

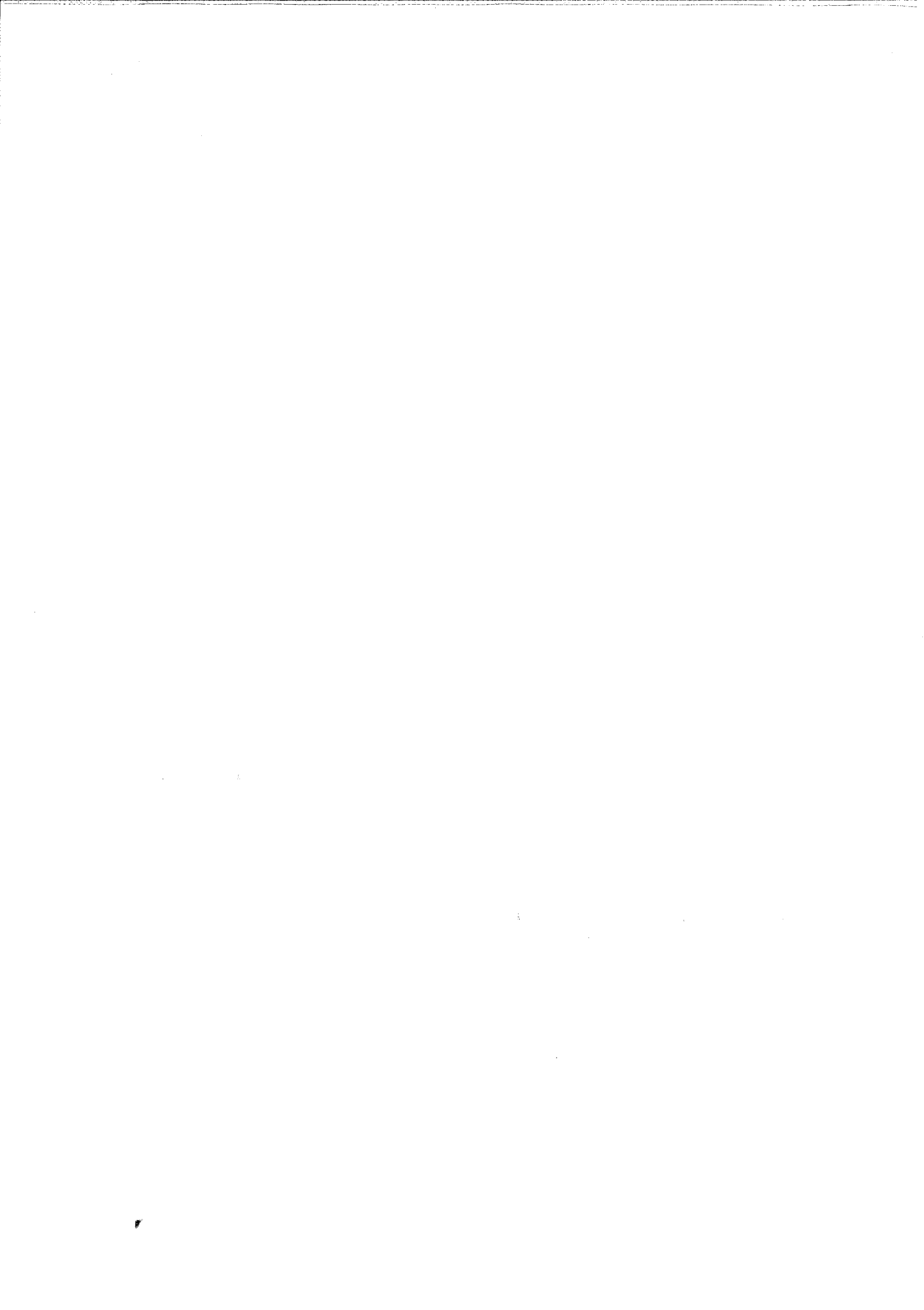


السنة الثالثة

عقاقير 2

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القسم الأخير



عقار (C)
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 العنق
 القاهرة
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الكولا Kola

- L. N.; Cola acuminata, C. astrophora, C. alba, C. nitida. الاسم اللاتيني.
- F. N.; Sterculiaceae الفصيلة البرازيلية
- Used part; dried cotyledones of the seeds, 2-5 cm long القسم المستخدم البذور
- Constitute; 1-2.5% caffeine, little amount of theobromine, 5-10% of tannoids (kolatin) which on hydrolysis turn to water insoluble phlobaphene (kola red) يحوي على الكافئين (kola red) ومقادير قليلة من التيوبرومين، تانينات وفلوبافين

Guarana

- L. N.; Paullinia cupana
- F. N.; Sapindaceae
- Used part; dried seeds
- Constitute; 2.5-7.0% caffeine, 12% of tannins (guarana red)
- Is used in the treatment of fatigue, for slimming and for treatment of diarrhoea.

Coffee

- Used parts: the seeds
- L. N.; *Coffea arabica*
- F. N.; Rubiaceae
- Constituents: caffeine 1-2%, tannin and chlorogenic acid, fat, sugars and pentosans
- Uses: as stimulant, in indigestion, as diuretic.

Tea

- L. N.; *Camellia sinensis* (*Thea sinensis*)
- F. N.; Theaceae
- Used part: the leaves
- Origin; China, Japan....
- Constituents: Thease; an enzymic mixture, which partly converts the phlobatannin into phlobaphene., 1-5% caffeine, 10-24% tannins (black tea), theobromine, theophylline and volatile oil, (chlorogenic acid and phenolic compounds in green tea) .

Tea

- Green tea; The leaves dried in the sun
- Yellow tea; The leaves dried in shadow
- Black tea; The leaves fermented, twisted and dried in the oven.
- Effect and uses: stimulant, diuretic , laxative improve the digestion (green tea),
- Black tea used as anti diarrhoea

Steroidal Alkaloids

- Steroidal alkaloids arise by the inclusion of a basic nitrogen at some point in the steroid molecule.
- Those of the C27 group include the *Solanum* alkaloids and *Veratrum* alkaloids

Veratrums

- American veratrum is called also Green Hellebore . Latin name; *Veratrum viride* , European veratrum is called White Hellebore. Latin name; *Veratrum album* both are from the family: Liliaceae
- Perennial herbs.
- Part used: rhizomes

Constituents of Veratrums

- Numerous steroidal alkaloids are present in both *V. album* and *V. viride*.
- There are two distinct chemical groups of veratrum steroidal alkaloids and these are now referred to as the jerveratrum and ceveratum groups.

Uses

- American veratrum is used for the preparation of Veriloid, a mixture of the hypotensive alkaloids.
- European veratrum is used for the preparation of the protoveratines.
- Both drugs, and the closely related cevadilla seeds (*Schoenocaulon officinale*), are used as insecticides.

Tumor inhibitors from plants

- The main forms of treatment for cancer in humans are surgery, radiation and drugs (cancer chemotherapeutic agents).
- Cancer chemotherapeutic agents can often provide temporary relief of symptoms, the prolongation of life, and occasionally cures.

Role of plants in cancer treatment

- Plant materials have been used in the treatment of malignant diseases.
- A comprehensive survey of literature describing plants used against cancer listed over 1400 genera.

Plant used as anti cancer drug

- Podophyllum hexandrum (Lignans and their glycosides)
- Solanum dulcamara (the expressed juice, solamarine)
- Lichens such as Cladonia, Cetraria and Usnea (usnic acid).
- Mistletoe (Viscum album)
- Mezereon (Daphne mezereum)

Plant used as anti cancer drug

- Alkaloids of *Catharanthus roseus* (vincal leukoblastine or vinblastine, leurocristine or vincristine).
- Deacetyl vinblastine amide (vindesine) modified from vinblastine (treatment of lymphoid leukaemia in children)
- Vinorelbine, an anhydro derivative of 8'-norvinblastine has lower toxic side effects.

Catharanthus roseus

- E. N.; Madagascan periwinkle (*vinca rosea*)
- F.N., Apocynaceae
- Origin: Madagascar
- Herbaceous subshrub (40-80 cm)
- Part used: the leaves
- Constituents: indole alkaloids (vincal leukoblastine or vinblastine, leurocristine or vincristine).

Uses of Catharanthus roseus

- Vinblastine is used mainly for treatment of generalized Hodgkin's disease, and non-Hodgkin's lymphomas.
- Vincristine is used principally in the treatment of acute lymphocytic leukaemia in children, lymphomas; small cell lung cancer, cervical and breast cancer.

Podophyllum

- L.N.; *Podophyllum peltatum*
- F. N.; Berberidaceae, Podophyllaceae
- Part used: dried rhizome and roots
- Perennial herb native in Canada and USA
- Constituents: 8% resin (podophyllin), lignans

Uses Of Podophyllum

- It has a cytotoxic action
- Is used as a paint in the treatment of soft venereal and other warts
- Etoposide is a lignan derivative obtained semi synthetically from podophyllotoxin and used in the treatment of small-cell lung cancer and testicular cancer as well as lymphomas and leukaemias.

Taxus Brevifolia and taxol

- L. N.; *Taxus brevifolia*
- F. N.; Taxaceae
- Part used: the bark
- Constituents: diterpenoid derivatives (taxanes)
- Uses: Taxol (paclitaxel) is used in treatment of ovarian cancers, breast cancers and non-small cell lung cancer

Hallucinogenic

Plants

Hallucinogens

- The principal known hallucinogenic plants (except cannabis) contain alkaloids related to the neuro-physiological transmitters noradrenalline and 5-hydroxytryptamine (serotonin).

Fungi

- The Amanitas. A number of Amanita species are extremely toxic in addition to their hallucinogenic effects.
- Three classes of toxins are recognized in the genus: 1-Tryptamines (bufotenine) 2-Cyclic peptides (phallotoxins and amatoxins) 3-Isoxazole alkaloids (ibotenic acid) .

The fly agaric

- L. N.; Amanita muscaria
- The fly agaric is distinguished by its red or orange cap, often covered with white flecks.
- Constituents: 1-Mixture of isoxazole alkaloids ibotenic acid and muscimol. 2- Polysaccharides (have antitumour activity).

Pharmacological effect of fly agaric

- The pharmacological effects appear within an hour or so of ingestion, with an initial period of excitation followed by muscular twitches, a slowed pulse rate, impaired breathing, delirium and coma.
- Ingestion of the fungus is rarely fatal.
- The mushroom has a traditional use as an inebriant in regions of Siberia.

Hallucinogenic Mexican Mushrooms

- Species of *Psilocybe* (*P. mexicana*), *Conocybe* (*C. cyanopus*) and *Stropharia* constitute the Mexican hallucinogenic mushrooms.
- The onset of symptoms after ingestion of the fungi is rapid, and includes inability to concentrate and the occurrence of hallucinations.

Active constituents of Hallucinogenic Mexican Mushrooms

- Tryptamine derivatives psilocybin and psilocin.

Puffballs

- Species of Lycoperda contain constituents which produce hallucinations and a state of half-sleep about half an hour after consumption.
- The effects are distinct from those caused by the mushrooms.

Lysergic acid derivatives

- This acid forms the nonpeptide portion of a number of ergot alkaloids.
- Lysergic acid was also found as a component of some convolvulaceous seeds (species of *Ipomoea*, *Rivea* and *Argyreia*), and as far as is known at present they constitute the only higher plants containing ergot -type alkaloids.

Morning Glory seeds

- L. N.; *Rivea corymbosa*, a Climbing plant grown in Mexico
- Used parts: the seeds
- It was used in the East as a purgative and were formerly official in the British Pharmacopoeia under the name "kalandana" or "pharbitis seeds".

Peyote (cactus)

- L. N.; *Lophophora williamsii* it is known as Peyotl, anhalonium or mescal buttons.
- Mescal buttons is derived from the cactus stems.
- The chief active constituent is the alkaloid mescaline.

Indian Hemp

- L. N.; *Cannabis sativa*, *C. indica*, *C. ruderalis*
- Origin: India, Bangladesh and Pakistan
- Part used; dried flowering and fruiting tops
- Hemp is also cultivated for the stem fibre and for the seeds

Hemp products

- Three main type of narcotic product are produced:
 1. The Indian hemp or ganja of the Indian Pharmacopoeia is required to contain not less than 10% of its fruits, large foliage leaves and stems over 3 mm.
 2. Bhang (Hindustani) or Hashish consist of the larger leaves and twigs of both male and female plants.

Hemp products

3: Charas chrrus is the crude resin. This is obtained by rubbing the tops between the hands.

In America and Europe the product used by addicts is known as marihuana, in north Africa as kief, in South Africa as dagga, and Arabia and Egypt as hashish.

Macroscopical characters

- The flat- or Bombay ganja occurs in agglutinated flattened masses of a green or greenish-brown colour.
- The resin is sticky or hard and brittle; the odour is very marked in fresh drug.
- The drug has a slightly bitter taste.

Microscopical characters

- The resin is secreted by numerous glandular hairs, 130-250 Mm.
- The head is usually eight celled and the pedicel multiseriate or unicellular.

Constituents

- The narcotic resin contains over 60 compounds (cannabinoids) all composed of an aromatic portion.
- Some principal components are cannabiniol, tetrahydrocannabinol (THC), cannabidiol (CBD).
- The plant also contains a small quantity of volatile oil containing terpenes and a sesquiterpene (cannibene), the bases choline, trigonelline, spermidine and an alkaloid cannabissativine; flavonoid O-glycosides. (vitexin, orientin).

Nutmeg and mace

- L. N.; *Myristica fragrans*
- Family Myristicaceae
- Part used: The kernels
- Origin: Indonesia, Malaysia
- Constituents: Myristicin and elemicin (like amphetamines)
- Activity: exert hallucinogenic effect
- Apiol of parsley and dillapiol of dill are also related .