

History of Medicine

History of Science 320 (History 293)
Spring 2003
MWF 10-10:50 a.m.

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117 Bronfman
597-2239

"The history of medicine is in essence the history of the doctor-patient relationship." The aim of this course is to understand the many different ways in which medicine has been defined, practiced, and developed in history. Understanding the history of medicine helps place the theory and practice of modern medicine in social-historical context.

Four texts and a reading packet provide the foundation for studying the many medical changes and developments to the early 20th century.

Classes consist of the analysis and discussion of assigned readings, so that active participation is essential. There are many different ways to evaluate and interpret the past; the more their representation, the fuller and more refined one's understanding.

Grading will be based on class participation, 6 short papers [2+ pages each], a midterm, and a second in-class hour exam, in roughly equal proportions, plus a little final short quiz (<5%). The grade for class participation derives from 3 components: attendance, active discussion, and overall quality of contributions.

The following are the four required texts; copies have been placed on intensive reserve in Schow Library:

W. F. <u>Bynum</u>	<u>Science and the Practice of Medicine in the Nineteenth Century</u>
L. I. <u>Conrad</u> , et al	<u>The Western Medical Tradition: 800 BC to AD 1800</u>
Lois <u>Magner</u>	<u>A History of Medicine</u>
Sherwin B. <u>Nuland</u>	<u>Doctors: The Biography of Medicine</u>

[Although it's the best of the most up-to-date histories of medicine, Magner's book is very expensive, priced the same in cloth and paper].

In addition to the texts, a course reading packet may be obtained from Ms. Kate Fletcher in 189 Bronfman. The packet consists of 337 pages, and will be charged at \$ 8.40 (cost) to students' term bills.

The usual provisions of the Honor Code apply to papers and examinations in this course.

The following pages give the schedule of classes and reading assignments for the semester.

HISTORY OF MEDICINEHistory of Science 320
Spring 2003**CLASS SCHEDULE and READING ASSIGNMENTS**1. 2/7, Fr. **Introduction. Why History of Medicine?**

Definition of Medicine(s). Reasons for studying History of Medicine.

Chronology or typology [Paleo/Ancient/Greek/Roman/Islam-Arabic/Medieval Latin/European 16th-18th/19th/Modern.]

Dependencies on Anatomy and Physiology; Botany; Chemistry [Cooking].

Theory/Practice. Sources. Nursing, Hospitals, Instruments, Societies, Journals, Pharmaceuticals, Universities, [Research]; Literature.

2. 2/10, Mo. **Orientation. Paleomedicine**

Disease and Medicine in History, an overview and orientation to the history of medicine.

Paleomedicine: Evidence [bone, teeth, mummy, soft tissue; painting, artifact]. Disease frequency, type; difficulty of diagnosis]. Remedies. Trepanation. limb/body deformation. Osteomyelitis; mastoiditis.

-----Readings-----

(68 pps.)

Packet: Porter, pp. 14-43, "The Roots of Medicine"Magner, pp. 1-13, "Paleopathology and Paleomedicine"Packet: Ackerknecht, pp. 3-9, "Paleopathology and Paleomedicine"Ackerknecht, pp. 10-17, "Primitive Medicine"3. 2/12, We. **Ancient Medicine**

Mesopotamia; magic; Egypt, rationality of E. Smith Papyrus. Ebers, Berlin papyri. Surgery, Gynecology. [schistosomiasis?] India, Ayurvedic Medicine. China. Conservatism of traditional medicine.

-----Readings-----

(71 pps.)

Magner, pp. 17-35, "Medicine in Ancient Civilizations"

37-59, "Medical Traditions of India and China"

Packet: Porter, pp. 135-146, "Indian Medicine"Porter, pp. 147-162, "Chinese Medicine"

2/14 Fr.

WINTER CARNIVAL WEEKEND; VALENTINE'S DAY

4. 2/17, Mo. **Greek Medicine**

Tradition. The Context of PreSocratics and Greek Rationality. 4 Humors, relation to Malaria, Psychology. Aristotle, Plato, and Hellenistic Medicine. Aristotle the biologist; On Reproduction. Classification. 4 Causes. 3 chambered heart. Asclepius and the Aesculapians
-----Readings-----

(36 pps.)

Magner, 63-76(top), "Greco-Roman Medicine"Conrad, 11-19; 31-33, 33-38.Packet: Aristotle, "The Generation of Animals", 79-835. 2/19, We. **Hippocrates. Transition to Greco-Roman Medicine**

Hippocratic Medicine. Oath, and implications. Cooks. Diet. Regimen. Diagnosis. Urinalysis. Prognosis. Alexandria, Museum and Library. Erisistratus and Herophilus, 3 great systems. The 4 chambered heart and the Blood.
-----Readings-----

(60 pps.)

Conrad, 19-31Nuland, 3-30, "Hippocrates."Packet: Hippocrates "The Nature of Man," 43-47; "The Sacred Disease," 139-144 "The Hippocratic Oath"[261]
Source Book of Greek Science: 486-489, on climate;
4 humors; 498-500, on Prognosis6. 2/21, Fr. **Greco-Roman Medicine; Galen.**

Methodists, Empiricists, Dogmatists [contrasts between theory and practice.] New Terminology [e.g. duodenum]. Celsus. Galen.
-----Readings-----

(85 pps.)

Conrad, 39-70, "Rome and Galen"Magner, 76-96, "Greco-Roman Medicine"Nuland, 31-60, "Galen"Rec: C. Singer, A Short History of Anatomy and Physiology, 37-62, "The Empire..."; From Magic to Science, 17-32, "Science under the Roman Empire"7. 2/24, Mo. **From Rome to the Middle Ages**

Later Roman medicine. Encyclopedism. Christianity. Intellectual "Dark Ages". Islamic Expansion Ceases. The Western Medieval Technological Revolution: Agriculture, Population,

Towns, Universities. Scholasticism. Recovery of Ancient Knowledge. Compass, Gunpowder, Mechanical clock. Crusades.

-----Readings-----

- (38 pps.) Conrad (V. Sutton), 71-87, "Medicine in Late Antiquity and the Early Middle Ages"
Packet: Source Book of Greek Science, 480-486, Galen; 526-529, Treatment./Porter, 83-92, "Medicine and Faith"
 Rec: C. Singer, "The Dark Ages..Translators..Universities..," 62-70, A Short History of Anatomy and Physiology

8. 2/26, We. **Arabic Medicine**

Jundishapur. Transmission. Hospitals, First Aid, Pharmacopeia. New Terminology. Al Hazen, optics, and eye. Rhazes and measles/smallpox. Avicenna; Ishaq on "the Galenic System," Ibn al Nafis and pulmonary circulation. Current practice of traditional medicine. Crusades.

-----Readings-----

- (69 pps.) Conrad, 93-138, "The Arab-Islamic Medical Tradition"
Magner, 133-149, "Islamic Medicine"
Packet: Source Book of Medieval Science:
 705-715, "The Galenic System" [Ishaq]
 715-720, "Canon," [Avicenna]
 Rec: Nasr, Science and Civilization in Islam, 184-229, "Medicine"

9. 2/28, Fr. **Medieval Medicine**

Salerno. Medieval translation and "recovery". Eyeglasses. Brandtwein, and soap. Mondino and his work. Medical astrology. Medical Schools - anatomy, physiology, texts, status. Leprosy. Bubonic plague, 1344ff disaster.

-----Readings-----

- (63 pps.) Magner, 99-114, "The Middle Ages"
Conrad, 139-182, "Medicine in Medieval Western Europe"
Packet: Source Book of Medieval Science, 724-726,
 "Anatomical Demonstration at Salerno"
 Rec: Singer (Anatomy), 66-86, "The Middle Ages and Renaissance"; (Magic), 71-81, "The Age of Arabian Infiltration," and "Translation from the Arabic"

10. 3/3 Mo. **Medieval Diseases**

Leprosy. Plague. Insanity. 15th century revival of practical medicine.

-----Readings-----

(40 pps.) Magner, 114-128, "The Middle Ages" (Plague, Leprosy)
Conrad (Nutton), 183-205, "Medicine in Late Antiquity and
the Early Middle Ages"
Packet: Sourcebook of Medieval Science, 773-774,
"Bubonic Plague"

11. 3/5, We. **Medieval Medicine - Exemplars**

Trotula; Guy de Chauliac. Hildegard of Bingen. Salerno; Mondino;
-----Readings-----

(38 pps.) Packet: Sourcebook of Medieval Science,
729-739, "Anatomy" [Mondino da Luzzi]
742-745, "General Instructions for the Practitioner"
761-767, "Gynaecology" [Trotula]
775-778, Salernitan Diet and Regimen [poem]
785-787, "How to Make Aqua Vitae," [Aldreotti]
791-795, "History of Surgery" [Chauliac]
Singer (Magic), 223-226, "on Man, the Microcosm,"
[Hildegard]

12. 3/7, Fr. **Renaissance, Paré, and Paracelsus**

Paracelsus and Paré. Alchemy and surgery. Linacre, Caius, and Professionalization. Hygiene.
Ergotism, Syphilis.

-----Readings-----

(66 pps.) Conrad, 310-325, (Paracelsus)
Magner, 153-157;165-183, "Medicine and the Renaissance."
Nuland, 94-119, "Ambroise Paré"

13. 3/10, Mo. **Vesalius [the Copernicus of Anatomy?]**

The Scientific Revolution in Anatomy

-----Readings-----

(112 pps.) Conrad, 264-292, "Anatomy"
Magner, 158-164, [Vesalius];
Nuland, 61-93, "Andreas Vesalius"
Packet: Singer, 187-215, "A Vesalian Atlas" (**skim**)
Vesalius' De Fabrica, "Introduction", 54-60
Heseler, "Vesalius' First Public Anatomy", 61-65
Platter, "Journal: Graverobbing for anatomy", 66-67
Rec: Singer (Anatomy), 110-135, "Vesalius, reformer of Anatomy"

14. 3/12, We. **Background to Modern Medicine, 1500-1700.**

Conrad, 215-264 incl. Demographics, Diseases(syphilis, typhus), Famine, plague, European diseases abroad; Scurvy, Lind, acclimatisation abroad, world of the sick (physicians, hospitals, apothecaries, women, regulations, forensics, popular medicine, religion, death, witchcraft and magic, the sick poor (hospitals, charities), learned medicine (revival Greek medicine, translations, books; practical medicine and Galenism, method, innovation), causes of disease (Galen, Fernel, Fracastoro). Surgery (humanism, innovation); medical botany, herbals, old and new drugs.

-----Readings-----

(69 pps.)

Conrad, 215-264, "Medicine in Early Modern Europe, 1500-1700" and 292-310, "Surgery," "Botany and Medicine"

15. 3/14, Fr. **Medicine and The Scientific Revolution**

Sydenham. Malaria, Quinine. Royal Society, Netherlands, Bacon, Descartes, the body, Newton, Willis, microscope, Hooke, Leeuwenhoek, experimental physiology, Lower and blood; Moliere, Sanctorius, Borelli, iatrophysics. Curing, The "end" of ancient medicine. People (charity, hospitals), Madness.

-----Readings-----

(59 pps.)

Conrad, 340-361 "The New Science,"
Magner, 217-225 "Selected Aspects of Clinical and Preventive Medicine"
Packet, Porter, 217-244, "The New Science"

16. 3/17, Mo. **New Anatomy and the Circulation of the Blood**

Fabricius. Fracastoro, Columbo. Cesalpino. William Harvey, Servetus and Ibn al-Nafis. Transfusions. [Sanctorio, pulsilogium, invisible emanation. Metabolism. Malpighi sees capillaries. Blood Chemistry. Boyle and Mayow: nitro-aerial particles. New Problems: function of respiration; circulation.]

-----Readings-----

(66 pps.)

Conrad, 325-340 "The Circulation of the Blood"
Magner, 189-213, "The Scientific Revolution and the Circulation of the Blood"
Nuland. 120-144, "William Harvey"

17. 3/19, We. **De Motu Cordis**

Harvey's experimental method illustrated. Discussion. In class video [Royal College of Physicians]: "William Harvey and the Circulation of the Blood"

18. 3/21, Fr. **Midterm Exam**

=====SPRING BREAK=====

The Rise of Modern Medicine

19. 4/7, Mo. **The Enlightenment and Medicine – I**

Boerhaave, Morgagni, Frank, Scurvy, Lind, Blane, Pringle, (Szent-Györgi, Pauling). Philosophy, Quantification, Nosology, Sciences of Man, Anatomy and physiology, generation, vitalism. Diagnostics, Disease, Pathology. Therapeutics. Insanity. Childbirth.

-----Readings-----

(76 pps.) Magner, 225-239, (Bases, Anatomy, Reform, Nutrition)
Conrad (Porter), 371-431, "The Eighteenth Century"

20. 4/9, We. **The Enlightenment and Medicine – 2**

Surgery, Operations, Professionalization. Popular medicine. Medical Education, Universities, Private Schools, Hospitals. Quacks. The State, Poverty, Statistics, Medical Police, Military, Hospitals. Disease and Society.

-----Readings-----

(42 pps.) Conrad (Porter), 434-475, "The Eighteenth Century"

21. 4/11, Fr. **18th Century Exemplars: Morgagni and Hunter**

The Lives and Contributions of Two Leading Physicians and Researchers

-----Readings-----

(55 pps.) Nuland, 145-170, Giovanni Morgagni
171-199, John Hunter

22. 4/14, Mo. **Towards Hospital Medicine, 1700-1850**

Hunter, Monroe, Cullen, nosology; Morgagni, Bichat, Auenbrügger, Laennec, PCA Louis [statistics], Broussais, International comparisons. Boerhaave and Leiden; Edinburgh; Paris.

-----Readings-----

- (63 pps.) Bynum, 1-24, "Medicine in 1790"
 25-54, "Medicine in the Hospital"
Packet: Pinel, "Clinical Training of Doctors," 343-351

23. 4/16, We. **Medicine in the Community [Public Health]**

Johann Peter Frank and Medical Police. Lind, scurvy and citric acid, 'limeys'. Mather and smallpox inoculation. Cholera. Chadwick. Shattuck. Sanitation and Public Health. Regulation. (Diet, Fitness, Spas. Gymnasia. Mens sana in corpore sano; Clean water, the water cure, and physical exercise)

-----Readings-----

- (86 pps.) Magner, 239-252, (Smallpox from Inoculation to Eradication)
Bynum, 55-91, "Medicine in the Community"
Conrad (Porter), 431-434, (Inoculation)
Packet: Porter, 397-427, "Public Medicine"

24. 4/18 Fr. **Public Health: Exemplars**

Edward Jenner, Cowpox, and vaccination. The Eradication of Smallpox. John Snow and the Broad Street Pump: epidemiology and epistemology. Edwin Chadwick, English working class conditions, and the need for sanitary reform.

-----Readings-----

- (73 pps.) Magner, 245-252, Jenner and the Eradication of Smallpox
Packet: Jenner on Cowpox, 299-309
 Chadwick's Report, 217-239
 "Snow on Cholera", 25-55

25. 4/21, Mo. **Medicine in the Laboratory [Scientific Medicine]**

Liebig, Virchow, Müller, Bernard, Welch; Koch, Pasteur, Lister
 Medical Practice in Germany, France, Britain, and the USA.

-----Readings-----

- (75 pps.) Bynum, 92-117, "Medicine in the Laboratory"
 123-127, "Microscopy" [Virchow]
 137-141, "Theory and Practice of Scientific Medicine"
Nuland, 304-342, Rudolf Virchow

26. 4/23, We. **Revolution in Surgery: Anesthesia**

Antiquity. Sleeping Sponge. Analgesic-anesthetic. Mandrake/henbane. Opium. Ether frolics. Humphrey Davy. Animal experiments. Crawford Williamson Long. Laughing Gas. Horace Wells. Charles T. Jackson. William T.G. Morton. October 16, 1846, MGH. "Letheion." Controversy. Childbirth use. Bandwagon. Amputations. Internal surgery. Infections. Joseph Lister and carbolic acid. Towards a rational anesthesia.

-----Readings-----

(70 pps.) Magner, 280-302, "The Art and Science of Surgery"
Bynum, 118-123 "Chemistry" [Anesthesia]
Nuland, 263-303, "Surgery without Pain"

27. 4/25, Fr. **More Revolution: Asepsis [or Antisepsis?]**

Internal surgery. Infections. Joseph Lister and carbolic acid. Resistance.

-----Readings-----

(55 pps.) Bynum, 132-137, "Antiseptic Surgery" [Lister]
Nuland, 343-385, "Joseph Lister"
Packet: Lister on Antisepsis, 247-252

28. 4/28, Mo. **Revolutions Again: Germ Theory & Bacteriology**

Cell theory, Schleiden and Schwann. Henle, Magendie, Claude Bernard and Experimental Medicine. Compound microscopes: mammalian egg; nucleus. tissue/organ/etc.: classification. Sequard, Virchow. Pasteur, germ theory; Koch, and postulates. Pettenkoffer, Bacteriology. Rabies. Anthrax. Laboratories. Walter Reed and Yellow Fever.

-----Readings-----

(67 pps.) Magner, 305-331, "The Germ Theory of Disease: Medical Microbiology"
Bynum, 127-132, "Bacteriology"
Packet: Pasteur on Germ Theory, 253-257
 Koch on Tuberculosis, 319-329
Packet: Porter, 428-445, "From Pasteur to Penicillin"

29. 4/30, We. **Childbed Fever, Midwifery, and Obstetrics**

Professionalization and women's exclusion; the Chamberlen family and obstetric forceps; Holmes, Semmelweis, and puerperal fever. Obstetrics and Gynecology. women return to medicine - Blackwell, Jacobi;

-----Readings-----

- (79 pps.) Magner, 259-275, "Childbed Fever, Midwifery, and Obstetrics"
Nuland, 238-262, Ignac Semmelweis
Bynum, 202-208, "Women and Medicine"
Packet: (Schiebinger) Women's Traditions, 102-118
 Semmelweis on Puerperal Fever, 240-246
 Blackwell, Women and Medicine, 282-287
 Rec: L.T. Ullrich, A Midwife's Tale. [cf. video, too]

30. 5/2, Fr. **Diagnostics and Therapeutics**

Auenbrügger, Corvisart, Laennec, von Behring, Ehrlich, serum therapy, toxins and anti-toxins, Diphtheria, Roux, Yersin, Metchnikoff, 606, Salvarsan, Domagk and prontosil, Fleming and penicillin, Florey and Chain, antibiotics, Waksman, anaphylaxis. Almoth Wright. antibodies, Landsteiner, Burnet, clonal theory. Jerne/Milstein, Mabs. AIDS. Immunology.

[Special knives for lithotomy; hypodermic syringe; otoscope; laryngoscope. Vitamins. Vitamin D, Rickets, and the Rockefeller Foundation. Public Health and Nutrition. FDA [Sinclair Lewis; swill milk]. X-Rays. Banting and Best and insulin. Hormones. endocrinology. Typhoid Mary.]

-----Readings-----

- (67 pps.) Magner, 335-365, "Diagnostics and Therapeutics"
Bynum, 158-164, "Immunology"
 164-175, (Pharmaceuticals, Experimental
 Physiology, X-Rays)
Packet: Porter, 445-461, (Immunity, Chemotherapy,
 Antibiotics)

31. 5/5, Mo. **Doctors and Patients**

René Laennec and the Stethoscope. Diseases of the Chest. Education, Flexner Report, Hospitals, Specialization, Asylums, Who Pays? Being a Patient, Alice James.

-----Readings-----

- (79 pps.) Nuland, 200-237, René Laennec
Packet: Laennec on Diseases of the Chest, 310-313
Bynum, 176-202; 208-217, "Doctors and Patients",

32. 5/7, We. **Other Aspects of 19th Century Medicine**

Potpourri: Tropical Medicine, Research Institutions. Hospitals, Nursing, Insanity and Treatment. Specialization. Alternative Medicine.

-----Readings-----

- (76 pps.) Bynum, 142-158, "Medical science goes public,"

218-226, "Conclusion: Did science matter?"

Packet: Porter, 375-396

Nightingale on Hospitals, 360-364; Mass. General Hospital Rules, 365-367; Pinel on Insanity, 166-177;
Dix on Treatment of the Insane, 352-359

33. 5/9, Fr. **Second Hour Exam**

34. 5/12, Mo. **Surgery after Lister**

Billroth. New Operations. X-rays. Specialization. Cardiology. Transplants.

-----Readings-----

(64 pps.)

Nuland, 457-489, "The Story of Transplantation"

Packet: Porter, 597-927, "Surgery" (after Lister)

35. 5/14, We. **20th Century Surgery: Two Exemplars**

William Halsted and the transformation of American surgery. From blue babies to heart transplants.

-----Readings-----

(78 pps.)

Nuland, 386-421, "William Stewart Halsted"

Packet: Burney, A Mastectomy, 383-389

Nuland, 422-456, "Helen Taussig"

36. 5/15, Fr. **Review and Reflection**

Quiz. SCS.

Reflections on the History of Medicine. Medicine, Society, and the Future.

-----Readings-----

(36 pps.)

Conrad (Neve), 477-494, "Conclusion" (to 1800)

Packet: Porter, 710-718, "The Past, the Present, and the Future" (to 2000)

Porter, "The Rise and Fall of the Age of Miracles," 1-9