

## UNIT 1

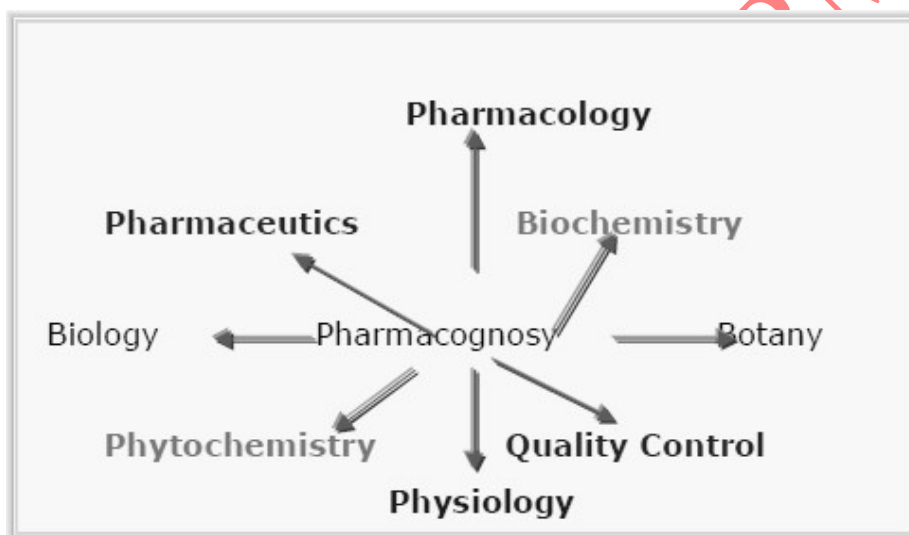
## History, Definitions and Scope of Pharmacognosy

**The history of natural products in medicine**

- A great proportion of the natural products used as drugs
- The study of drugs used by traditional healers is an important object of pharmacognostical research
- **Sumerians and Akkadians** (3rd millennium BC)
- **Egyptians** (*Ebers papyrus*, 1550 BC)
- **Hippocrates** (460-377 BC) “The Father of Medicine”
- **Dioscorides** (40-80 AD) “De Materia Medica” (600 medicinal plants)
- The Islamic era **Ibn Altabari** (770–850) “فردوس الحكمة”
- **Ibn Sina** (980-1037) “القانون في الطب” •
- **Ibn Albitar** (1148-1197) “الجامع لمفردات الأدوية والأغذية” •
- The era of European exploration (16th and 17th century)
- The 18th century, Pharmacognosy:
  - Johann Adam (1759-1809) :surgeon and ophthalmologist" In 1811 his Lehrbuch der Materia Medica was published, which was a work on medicinal plants and their properties. Linnaeus (naming and classifying plants)
  - At the end of the 18th century, crude drugs were still being used as powders, simple extracts, or tinctures
  - **The era of pure compounds** (In 1803, a new era in the history of medicine)
    - Isolation of morphine from opium
    - Strychnine (1817)
    - Quinine and caffeine (1820)
    - Nicotine (1828)
    - Atropine (1833)
    - Cocaine (1855)
- In the 19th century, the chemical structures of many of the isolated compounds were determined
- In the 20th century, the discovery of important drugs from the animal kingdom, particularly hormones and vitamins.
- microorganisms have become a very important source of drugs

## Pharmacognosy

- Pharmacognosy is the oldest of all pharmacy sciences
- The name “Pharmacognosy “derived from the Greek Pharmacon, a drug, and gignosco, acquire knowledge(the entire meaning of drugs)
- **Definition of pharmacognosy:**
  - It is the science of biogenic or nature-derived pharmaceuticals and poisons
- Pharmacognosy is related to both botany and plant chemistry “Phytochemistry “, and its history entitles it to be regarded as parent of both.



- **Traditional medicine:**

Traditional Medicine is the systems of medicine based on cultural beliefs and practices handed down from generation to generation
- **Crude drugs:**

It is used for those natural products such as plants or part of plants, extracts and exudates which are not pure compounds and used in medicine
- **Natural products:**

they can be

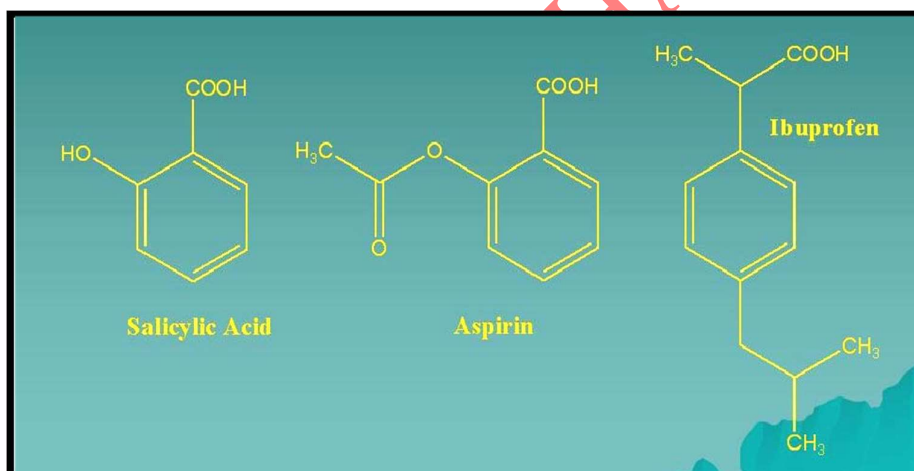
  1. Entire organism (plant, animal, organism)

2. Part of an organism (a leaf or flower of a plant, an isolated gland or other organ of an animal)
3. An extract or an exudate of an organism
4. Isolated pure compounds

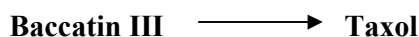
- **Value of natural products**

Compounds from natural sources play four significant roles in modern medicine:

1. They provide a number of extremely useful drugs that are difficult, if not impossible, to produce commercially by synthetic means
2. Natural sources also supply basic compounds that may be modified slightly to render them more effective or less toxic
3. Their utility as prototypes or models for synthetic drugs possessing physiologic activities similar to the originals



4. Some natural products contain compounds that demonstrate little or no activity themselves but which can be modified by chemical or biological methods to produce potent drugs not easily obtained by other methods



- **Function of Pharmacognosist:**

1. Identification of the drug sources
2. Determination of the morphological character
3. Investigation of potency, purity, and admixture
4. Planning and designing of the cultivation of medicinal plants

5. Prescription of the detail processes of collection, drying and preservation
6. Knowledge about active constituents, chemical nature and uses

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