Anatomy, Physiology, Medicine in the ancient world
Hippocrates 460 to 370 BC

Born on isle of Kos.

Two schools of medicine: the Knidian School and the Koan School (Hippocrates and his followers).
The Hippocratic bench
Hippocrates categorized

- Endemic, epidemic
- Acute, chronic
- Crisis, resolution, relapse, convalescence
- Diagnosed pulmonary diseases: e.g., clubbing of fingers
- Cauterized wounds
- Importance of exercise
Herophilos
b 335 to 280 BC

• Born in Chalcedon.
• Educated in Alexandria under Praxagoras (Koan).
• Greatest Physician of Antiquity
Herophilos’ writings

• None exist: perhaps lost in Alexandrian fire (4\textsuperscript{th} C).

• Galen (129 to 200+ AD) left detailed comparative references to his work (and that of Erasistratus)

• Von Staden, H. 1989 Herophilus: the Art of Medicine in early Alexandria. Cambridge U
Distinguished arteries/veins
Classified and categorized pulse variations
Did first detailed study of brain

The Major Portions of the Brain Include the Cerebrum, Cerebellum and Brain Stem

- Meninges
- Skull
- Cerebrum
- Diencephalon
- Midbrain
- Pons
- Medulla oblongata
- Convolution
- Sulcus
- Corpus callosum
- Transverse Fissure
- Cerebellum
- Spinal Cord
Studied the eye and its connection with the brain
How did he do it?

- Herophilus and Erasistratus
Empiricism

• Knowledge comes uniquely from sensory experience.
• Early empiricism: advocated data collection for things as they present themselves.
• More active interventions became associated with empiricism in and after the Renaissance
Erasistratus
304 BC to 250 BC.

• Arteries carry vital pneuma: basic bodily function

• Veins carry blood; nutrition and growth

• Nerves carry psychic pneuma; sensation and movement.
Disease occurs when substance of one vessel is allowed to enter another vessel type.

- E.g., blood from veins mixes with psychic pneuma (nerves): paralysis.
- E.g., blood from veins enters arteries: inflammation and fever.
Triplookia

• Metaphor of weaving.
• Each of the vessel types is closely associated with smallest forms of the other two
Erasistratus did practice surgery

• Anatomy, Physiology led to understanding: a higher calling
• Clinical medicine led to wellness of patient: knowledge less permanent, of lower stature.
Galen, AD 129 to 200/216. Pergamon.
Born in Pergamon (present day Turkey)
Aesclypias
Physician to the gladiators
Marcus Aurelius and son Commodus
Antonine Plague

Identify the culprit as smallpox
Galen on diagnosis

• Like Herophilus, included a prognostic element; look for signs that can tell you how the disease will resolve.

• Prevailing methods involved divination and more mystical activities.
Galen’s dissections

- Anatomy of Trachea and larynx (source of the voice)
- Both veins and arteries contain blood
- One system fed, the other aerated the body
- Misapprehensions: heart sucked blood (arteries pumped); blood use dup in its bodily transit-regenerated in liver.
Galen and psychotherapy

“Eventually, I’d like to see you able to put yourself back together.”
A priori or a posteriori knowledge

Avicenna b 980, d 1037 AD
Avicenna’s Canon wedded Aristotelian Philosphy with the Galenic corpus
On the location of the life force

- Soul is divided among:
  - Brain: rational
  - Heart: spiritual
  - Liver: nutritive

- Heart is the centre of the soul (rational, spiritual and nutritive)
On reproduction

- Aristotle: male contributes the soul which provides efficient cause (movement, activity) to the form. Female contribute only material. Metaphor: seed planted in fertile ground
- Galen: Both male and female provide semen. Sperm from the parents combine to form new individual.
Avicenna’s text

• Widely used through the late middle ages
The science of becoming

Preformationism and epigenesis