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Course Name	**: D. Pharm**
Year	**: First Year**
SubjectName	**: Pharmaceutics**
Topic Name	**: History of the Profession of Pharmacy in India**

Chapter – 1 History of the Profession of Pharmacy in India

1.1 History of Pharmacy Profession

In ancient India the sources of drugs were of vegetable, animal and mineral origin. (Ayurveda).They were prepared empirically by few experienced persons. Knowledge of that medical system was usually kept secret within a family (Folkore). There were no scientific methods of standardization of drugs.

Muslim rule in India: The Indian system of medicine declined during the Muslim rule while the Arabic or the Unani-Tibbi system flourished.

British rule in India: The western or the so-called Allopathic system came into India with the British traders who later become the rulers. Before 1940 Initially all the drugs were imported from Europe. Later some drugs of this system began to be manufactured in this country.

1901: Establishment of the Bengal Chemical and Pharmaceutical Works, Calcutta by Acharya P.C. Ray.

1903: A small factory at Parel (Bombay) by Prof. T.K. Gujjar.

1907: Alembic Chemical Works at Baroda by Prof. T.K. Gujjar.

Drugs were mostly exported in crude form and imported in finished form. During World War-I (1914 – 1920) the imports of drugs were cut-off. Imports of drugs were resumed after the War.

(i) Foreign manufacturers dumped inferior quality medicines and adulterated drugs.

(ii) Markets were full of all sorts of useless and deleterious drugs were sold by unqualified men. Examples Poisoning due to quinine. Putting of croton oil into eye instead of atropine solution. Selling of chalk powder tablets in place of quinine.

(iii) Potent drugs like compounds of antimony and arsenic and preparations of digitalis were dispensed without any standard. Manufacturer abroad took advantage of the situation. The consequences were as follows

Few laws were there having indirect bearing on drugs, but were insufficient.

1878 Opium Act Dealt with cultivation of poppy and the manufacture, transport, export, import and sale of opium.

1889 Indian Merchandise Act Misbranding of goods in general 1894 Indian Tariff Act Levy of customs duty on goods including foods, drinks, drugs, chemicals and medicines imported into India or exported there from.

1898 Sea Customs Act Goods with 'false trade description' were prevented from importing under this act.

1919 Poisons Act Regulated the import, possession and sale of poisons. Indian Penal Code Some sections of IPC have mention of intentional adulterations as punishable offence.

Some state-level law had indirect references to drugs

- 1884 Bengal Municipal Act
- 1901 City of Bombay District Municipal Act Concerned with food.
- 1909 Bengal Excise Act
- 1911 Punjab Municipal Act
- 1912 United Provinces (now Uttar Pradesh) Prevention of Adulteration Act Refers to adulteration of foods and drugs.
- 1914 Pujab Excise Act
- 1916 United Provinces Municipalities Act Inspection of shops and seizure of adulterated substances.
- 1919 Bengal Food Adulteration Act
- 1919 Bihar and Orissa Prevention of Adulteration Act
- 1919 Madras Prevention of Adulteration Act Chiefly concerned with food adulteration
- 1922 Bihar and Orissa Municipal Act
- 1922 Central Provinces Municipalities Act
- 1925 Bombay Prevention of Adulteration Act
- 1929 Punjab Pure Food Act The laws were too superficial and had indirect link to drugs.

Drug enquiry committee Government of India on 11th August 1930 , appointed a committee under the chairmanship of Late Col. R.N.Chopra to see into the problems of Pharmacy in India and recommend the measures to be taken. This committee published its report in 1931. It was reported that there was no recognized specialized profession of Pharmacy. A set of people known as compounders were filling the gap. Just after the publication of the report Prof. M.L.Schroff (Prof. Mahadeva Lal Schroff) initiated pharmaceutical education at the university level in the Banaras Hindu University.

- **In 1935** United Province Pharmaceutical Association was established which later converted into Indian Pharmaceutical Association (IPA).
- The Indian Journal of Pharmacy was started by Prof. M.L. Schroff **in 1939**.
- All India Pharmaceutical Congress Association was established **in 1940**.

The Pharmaceutical Conference held its sessions at different places to publicize Pharmacy as a

whole.

1937: Government of India brought 'Import of Drugs Bill'; later it was withdrawn.

1940: Govt. brought 'Drugs Bill'to regulate the imort, manufacture, sale and distribution of drugs in British India. This Bill was finally adopted as 'Drugs Act of 1940'.

1941: The first Drugs Technical Advisory Board (D.T.A.B.) under this act was constituted.

Central Drugs Laboratory was established in Calcutta 1945:

'Drugs Rule under the Drugs Act of 1940' was established. The Drugs Act has been modified from time to time and at present the provisions of the Act cover Cosmetics and Ayurvedic, Unani and Homeopathic medicines in some respects.

1945: Govt. brought the Pharmacy Bill to standardize the Pharmacy Education in India.

1946: The Indian Pharmacopoeial List was published under the chairmanship of late Col.R.N. Chopra. It contains lists of drugs in use in India at that time which were not included in British Pharmacopoeia.

1948: Pharmacy Act 1948 published.

1948: Indian Pharmacopoeial Committee was constituted under the chairmanship of late Dr. B.N. Ghosh.

1949: Pharmacy Council of India (P.C.I.) was established under Pharmacy Act 1948.

1954: Education Regulation have come in force in some states but other states lagged behind.

1954: Drugs and Magic Remedies (Objectionable Advertisements) Act 1954 was passed to stop misleading advertisements

1955: Medicinal and Toilet Prepartions Act 1955 was introduced to enforce uniform duty for all states for alcohol products.

1955: First Edition of Indian Pharmacopoeia was published.

1985: Narcotic and Psychotropic Substances Act has been enacted to protect society from the dangers of addictive drugs.

Govt. of India controls the price of drugs in India by Drugs Price Control Order (DPCO) changed from time to time.

Pharmacy education in India at the certificate level, was started in 1842 in Goa by the Portuguese. Formal training of the compounds was started in 1881 in Bengal and as a university level program in 1937 at the Banaras Hindu University (Varanasi).

- The revolution in the development of science and technology in post-world war-2 starter the change in pharmacy profession.
- Pharmacy being a health care profession, the independent government of India enacted

'The Pharmacy Act' to control the pharmacy profession as well as education, in 1948.

- ❖ Father of Pharmacy: 'William Procter Jr.' (American Pharmacist).
- ❖ Father of Indian Pharmacy: 'Mahadev Lal Schroff.'
- ❖ Traditionally pharmacy has been known as an art and science of making drug/medicine. The word Pharmacy is derived from the Greek word 'PHARMAKON' meaning drug.
- ❖ In the ancient period, the physician themselves practiced pharmacy and it is believed that Hippocrates, the great Greek physician, regard as father of Medicine, used to make his own prescription or at least, supervise their preparation.
- ❖ Apothecary is a historical name of a medicine professional who, formulates and dispense medicine to physicians and patients, now this role served by the pharmacist. The earliest pharmacies were known as Apothecary shops.

❖ Pharmacist play a role in, compounding most of the medicine needs of the people. Here the medicinal professional prepared and dispensed medicines to physicians and mixtures, ointments, pills, tincture, syrups, elixirs, powder etc.

- ❖ in their pharmacy, based on the prescriptions given by physicians. They packed them suitably labled them and dispensed them along with appropriate advise for consuming them.
- ❖ In old time, direct crude drugs are used in the diagnosis by the physicians and require herbs and drugs are provided by pharmacist. At that time drugs are identified by their morphological appearance and organoleptic characters.
- ❖ Like other, countries In India too, pharmacy was part of medicine in our Ayurvedic, and Siddha system of medical practice.
- ❖ Pharmacy is a versatile, dynamic, growing and increasingly diverse professions, one which creates an excitement because there are so many opportunities for services. it is an old age profession which has transformed into a hub for 'Global health Care' and evolved as multidisciplinary and multifaceted field in recent times.

1.2 Pharmacy relation in Industry

In industry pharmacist perform many works in many ways.

1. Formulation development: Commercial drug production is a difficult tasks for any pharmaceutical companies. Due to involvement of pharmacy in pharmaceutical, it is easy way to developed commercial formulation and developing a complete understanding of the form and structure of the drug substance and drug products.

- ❖ Pharmacist also involved in the formulation testing and make a successful

pharmaceutical formulation requires the combination of the Active Pharmaceutical Ingredients (API) with inactive excipients.

- Physicochemical analysis can aid excipient selection, enable the stability of the drug substance and drug product to be assessed, and also ensure the critical material attributes (CMAs) relating to formulation performance are identified as part of the design space definition applied for downstream manufacturing controls.

2. Manufacturing department: Proper equipment, proper procedure and suitable conditions are the necessary conditions for any manufacturing units. In pharmaceutical it is also decided by the pharmacist. Pharmacist developed and maintain Standard Operation Procedure (SOP) and provide effective training to products staffs.

- Proper sanitation and hygiene conditions are also developed by the pharmacist and it is also decided the safety area and safety environment for the manufacturing units.
- Assist and review production batch records have all the necessary information for final approval and release decision and also conduct and support companies research and development projects

3. Quality control and Quality assurance: The main function of quality control is to test and verify the products quality according to pharmacopoeial standards.

- In Quality Control sampling inspection and testing of raw material and packaging material, release and documentation are control by the high skilled person (Pharmacists). QC department also define the stability testing and evaluation of self-life product and also monitor the microbial activity of raw materials and finished products.
- Quality Assurance (QA) department execute the systemic monitoring and evaluation of the various expects of a project service or facility to ensure that standards of quality of the drugs. It also responsible of maintenance of a desired level of quality in as service or product, especially by means of a attention to ever stage of the process of delivery or production. It also assured the doses and formulations of drugs according to patients need and convenience.

4. Drug Information: Pharmacists are also known as drug experts because it gains a lot of knowledge during the academic session. In industry it informed the drugs composition and formulation and also defined the drug advantage (useful effect) and disadvantage (Harmful or adverse effect). chemically drugs are active or inactive it is decided by the pharmacists and also provided the drugs reaction with other drugs.

- Drug are the chemical substances, which are design for treating the disease. It is also

providing the complete information about suitable excipients (coloring agent, flavouring agent etc).

5. Regulatory affairs: In industry, regulatory affairs is a profession developed from the desire of governments to protect public health by controlling the safety and efficacy of medicinal products like veterinary medicines, medical devices, pesticides, agrochemicals, cosmetics and complementary medicines.

- Regulatory department responsible for the discovery, testing, manufacture and marketing of pharmaceutical products wanting to ensure that they supply products that are safe and make a worthwhile contribution to public health and welfare.
- Regulatory department promote strategic and technical advice at the highest level in their industries, making an important contribution both commercially and scientifically development.
- Keeping track of the ever-changing legislation in all the regions in which a company wishes to distribute its products and give advice on legal and scientific restraints and requirements.

6. Sales and marketing: For any industry growth and development sales and marketing is a very important factor. Pharmaceutical marketing is presently the most organized and comprehensive information system for updating physicians about the availability, safety, efficacy, hazards, and techniques of using medicines.

- Marketing is a process that starts with identifying and understanding the needs and wants of the customer (demand) and then fulfilling those needs and wants (supply). An effective marketing plan offers a solution to fulfill the needs and wants of society (individuals and organizations), while achieving the goals of the organization.
- In addition, marketing can create new needs or reformat existing needs. Both customers (demand) and organizations (supply) have objectives.
- In marketing, pharmacists are direct attached to the patients and physicians so it provided the complete information about the public need and requirements.

7. Management: Marketing management is the analysis, planning, an implementation the control over actions, aimed on an establishment, fastening and support of favorable exchanges with target buyers for the achievement of certain problems of the organization, such, as profit reception, sales volume growth, increase market share, etc.

1.3 Indian Pharmaceutical Industry

In 1930, in Calcutta, the first pharmaceutical company called Bengal Chemicals and Pharmaceutical Works, which still is today as one of 5 government-owned drug manufacturers has

started the history of the Indian pharmaceutical market in the 1970s was almost non-existent. Initially, all the drugs were imported from Europe. Later some drugs of this system began to be manufactured in this country.

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- 1903: A small factory at Parel (Bombay) by Prof. T.K. Gujjar.
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Drugs were mostly exported in crude form and imported in finished form. During World War-I (1914 – 1920) the imports of drugs were cut-off. Imports of drugs were resumed after the War. In absence of any restrictions on the quality of drugs imported, manufacturers abroad took advantage of the situation.