Keywords for Week 7

Lecture 12: Scientific Medicine

Humor Theory
Blood / Choler / Phlegm / Black Bile
Girolamo Fracastoro (1478-1553), On Contagion (1546)
Boissier de Lacroix (Sauvages) (1706-1767)
Treatise on the Classes of Diseases (1731)
Nosologia Methodica (1763)
Philippe Pinel (1745-1826)
Nosographie philosophique (1798)
Claude Bernard (1813-1878)
An Introduction to the Study of Experimental Medicine (1865)
Antony von Leeuwenhoek (1632-1723)
Robert Hooke (1635-1702)
Micrographia (1665)
Justis von Liebig (1803-1873)
Chemical theory of fermentation
Putrefaction theory of disease
Louis Pasteur (1822-1895)
Biological theory of fermentation

Germ theory of disease
• Infectious diseases caused by microbes
• Microbes only come from existing microbes
Félix-Archipède Pouchet (1800-1872)
Theory of spontaneous generation
Robert Koch (1843-1910)
Koch’s Postulates
• Pathogen found in all victims
• Can be isolated and grown in pure culture
• Causes disease when infected into healthy animal
• Can be re-isolated from the new victims
Emanuel Merck (1794-1855)
Merck Pharmaceuticals (1827)
Friedrich Bayer (1825-1880)
Bayer Aspirin (1899)

Germ theory review
• Theories of disease causation evolved from filth, to putrefaction, to microbes
• Pasteur and Koch developed new laboratory techniques to explore microbial causation
• Koch’s Postulates offered a way of proving whether or not a microbe caused disease
• Germ theory was widely accepted by general public, becoming a new gospel of germs
Scientific medicine review
• Experimental methods: physiology, chemistry, germ theory
• Standardization of diagnosis: tuberculosis in England the same as tuberculosis in France, India
• Standardization of treatment: treat every case of tuberculosis the same way, regardless of individual or environmental variation

Additional background: