

PAGE NO.:

Pharmaceutics :- The science that deals with preparation, using or dispensing medicines.

INTRO TO PHARMACY

- ★ The Pharmacy word is derived from the Greek word "Pharmakon" meaning 'Drug or medicine'.
- ★ It is an art and science of compounding and prep. suitable dosage form for administration of drug in the man or animals.
- ★ It includes collection, identification, purification, isolation, synthesis, standardization and quality control of medicine and medicinal substances.
- ★ The Father of Pharmacy is Professor William Procter.
- ★ The Father of Pharmacy in India is M.L. Schroff.
(Mahadeva Lal)

Drug :- It is a chemical entity shows Pharmacological action in animals & human that used to diagnosis, prevention, treatment, and cure of disease.

HISTORY OF PHARMACY

Greeks were one of the first patrons of this profession.

- ★ It was in 19th century in civilized world around Baghdad that the profession of pharmacy starts acquiring shape.

- ★ It slowly spreads to Europe as alchemy (Chemistry) and finally develop into chemistry. First known chemical Reactions was carried out by the artisans of Mesopotamia, Egypt and China.
- ★ In 19th century, it completely pulled out from medicine and start developing as a separate profession.
- ★ This happened only when the role of pharmacist as a compounder of medicines were identified and differentiated from Physician whose role was accepted as therapist.
- ★ The ~~medic~~ medicament commonly produced was simple Elixirs, spirits and powders in contrast to complex pharmaceutical remedies of present era.
- ★ The 19th century, witnessed various ~~an~~ changes ~~to~~ being set in the field of Pharmacy. The 1st U.S. Pharmacopoeia was Published in 1820. In 1821, the First School of Pharmacy was established in U.S. at Philadelphia. The First National Formulary was Published in 1888.
- ★ *India* The Pharmacy Profession in India was marked by the First class of chemist and druggist conducted at Madras medical college in 1870s to train students to gain skills in Pharmacy Practice.

- ★ Pharmacy education Pattern was based on the instructions provided by the Pharmaceutical Society of Great Britain
- ★ A formal training of compounders was started in 1881 in Bengal. The Pharmacy profession entered India almost simultaneously.
- ★ For almost half a century, not much progress was noticed, until B. Pharm. course was started in 1937 at Banaras Hindu University
- ★ In 1944 at Punjab University, Lahore, now in Pakistan

SCOPE OF PHARMACY

- ★ There is wide scope of Pharmacy and their profession
- ★ A Pharmacist is a specialist in medication, companion of Physician, ^{represent} counselor of patients and guardian of the Public health

1. community Pharmacy
2. Wholesale Pharmacy
3. Industrial Pharmacy
4. Hospital Pharmacy
5. Pharmacy Education
6. Drug control administration

7. P. ceutical journal

8. Research

★ Community Pharmacy : It means any drug store which is situated in community and run under supervision of a registered pharmacist, where the practice of Pharmacy occurs or prescription orders are compounded and dispensed other than a hospital pharmacy.

The pharmacist who, engaged in community Pharmacy is known as community Pharmacist.

● Medicines are stored, dispensed & supplied at community pharmacist's store.

★ Whole Sale Pharmacy : To run whole sale Pharmacy, Pharmacy needs no. of Pharmacist. The wholesaler serves as middleman between manufacturer/stockist and retailer. Wholesalers buy drug and Pharmaceuticals in huge quantity and sale to the retailer in fraction or as per need of retailer.

★ Industrial Pharmacy : In the Production P. ceutical Industry offers opportunities to Pharmacist of all educational levels. It provides jobs to the P. list in foll. fields :

● Production : In Production department, Pharmacist

work as manufacturing or production chemist. He has to supervise the production of various types of pharmaceutical formulations, packaging, labeling & storage.

2. QC and QA: The chemist having bachelors who perform QA and QA work known as analytical chemist and their need as per work load and size of QA and QC departments.

These industries offer work like testing of raw material, quality control of finished good and its standardization in lab.

3. Production manager: After getting experience, production chemist may be production manager, who manage the all works of production and their personnel's.

4. Formulation & developments: These are mainly for M. Pharm.

qualified candidates, they modify the prior dosage form and drug to novel to reduce the side effects, enhance bioavailability and increase product stability.

5. Research and developments: Large Pharmaceutical Industries have their own separate research and development unit. R. chemist having doctorate degree or master degree in Pharmacy.

ideally suited for product developments in P. central industry.

6 Marketing & Sale! In the field of marketing & sale, the P. central engages is known as Medical Representative (MR).
gain opportunities consist of Sale representative, field officers, sale managers etc.

★ Pharmacy Education! Due to rapid growth of P. Central industry and Expansion of health services in the country, the demands of pharmacist have been increased then, need of increase in no. of Pharmacy teaching organizations as well as well qualified faculty and technician in the country.

★ Hospital Pharmacy! The Pharmacy situated in hospital & performs all tasks in the hospital is known as hospital Pharmacy & person engaged in it, is known as hospital pharmacist.

★ Drug control Administration! Drug administration run at level of both central & state govt. Drug & Cosmetic act provide establishment of foll. agencies to maintain drug control administration.

Ex. advisory agency include

- (^{anal. & arch. in drug}) • Analytical agency (by drug inspector &)
- Licencing Authority (issue licence for transportation of drug)

- ★ Professional journal :- It offers rewarding experiences for limited no. of Pharmacists with writing & editing skill.

PHARMACOPOEIA

- ★ Derived from Greek word 'Pharmakon' means drug and 'Poia' means to 'make'.
- ★ It is a legal and official book issued by recognized authorities usually appointed by Govt. of each country.
- ★ It comprises list of Pharmaceutical substances, formulae along with their description and standards.

IMPORTANCE OF Pharmacopoeia

- ★ To maintain the uniformity and control the standards of drugs available in market.
- ★ Avoid adulterated drugs.
- ★ Complete information on drugs and their dosage form.
- ★ Reference for laboratory, industry and academic institutions.

FORMULARY

- ★ Formularies are list of drugs or collections of formulas for the compounding of medicinal preparations.
- ★ Formularies contain more comprehensive details on therapeutics.
- ★ Collectively these books are known as drug compendia.
- ★ Pharmacopoeias ≠ Formularies = Drug compendia.

1. Official compendia :- official compendia are the compilation of drugs and other substances recognized as legal standards of purity, ~~of~~ quality and strength by govt. agency of respective countries.

- British P. coproia (BP)
- " " Cepitcal codex (BPC)
- United State P. coproia (USP)
- Indian " (IP)
- Japanese " (JP)

2) Non-official compendia : The book other than official drug compendia which are used as 2° reference sources for drugs and other related substances are known as non-official drug compendia.

- Merck Index
- Marindale (The Extra P. copiosa)

MONOGRAPH

A monograph is a collection of detailed information on a particular drug, its dosage forms and methods of analysis.

* A Monograph contains :

1. Chem. Name
2. Formula
3. Solubility
4. Identification
5. PH
6. Assay (Standardisation)
7. Specific optical rotation
8. Loss on Drying
9. Sulphated ash
10. Dose

INDIAN P. COPOEIA (IP)

- ★ India P. copoeia is an official book of standards of drugs to define identity, purity and strength of drugs imported, manufactured for sale, stocked or distributed in India.

HISTORY OF I.P.:

- In preindependence days, British P. copoeia was ~~was~~ used in India.
- In 1946, Govt. of India issued one list known as 'The Indian P. copoeial list'.
- Committee under chairmanship of Sir P. N Chopra ^{Sam Nath} alongwith, other nine members prepared 'The Indian P. copoeial list'.
- It was prep. by Dept. of health Govt. of India, Delhi in 1946.
- In 1948, Govt. of India appointed an Indian P. copoeia committee for prep. 'Pharmacopoeia of India'.
- Indian P. copoeia committee under chairmanship of Dr. B. N Ghosh published first edition of IP in 1955.

★ Indian P. copoeia is published by 'IPC'
[IPC - Indian P. copoeia commission]

★ Head office in Ghaziabad (UP)

★ IP is Printed by 'NISCAIR'

[NISCAIR - National institute of science communication and information resources]

Editions of I.P.

- ★ 1st Edition I.P. 1955 was published in official gazette Dr. B.N. Ghosh, chairman
- ★ 2nd Edition I.P. 1966, Dr. B. Mukerji, chairman Shonkar S
- ★ 3rd Edition I.P. 1985, Dr. Nityanand, chairman
- ★ 4th edition I.P., 1996, Dr. Nityanand, chairman.
- ★ 5th edition I.P., 2007, Dr. Nityanand, chairman.
- ★ 6th edition I.P., 2010.
- ★ 7th edition I.P. 2014
- ★ ★ Latest Edition 8th, I.P., 2018.

BRITISH P. COPOEIA

- ★ British P. copoeia is the source of official standards of drugs in UK and other parts of the world.
- ★ It was first published by General medicine council and was later done by P. ceutical commission.
- ★ Since then P. copoeial Commission is reconstituted from time to time and new editions of British P. copoeia are published.

- * British P. code is an imp. statutory component in control of medicines. Along with the British nation Formulary (BNF), it defines the UK's P. Ceutical standards

HISTORY OF B.P

- The 1st edition of B.P was Published in 1864
- A commission was appointed by General Medical Council (GMC) under Medical Act 1858 for producing B.P on national Basis.
- In 1907 the B.P was supplemented by P. Ceutical code, which gave information on drugs & other P. Ceutical substance not include in B.P & Provide Standards

Edition.

- * 1st Edition was published in 1864
- * 2nd " " " " 1867
- * ~~3rd~~ 4th " " " " 1898
- * ~~4th~~ 5th " " " " 1874
- * ~~6th~~ 8th " " " " 1553

In 1915 ^{8th} edition, titles of drugs & prep. was in English instead of Latin & metric system

★ After 1953 the new editions of BP was published at interval of 5 Years.

★ Since 1953, the new edition of BP was " " in 1958, 1963, 1968, 1973 & after 1973 the new edition was published in 1980 and then 1988

★ Since 2000 BP all editions published annually

★ The current edition of BP comprises 6 Volumes which contain nearly 4000 monographs for drug & substance, Excipients & formulated preparation

UNITED STATES P. COPOEIA (USP)

★ The USP is the official P. copoeia of US, published dually with National Formulary as the USP-NF

★ The United state P. copoeia and National Formulary (USP-NF) are recognized as official compendia and are used as reference books for determining the strength, quality, purity, packaging and labelling labeling of drugs and other related articles

★ USP-NF is published by United states P. copoeial Convention (USPC)

★ USP also sets recognized standards for food ingredients and dietary supplements

★ USP's standards are recognised and used in more than 130 countries of globe

HISTORY OF USP

PAGE NO.:

* On 1st Jan, 1820, 11 members of a medical committee met in the Senate Chamber of U.S. Capital building to establish a Pharmacopoeia for United States.

* Nearly a year later on December 15, 1820, the 1st edition of USP was published.

• 1st National Formulary of US published in 1888 BY ~~Amo~~ American Pharmaceutical Association (APA)

• In 1975 USPC purchased National formulary from APA

• From 1976 USPC released USP along with National Formulary with title of USP-NF

Edition.

• 1st edition → December 15th, 1890

• 2nd " → 1830

* Next each edition at 10 years interval up to 1942

* Next each " " 05 " " from 1942 to 2000

* After 2000 Annually

* currently edition comes of USP, USP₄₃ - NF₃₈ will

some official on NOV 1, 2020.