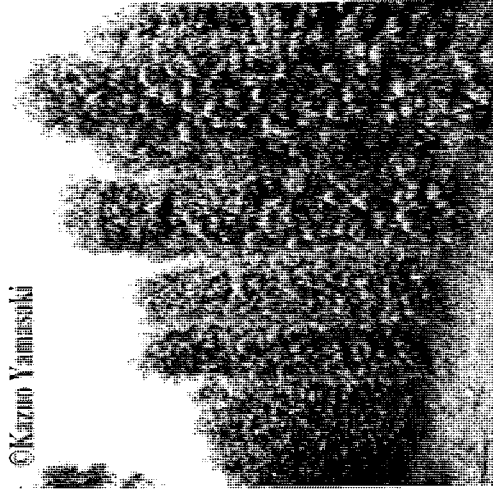
Piper nigrum



Piper nigrum



© Kazuo Yamashiki



## Uses

- In the treatment of ;
- 1. Gonorrhea السيلان البني
- 2. Chronic bronchitis التهاب القصبات المزمن
- 3. Is used as a condiment مكيف

## Constituents

- 1-2.5% volatile oil
- 5-9% crystalline alkaloids piperine and piperettine
- Resin.
- The aroma of the spice is due to the volatile oil.
- Pungency is ascribed to piperine and the resin.

الكبابة

## Cubebs

- Used parts; dried, full -grown fruits (3-6 mm diameter)
- Latin name; *Piper cubeba*
- Origin; Indonesia

## Long pepper

اللفل الطويل

- Used Parts; The dried unripe fruits (4-6 mm long).
- Latin name; *Piper retrofractum* (*P. officinarum*), *P. longum*