SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Coimbatore -641035

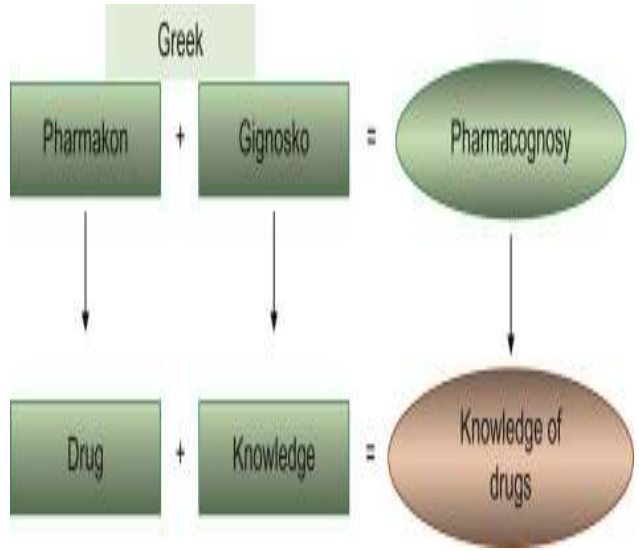
COURSE NAME : PHARMACOGNOSY(ER20-13P)

I -YEAR

TOPIC 1 :INTRODUCTION TO PHARMACOGNOSY

INTRODUCTION

- Pharmacognosy:- Pharmacognosy is defined as the scientific and systematic study of structural, physical, chemical and biological characters of crude drugs
- The word Pharmacognosy is derived from Greek word viz. – Pharmakon: A Drug – Gignosco : To acquire the knowledge



SOURCE OF CRUDE DRUGS

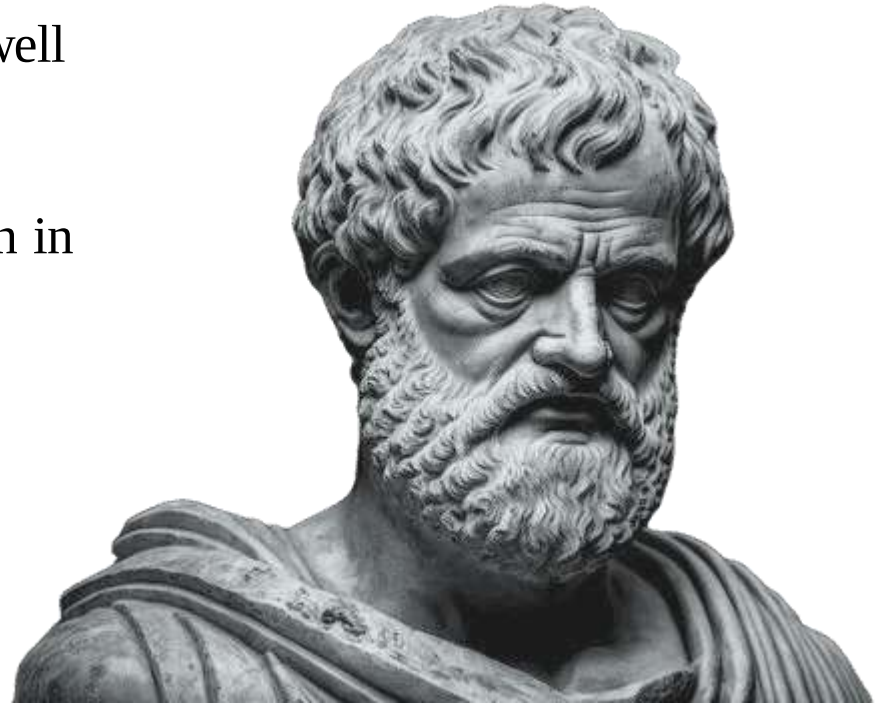
- 1) Plant Source:- Neem,
- 2) Animal source:- Honey bee, bees wax,
- 3) Mineral source:- Chalk, bentonite,
- 4) Micro- Organism: - Antibiotics,
- 5) Marine :- Salt, Protozoa, etc..

HISTORY OF PHARMACOGNOSY

- History of Pharmacognosy:
- Egyptians wear aware of medicinal uses of several plants and animals and also
- about human anatomy.
- The Greek physician Hippocrates (460- 360 B.C) known as 'Father of medicine'.

ARISTOTLE

- Aristotle the renowned philosopher (384 - 322 B.C.) is well known for his studies on animal Kingdom Theophrastus (370 - 287 B.C.) for the plants Kingdom.
- Pedanius Dioscorides:(040- 080 A.D.) A Greek physician in 78 A.D. - several plants of medicinal importance in "De Materia Medica".



PLINY THE ELDER

- Pliny the Elder (23-70 A.D.) who compiled 37 volumes of natural history.
- Greek pharmacist Galen (131 - 200 A.D.) described various methods of preparation containing active constituents of crude drugs.

VARIOUS VEDA

- Indian history of medicinal plants is dated back to 3500 B.C.
- The curative properties of plants have been mentioned in the Suktas Of Rigveda and Atharvaveda.

Scope of Pharmacognosy

The crude drugs are obtained from plants and only a small number comes from animals and mineral origins.

APPLICATION OF PHARMACOGNOSY

Pharmacognosy has wide and broad scope in the field of Pharmacy and its branches of them are given following:-

1) Cultivation and domestication of the medicinal plants.
2) Analysis and Phytochemical
3) Preparation of general tonic and stimulation.
4) 4) The steroid industry
5) Herbal Preparation herbal medicine

VARIOUS USES

- 6) Flavoring agent and perfumes.
- 7) Tissue Culture
- 8) Phytomedicine
- 9) Natural Products.

ANALYSIS

- Analysis and Phytochemical:- Many Bioactive biomolecular are extracted and isolated from the crude drugs
- Analysed by modern technique such as Thin Layer Chromatography (TLC), High performance Liquid Chromatography (HPL), Gas Chromatography.

Herbal Preparation- herbal medicine

- Herbal Preparation herbal medicine:- Herbal medicine have become more popular in recent years because it is believe that these do not have and toxin or side-effects as compare to the modern medicine.

Flavoring agent and perfumes

- Flavoring agent and perfumes:- Large number of aromatic plants used as Flavoring agent, perfume, spicy and medicine Ajowan, Lemon grass, etc.

Tissue Culture

- Tissue Culture:- Plant tissue Culture broadly referral to the in-vitro cultivation of plant seed and various parts of the plants organ embryo, tissue, single cell protoplast.

Phytomedicine

- Phytomedicine :- Herbal based traditional medicine practice that uses various plant material in modalities considered both prevention and therapeutics.

CLASSIFICATION OF DRUGS

Points to be covered in this topic

- ALPHABETICAL
- MORPHOLOGICAL
- TAXONOMICAL
- CHEMICAL
- PHARMACOLOGICAL
- CHEMO AND SEROTAXONOMICAL

Alphabetical Classification

- **Alphabetical Classification**
- **Definition**: Drugs listed in alphabetical order based on Latin or common names.
- **Examples**: Acacia (A), Belladonna (B), Cinchona (C), Digitalis (D), Senna (S).
- **Use**: Common in pharmacopoeias for indexing.

Taxonomical Classification

- **Taxonomical Classification**
- **Definition**: Based on biological taxonomy (Kingdom, Phylum, Class, Order, Family, Genus, Species).
- **Examples**:
  - Senna (Family: Leguminosae)
  - Digitalis (Family: Scrophulariaceae)
  - Cinchona (Family: Rubiaceae)

Morphological Classification

- **Morphological Classification**
- **Definition**: Based on the part of the plant or animal used; divided into Organized (cellular) and Unorganized (acellular) drugs.
- **Organized Drugs**:
  - Leaves (e.g., Senna, Vasaka)
- **Unorganized Drugs**:
  - Resins (e.g., Benzoin)

Pharmacological Classification

- **Pharmacological Classification**
- **Definition**: Based on therapeutic or pharmacological action.
- **Examples**:
  - Laxatives (e.g., Senna, Aloe)
  - Cardiotonics (e.g., Digitalis)
  - Antimalarials (e.g., Cinchona)
  - CNS Drugs (e.g., Opium)
- **Advantages**: Clinically relevant; ai

Chemical Classification

- **Chemical Classification**
- **Definition**: Based on the active chemical constituents.
- **Examples**:
  - Alkaloids (e.g., Opium, Cinchona)
  - Glycosides (e.g., Digitalis, Senna)
  - Volatile Oils (e.g., Peppermint, Clove)
  - Tannins (e.g., Catechu)

Chemo-taxonomical Classification

- **Chemo-taxonomical Classification**
- **Definition**: Combines chemical constituents with taxonomic relationships; based on primary (e.g., carbohydrates) and secondary metabolites (e.g., alkaloids).
- **Examples**:
  - Solanaceae family (atropine in Belladonna, Hyoscyamus)
  - Papaveraceae (morphine in Opium)

Comparison of Classification Systems

Alphabetical: Simple but non-scientific; best for quick reference.
Taxonomical/Morphological: Biological/physical focus; good for identification.
Pharmacological/Chemical: Action/constituent- based; clinical and research utility.
Chemo-taxonomical: Integrated; advanced but specialized.

Examples in Practice

Cinchona: Alphabetical (C), Taxonomical (Rubiaceae), Chemical (Alkaloids), Pharmacological (Antimalarial).
Rauwolfia: Morphological (Root), Chemo- taxonomical (Indole alkaloids), Pharmacological (Anti-hypertensive).
Application: Helps in cross-referencing for quality control and dispensing.

THANKYOU