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STS.003 The Rise of Modern Science  
Spring 2008

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## STS.003

Spring 2008

### Keywords for Week 7

#### **Lecture 12: Scientific Medicine**

Humor Theory

Blood / Cholera / 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 van Leeuwenhoek (1632-1723)

Robert Hooke (1635-1702)

*Micrographia* (1665)

Justus 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-Archimède 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:

- Bowler and Morus, "Science and Medicine," MMS, pp. 439-450.