A Traveling Pharmacist through Time and Place

TRACEY L. MERSFELDER, PHARMD
PHARMACY PROFESSOR
FERRIS STATE UNIVERSITY

Outline
- Definitions
- Old World
- United States
- Michigan

Pharmacy
- Definition in 1927: The study of the theories and exercise of the operations necessary to the intelligent preparing and dispensing of substances used in the healing art.
- Pharmacon: drug, medicine, remedy, potion, charm, spell
- Apotheke: a storehouse
- Pharmacist: One skilled in pharmacy
- Apothecary: One who practices pharmacy
- Drug: Dryge - dry

3000 BC – 200 BC
- 3000 – Pottery jars – Nippur, Iraq
- 2000 – Earliest Formulary
- 1500 – Oldest Pharmaceutical Records Known
  - Babylonia & Egypt
- Old Testament
  - 300 – 200 - Sirach
  - 6th Century BC – Exodus – Ointments made by the apothecary

Side Bar
- Great Moments in Pharmacy
  - George A. Bender, vision
  - Robert Thom, artist
  - All 40 prints displayed in Detroit at a national convention

2000 BC – 200 BC
- 460 – Hippocrates
  - Father of Western Medicine
  - 200 - 400 medications
  - Narcotics and enemas
- 372 – Theophrastus
  - Father of Botany
1 - 1000 AD
- 131 – Galen of Pergamon
  - Greek Physician
  - Physician of the Asian Gladiators
  - Physician to the Emperor Commodus
    - (Reign: 180-192)
  - Antonine Plague – 166
- 350 – Cosmas and Damian
  - Transplantation of a leg

1000 AD
- Arab influence
- Professionals
- Canon medicinae
  - 5 volume
  - 2 of them = drugs

1200's – 1300's
- Early 1200's – German Emperor/Holy Roman Empire declared a separation of the pharmaceutical profession and the medical profession
- 1225 – Apothecary shop established in Cologne
- 1297 – Guild of Pharmacists organized in Bruges
- 1345 – Apothecary shop established in London
- 1348 – The Black Death – Great Plague struck Europe

Europe
- Italy
- France
- Germany
- British Isles

Italy
- 1100's – physicians and pharmacists in the same guild
  - Pharmacists dealt with drugs and spices
  - Pharmacists conducted funerals of the wealthy
- 1258 – duties of physicians and apothecaries
  - Pharmacists could no longer look at urine
- 1300's – physicians saw their patients in pharmacies
- 1429 – Pope Martin V

France
- Guilds – nonpolitical
- 1312 – in charge of weights – King Philip IV – Criteria
- 1500's – Formal education
- 1600's – Louis XIII – 312 clysters in one year!
- 1766 – Apothecary-major of the battlefields & the armies of the king
- 1791 – Enthusiasm of the French Revolution went a little far
Pharmacists

French

- Joseph Proust
  - Law of definite proportions
  - 1802 – Sugar from Grapes

- J.F. Derosne
  - 1803
  - Isolated Opium

- Joseph Caventou & Pierre Joseph Pelletier
  - 1818 – Strychnine
  - 1820 – Quinine
  - 1821 - Caffeine

French

- Benard Courtois
  - 1811
  - Iodine

- Henri Moissan
  - 1886
  - Fluoride & Artificial Diamonds

---

Fun Fact

- Jean-Francois Pilatre de Rozier
  - 1783
  - First to ride in a hot air balloon
  - First flyer to die in aeronautics

---

Germany

- Control
- Number of pharmacies
- Owners of pharmacies
- Few owned by the government

- High Standards
- Publications
- Education was late to follow
- Latin
- Apprenticeship
- Drogerien vs. Apotheken

---

People in History

German Pharmacists/Chemists

- Mid 1700's
  - Isolation of sugar out of sugar beets
    - Andreas Marggraf

- Early 1700's
  - Porcelain
    - John Boettger

- 1829
  - Periodic table (1860)
    - Johann Doebereiner

- 1804
  - Morphine
    - Fredrich Wilhelm Sertuerner

- 1821
  - Caffeine from coffee beans
    - F.F. Runge

- 1904
  - Synthesized Adrenaline
    - Fredrich Stalz
British Isles

- 1607 – King James I
- 1665-1666 – The Great Plague
- 1698 – First medical patent – Epson Salts
  ▶ Trademarks
- 1745 – Guild of St. Luke - Dublin
- 1815 – Parliament passed the Apothecaries’ Act – London
- 1948 – National Health Care Act

Fun Fact

- Sir Isaac Newton
  ▶ 1642 – 1727
  ▶ Apprentice in an apothecary
  ▶ Law of Motion
  ▶ Universal gravitation
  ▶ Practical reflecting telescope

Inventions

- John Walker
  ▶ Britain Chemist
  ▶ 1827
  ▶ Friction Matches
- Sir Joseph Wilson Swan
  ▶ Britain pharmacist
  ▶ 1878
  ▶ Incandescent light bulb

Inventions

- Alfred Bird
  ▶ British registered pharmacist
  ▶ Egg free custard (1837) and baking soda (1843)
- John Lea and William Perrins
  ▶ British pharmacists
  ▶ Worcestershire sauce (1837)

Other Countries

Discovery in the Pharmacy

- 1773
  ▶ Sweden
  ▶ Oxygen and Chloride
  ▶ Carl Schee
- 1792
  ▶ Russia
  ▶ Sugar out of Honey & actions of charcoal
  ▶ Lowitz
- 1950
  ▶ New Zealand
  ▶ Disposable Hypodermic Syringe & Tranquillizer Gun
  ▶ Colon Murdoch

Trade and Problems

- Trade
  ▶ Apothecary Jars
  ▶ Knowledge
- Problems
  ▶ Standardization
  ▶ Pharmacopoeia
The New World

New Drugs/Spices

- 1517 – 1579
- Sassafras
  - By 1770 – 76.5 tons

Cinchona Peruvian Bark Jesuits Malaria

Regions
- New Spain
- New France
- New Sweden and Netherlands
- New England

New Spain (French influence)
- 1725 – First hospital pharmacist
- 1770
- Louisiana
- Pharmacy separated from medicine
- First legal definition in America

Chief Pharmacist
- 1769 - Jean Peyroux – first licensed in what is now the US

New France
- 1604/1606
- Louis Hebert
- First French settler
- Nova Scotia
- 1617 – Quebec
- 1664 – Sister of Charity - Jesuit missionaries

New Sweden and New Netherlands
- 1638
- Hans Kiersted
- Drug Formulas
- 1663-1665
- Gysbet van Imbroch
- New Amsterdam

First pharmacy in North America
New England

- 1609
- First two pharmacist in Virginia
- 1611
- Pharmacist were requested in the colony
- 1613 – The English Housewife

New England

- John Winthrop Jr. (1606 – 1676)
  - Pharmaceutical work
- A secondary profession
- 1698
  - First day to day operations
  - Salem, Massachusetts

Eighteenth Century

- Few practitioners had little formal training
- 1730
- Benjamin Franklin
- Shop – Prescribed over the counter
- 1752 - Pennsylvania Hospital
- 1765 – College of Philadelphia (1821)
  - John Morgan – First Professor to teach Pharmacy
  - Benjamin Rush
- 1780 – German Apotheke in Pennsylvania

The Revolutionary War

- Apothecary General
- Andrew Craigie
- Manufacturing
- Formulary

Young Republic

- Changing face of medicine
- Botany of new plants
- Liberty
- Freedom
- Safety of the public
- 1793
  - Philadelphia
  - Plague - Haiti

Life as a Pharmacist Pre-Civil War

- Wholesalers
- Physicians
- Fraud
- “Front end” for barter
- Influence locally by nationality
Changing face of Medicine That Challenged the Pharmacist

- Heroic Medicine
- Thomsonianism
- Homeopathy
- Advancements in Medicine

1800’s
- 1820 - Pharmacopeia of the United States
- 1830 – USA – National Formulary
- 1852 – American Pharmaceutical Association
  - Oldest Journal 1835 out of PA but then went national
- 1856 – Introduction to Practical Pharmacy
  - First American Pharmacy textbook

Education 1800’s
- Pre-Civil War
  - 1821 - Philadelphia College of Pharmacy
  - 1829 – New York City
  - 1838 - Louisiana
  - 1840 - Maryland
  - 1859 - Chicago

- Post-Civil War - 1900
  - 60 Schools
  - 8 State Schools
  - 2 with Medical Schools
    - 1866 – Medical College of South Carolina
    - 1868 – University of Michigan
    - 1883 – University of Wisconsin

Drugs - Rx Late 1800’s
- Quinine sulfate*
- Morphine sulfate*
- Potassium Iodine
- Opium
- Mercury*
- Ipecac
- Rhubarb
- Ethyl nitrite
- Strychnine*

Fun Fact
- David Herold
  - 1842 – 1865
  - Certificate in Pharmacy
  - Georgetown College
  - Pharmacist’s assistant and clerk for a physician
**Fun Fact**

People in History

- David Henshaw
- Boston
- President’s Cabinet
- Secretary of the Navy
- 1843

---

**Education**

1900's

- 1923 - 4 year high school education as a prerequisite
- 1905 - New York required a college graduation
- 1949 - All but 2 states followed this requirement

---

**How many years?**

- 1868 - U of M - 2 years
- 1892 - University of Wisconsin - 4 years
- Ohio State, Georgia, Nebraska & Minnesota
- AACP
- 1907 - 2 years
- 1925 - 3 years
- 1932 - 4 years
- 1940 - 5 years
- 2006 - 6 years

---

**What degree?**

Early 1900's

- Graduate of Pharmacy
- Doctor of Pharmacy
- Pharmaceutical Chemist
- Master of Pharmacy
- Bachelor of Pharmacy
- Master of Science

---

**Advancement**

1900's

- Home-study/Short Courses
- Continuing Education
- American Association of Colleges of Pharmacy
- First President – Albert Prescot
- American Council on Pharmaceutical Education -1932

---

**Associations**

- Call to licensing and regulations
- 1821 – Philadelphia College of Pharmacy
- Elias Durand
- Grand Army of Napoleon I
- Pharmacy in Philadelphia
- 1825 – First American pharmaceutical journal
- Journal of the Philadelphia College of Pharmacy
- 1852 – American Pharmaceutical Association
- John Maisch – General Secretary
- Call to end altered medications from Britain
Associations

- N.A.R.D.
- Business
  - Cut-rate drug stores
  - Fair-trade acts
  - Chain drug stores
  - Spanish – American War
  - End of tax on proprietary medications

Side Bar – The Soda Fountain

- Elis Durand - Philadelphia
- 1825

- Began to flourish in 1880's due to liquor legislation and hit a peak in 1919
- Money maker for the next ten years plus
- Decreased during WWII

- Note: Saugatuck Drugstore and Soda Fountain – opened 1913

Law State

- Early 1800’s – Attempts with no success
- 1870 – Rhode Island
- 1900 – 44/45 states
- National Association of Boards of Pharmacy

Michigan Law

- 1883
- Michigan State Pharmaceutical Association
- 1885
- Establish a State Board of Pharmacy
- Registered Pharmacist
- All new licenses were to be given by examination
- Fees
- Adulteration a misdemeanor

Law National

- 1906 Federal Food & Drug Act
- 1938 Food, Drug, & Cosmetic Act
- 1972 Food & Drug Administration

Law National

- 1877 & 1908 Federal Act against Opium
- 1911 & 1914 Hague Treaty
- 1912 Harrison Narcotic Act
- 1970 Controlled Substances Act
Drug Companies

- Parke Davis
- Frederick Stearns & Company
- Upjohn

Drug Companies

- Parke Davis & Company
- 1862 – Dr. Samuel Duffield
- Detroit, Michigan
- 1866 – Duffield & Parke
- 1869 – Parke, Jennings & Company
- 1975 – Warner Lambert Company
- Pfizer – 1849 in Brooklyn, NY

Drug Companies

- Frederick Stearns & Company
- 1855
- Detroit, Michigan
- 1940’s merged

Drug Companies

- The Upjohn Company
- 1884
- Patent on “friable pill”
- Hastings, Michigan
- 1886
- Kalamazoo, Michigan
- Dr. William E. Upjohn and Dr. Henry U. Upjohn

Drug Companies During/After the World Wars

- German was the leader
- Manufacturing
- Patents
- Aspirin - $5 million

Want to know more?

- American Institute of the History of Pharmacy
- University of Wisconsin-Madison
- 1941
- Videos of traditional pharmacy services
- Guide to Pharmacy Museums
- United States and Canada
- Book – worldwide

Books:
- Kremer and Urdang’s History of Pharmacy by Sonnedecker
- Pharmacy: An Illustrated History by Cowen & Helfand
- Drugstore Memories by Sonnedecker