SCIENCE, PROFESSIONALISM AND THE DEVELOPMENT OF
MEDICAL EDUCATION IN ENGLAND: AN HISTORICAL SOCIOLOGY.

by

Paul K. Underhill, M.A. (Cantab).

Ph.D. University of Edinburgh 1987
PAGE
NUMBERS
CUT OFF
IN
ORIGINAL
Table 2'A' - Breakdown of Those Licensed by the RCP in Each Quarter Century, 1701-1825.

<table>
<thead>
<tr>
<th></th>
<th>1701-25</th>
<th>1750</th>
<th>1775</th>
<th>1800</th>
<th>1825</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellows</td>
<td>50</td>
<td>63</td>
<td>46</td>
<td>48</td>
<td>84</td>
</tr>
<tr>
<td>Licentiates</td>
<td>33</td>
<td>21</td>
<td>75</td>
<td>122</td>
<td>241</td>
</tr>
<tr>
<td>Extra-Licentiates</td>
<td>58</td>
<td>37</td>
<td>25</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>141</td>
<td>121</td>
<td>146</td>
<td>187</td>
<td>368</td>
</tr>
</tbody>
</table>


Table 2'B' - The Population of England in the Eighteenth Century.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total(Millions)</th>
<th>Growth(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1701</td>
<td>5.058</td>
<td>2.58</td>
</tr>
<tr>
<td>1711</td>
<td>5.230</td>
<td>3.40</td>
</tr>
<tr>
<td>1721</td>
<td>5.350</td>
<td>2.29</td>
</tr>
<tr>
<td>1731</td>
<td>5.263</td>
<td>-1.63</td>
</tr>
<tr>
<td>1741</td>
<td>5.576</td>
<td>5.95</td>
</tr>
<tr>
<td>1751</td>
<td>5.772</td>
<td>3.52</td>
</tr>
<tr>
<td>1761</td>
<td>6.147</td>
<td>6.50</td>
</tr>
<tr>
<td>1771</td>
<td>6.448</td>
<td>4.90</td>
</tr>
<tr>
<td>1781</td>
<td>7.042</td>
<td>9.21</td>
</tr>
<tr>
<td>1791</td>
<td>7.740</td>
<td>9.91</td>
</tr>
<tr>
<td>1801</td>
<td>8.664</td>
<td>11.94</td>
</tr>
</tbody>
</table>

Table 2'C' - Increase in the Number of British Medical Students, 1601-1850.

<table>
<thead>
<tr>
<th>Year</th>
<th>Oxbridge</th>
<th>Continent</th>
<th>Scotland</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1601-1650</td>
<td>599</td>
<td>36</td>
<td>--</td>
<td>635</td>
</tr>
<tr>
<td>1651-1700</td>
<td>933</td>
<td>197</td>
<td>38</td>
<td>1168</td>
</tr>
<tr>
<td>1701-1750</td>
<td>617</td>
<td>385</td>
<td>406</td>
<td>1408</td>
</tr>
<tr>
<td>1751-1800</td>
<td>246</td>
<td>194</td>
<td>2594</td>
<td>3034</td>
</tr>
<tr>
<td>1801-1850</td>
<td>273</td>
<td>29</td>
<td>7989</td>
<td>8291</td>
</tr>
</tbody>
</table>


Table 2'D' - Nationalities of Graduates from the University of Leyden, 1709-38.

<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holland</td>
<td>75</td>
</tr>
<tr>
<td>South Netherlands</td>
<td>1</td>
</tr>
<tr>
<td>German-Speaking</td>
<td>48</td>
</tr>
<tr>
<td>English-Speaking</td>
<td>43</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>178</td>
</tr>
</tbody>
</table>


As many as 746 English-speaking medical students were trained at Leyden under Boerhaave; only a minority graduated.

For a fuller and more detailed breakdown of the origins of Boerhaave's English-speaking students, see:


Figure 1. A dissection in the late fifteenth century. Reprinted from Johannes de Ketham, *Fasciculus medicinae*, ed. Petrus Andrea Morsanus (Venice: Johannes et Gregorius de Gregorius, 1495).
### Table 2'E' - Hospitals in the Eighteenth Century

#### London

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Foundation</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>St.Bartholemew's</td>
<td>1112</td>
<td>1731</td>
</tr>
<tr>
<td>St.Thomas'</td>
<td>13th Cent.</td>
<td>1740</td>
</tr>
<tr>
<td>Westminster</td>
<td>1719</td>
<td>1841</td>
</tr>
<tr>
<td>Guy's</td>
<td>1726</td>
<td>1740</td>
</tr>
<tr>
<td>St.George's</td>
<td>1734</td>
<td>1752</td>
</tr>
<tr>
<td>London</td>
<td>1740</td>
<td>1785</td>
</tr>
<tr>
<td>Middlesex</td>
<td>1745</td>
<td>1822</td>
</tr>
</tbody>
</table>

#### Provinces

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol</td>
<td>1735</td>
</tr>
<tr>
<td>Winchester</td>
<td>1735</td>
</tr>
<tr>
<td>York</td>
<td>1740</td>
</tr>
<tr>
<td>Exeter</td>
<td>1741</td>
</tr>
<tr>
<td>Bath</td>
<td>1742</td>
</tr>
<tr>
<td>Northampton</td>
<td>1743</td>
</tr>
<tr>
<td>Newcastle</td>
<td>1751</td>
</tr>
<tr>
<td>Nottingham</td>
<td>1752</td>
</tr>
<tr>
<td>Manchester</td>
<td>1752</td>
</tr>
</tbody>
</table>

Numerous other infirmaries existed, as no less than 23 were established between 1736 and 1779. Edinburgh and other Scottish hospitals are not included above. Data compiled from the following sources, but years of origin are inconsistent:

<table>
<thead>
<tr>
<th>Item</th>
<th>Charge(s.d.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Emulsion</td>
<td>4/6</td>
</tr>
<tr>
<td>A Mucilage</td>
<td>3/4</td>
</tr>
<tr>
<td>Gelly of Hartshorn</td>
<td>4/0</td>
</tr>
<tr>
<td>Plaster to Dress Blister</td>
<td>1/0</td>
</tr>
<tr>
<td>An Emollient Glistter</td>
<td>2/6</td>
</tr>
<tr>
<td>A Cordial Bolus</td>
<td>2/6</td>
</tr>
<tr>
<td>The Same Again</td>
<td>2/6</td>
</tr>
<tr>
<td>A Cordial Draught</td>
<td>2/4</td>
</tr>
<tr>
<td>The Same Again</td>
<td>2/4</td>
</tr>
<tr>
<td>Another Bolus</td>
<td>2/6</td>
</tr>
<tr>
<td>Another Draught</td>
<td>2/4</td>
</tr>
<tr>
<td>A Glass of Cordial Spirits</td>
<td>3/6</td>
</tr>
<tr>
<td>Blistering Plaster to the Arms</td>
<td>5/0</td>
</tr>
<tr>
<td>The Same to the Wrists</td>
<td>5/0</td>
</tr>
<tr>
<td>Two Boluses Again</td>
<td>5/0</td>
</tr>
<tr>
<td>Two Draughts Again</td>
<td>4/8</td>
</tr>
<tr>
<td>Another Emulsion</td>
<td>4/6</td>
</tr>
<tr>
<td>A Pearl Julep</td>
<td>4/6</td>
</tr>
<tr>
<td>An Ivory Pipe Armed</td>
<td>1/0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>63/0</strong></td>
</tr>
</tbody>
</table>

Table 2'G' - Abstract of the Apothecaries Act Operative from 1st August, 1815.

(a) Repeal of powers for searching, examining and burning drugs within seven miles of London.

(b) Re-enacts powers for searching throughout England, with penalties for the sale of bad drugs.

(c) Ten years' membership minimum qualification for the Court of Assistants and to be allowed to take part in searching.

(d) Penalties for refusal to make up prescriptions or negligent mixing of drugs.

(e) Act to be enforced by Master, Wardens et.al. of WSA.

(f) No act valid unless carried out at Apothecaries' Hall with a quorum of thirteen, Master to be present.

(g) Twelve examiners to be chosen to examine throughout England and Wales.

(h) Above to be in office for one year only, but re-appointable.

(i) No new apothecary to practise without a certificate, nor under the age of twenty-one.

(j) No candidate to be examined without five years' apprenticeship and testimonials.

(k) Apothecaries' assistants also to be examined.

(l) Penalty of 20 to be imposed on an unlicensed apothecary, and of 5 on an unlicensed assistant.

(m) Act not to affect chemists and druggists.


### Table 3'A' - Educational Background of London Hospital Appointments to Full Surgeoncies, 1800-55

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Total</th>
<th>Same</th>
<th>Other#</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Bartholemew's</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Guy's</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>St. George's</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>St. Thomas'</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>London</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Middlesex</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Westminster</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>University College*</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>St. Mary's*</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>King's College*</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Charing Cross*</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>57</td>
<td>35</td>
<td>16</td>
<td>6</td>
</tr>
</tbody>
</table>

# 'Other' refers to either London or Provincial Hospitals.

* Denotes new foundations in the nineteenth century.


N. Moore, "History of St. Bartholemew's Hospital", London, 1918, (2 Vols.).


See also Plarr's Lives.
### Table 5'A' - The Personnel and Distribution of the Oxford Professoriate in Natural and Medical Science, 1846

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regius Professor of Medicine</td>
<td>Dr. Kidd.</td>
</tr>
<tr>
<td>Sedleian Professor of Natural Philosophy</td>
<td>G.L. Cooke, BD.</td>
</tr>
<tr>
<td>Savilean Professor of Geometry</td>
<td>Baden-Powell, MA.</td>
</tr>
<tr>
<td>Savilean Professor of Astronomy</td>
<td>W.F. Donkin, MA.</td>
</tr>
<tr>
<td>Professor of Botany and Rural Economy</td>
<td>Dr. Daubeny.</td>
</tr>
<tr>
<td>Tomlins Praelector of Anatomy</td>
<td>Dr. Kidd.</td>
</tr>
<tr>
<td>Clinical Professor of Medicine</td>
<td>Dr. Ogle.</td>
</tr>
<tr>
<td>Aldrichian Professor of Medicine</td>
<td>Dr. Ogle.</td>
</tr>
<tr>
<td>Professor of Anatomy</td>
<td>Dr. Kidd.</td>
</tr>
<tr>
<td>Professor of Chemistry</td>
<td>Dr. Daubeny.</td>
</tr>
<tr>
<td>Reader in Experimental Philosophy</td>
<td>R. Walker, DD.</td>
</tr>
<tr>
<td>Reader in Mineralogy</td>
<td>Dr. Buckland.</td>
</tr>
<tr>
<td>Reader in Geology</td>
<td>Dr. Buckland.</td>
</tr>
</tbody>
</table>

Note: The Readership in Anatomy to which Henry Acland was appointed was not classed as an official University office.

### Table 5'B' - Oxford University Medical Degrees, 1822-1834

<table>
<thead>
<tr>
<th>Date</th>
<th>M.D.</th>
<th>M.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1822</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>1823</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>1824</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1825</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1826</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1827</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>1828</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1829</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1830</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>1831</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1832</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1833</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>1834*</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15</td>
<td>29</td>
</tr>
</tbody>
</table>

* Up to 24th April.

### Table 6'A' - Syllabus of University College, London's Medical Faculty

<table>
<thead>
<tr>
<th>Year</th>
<th>Subjects Studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chemistry, Natural Philosophy and Botany; Introduction to Anatomy and Anatomical Dissection.</td>
</tr>
<tr>
<td>2</td>
<td>Materia Medica and Pharmacy; The Nature and Treatment of Diseases; Physiology and Anatomy.</td>
</tr>
<tr>
<td>3</td>
<td>Midwifery, Comparative Anatomy, Surgery, Clinical Lectures, and Hospital Practice.</td>
</tr>
<tr>
<td>4</td>
<td>More Intensive and Advanced Study of Specialised Medical Subjects.</td>
</tr>
</tbody>
</table>

### Table 6'B' - University College London: Registering for Day Courses, 1828-1858

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Medical Students</th>
<th>Medical Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1828</td>
<td>392</td>
<td>165</td>
<td>557</td>
</tr>
<tr>
<td>1829</td>
<td>340</td>
<td>256</td>
<td>596</td>
</tr>
<tr>
<td>1830</td>
<td>268</td>
<td>252</td>
<td>516</td>
</tr>
<tr>
<td>1831</td>
<td>168</td>
<td>232</td>
<td>400</td>
</tr>
<tr>
<td>1832</td>
<td>148</td>
<td>283</td>
<td>431</td>
</tr>
<tr>
<td>1833</td>
<td>122</td>
<td>347</td>
<td>469</td>
</tr>
<tr>
<td>1834</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>1835</td>
<td>114</td>
<td>418</td>
<td>532</td>
</tr>
<tr>
<td>1836</td>
<td>97</td>
<td>438</td>
<td>535</td>
</tr>
<tr>
<td>1837</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>1838</td>
<td>146</td>
<td>494</td>
<td>641</td>
</tr>
<tr>
<td>1839</td>
<td>141</td>
<td>423</td>
<td>564</td>
</tr>
<tr>
<td>1840</td>
<td>145</td>
<td>344</td>
<td>489</td>
</tr>
<tr>
<td>1841</td>
<td>154</td>
<td>338</td>
<td>482</td>
</tr>
<tr>
<td>1842</td>
<td>196</td>
<td>334</td>
<td>530</td>
</tr>
<tr>
<td>1843</td>
<td>188</td>
<td>312</td>
<td>500</td>
</tr>
<tr>
<td>1844</td>
<td>163</td>
<td>320</td>
<td>483</td>
</tr>
<tr>
<td>1845</td>
<td>198</td>
<td>312</td>
<td>510</td>
</tr>
<tr>
<td>1846</td>
<td>231</td>
<td>303</td>
<td>534</td>
</tr>
<tr>
<td>1847</td>
<td>252</td>
<td>315</td>
<td>567</td>
</tr>
<tr>
<td>1848</td>
<td>281</td>
<td>284</td>
<td>565</td>
</tr>
<tr>
<td>1849</td>
<td>262</td>
<td>249</td>
<td>511</td>
</tr>
<tr>
<td>1850</td>
<td>243</td>
<td>200</td>
<td>443</td>
</tr>
<tr>
<td>1851</td>
<td>296</td>
<td>186</td>
<td>442</td>
</tr>
<tr>
<td>1852</td>
<td>249</td>
<td>164</td>
<td>413</td>
</tr>
<tr>
<td>1853</td>
<td>272</td>
<td>180</td>
<td>452</td>
</tr>
<tr>
<td>1854</td>
<td>240</td>
<td>182</td>
<td>422</td>
</tr>
<tr>
<td>1855</td>
<td>247</td>
<td>193</td>
<td>430</td>
</tr>
<tr>
<td>1856</td>
<td>250</td>
<td>210</td>
<td>460</td>
</tr>
<tr>
<td>1857</td>
<td>229</td>
<td>201</td>
<td>430</td>
</tr>
</tbody>
</table>

* Not known

Source: Annual Reports, UCL.

### Quinquennial Average Percentage of Medical Students out of Total Student Body (Approx)

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Total</th>
<th>Average Medicine</th>
<th>Average Non-Medical</th>
<th>% Medicine of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1828-1833</td>
<td>516</td>
<td>238</td>
<td>178</td>
<td>46</td>
</tr>
<tr>
<td>1833-1838*</td>
<td>512</td>
<td>401</td>
<td>111</td>
<td>78</td>
</tr>
<tr>
<td>1838-1843</td>
<td>543</td>
<td>386</td>
<td>157</td>
<td>71</td>
</tr>
<tr>
<td>1843-1848</td>
<td>518</td>
<td>312</td>
<td>206</td>
<td>60</td>
</tr>
<tr>
<td>1848-1853</td>
<td>470</td>
<td>217</td>
<td>253</td>
<td>46</td>
</tr>
<tr>
<td>1853-1858</td>
<td>439</td>
<td>193</td>
<td>246</td>
<td>44</td>
</tr>
</tbody>
</table>

Source: Annual Reports, also reproduced in S. Butler, Ph.D. thesis, p.34.
Table 6'C' - Histological Dimensions of Sharpey's Lectures at UCL

A. The Elementary Tissues According to Richard Dupuytren:

1. Cellular
2. Vascular
   a. arterial
   b. venous
   c. lymphatic
3. Nervous
   a. cerebral
   b. ganglionic
4. Osseus
5. Fibrous
   a. proper fibrous
   b. fibious coats
   c. dermoid*
6. Muscular
   a. voluntary
   b. involuntary
7. Erectile
8. Mucous
9. Serous (including synorial*)
10. Corneus or Epidermoid
    a. pilous
    b. epidermoid
11. Parenchymatous
    a. proper bitto*
    b. glandular

B. Tissue Classification Adopted by Sharpey.

1. Cellular#
2. Fibrous
3. Elastic
4. Muscle
5. Blood Vessels#
6. Absorbent Vessels and Glands#
7. Nervous Tissues#
8. Cartilaginous Tissue
9. Fibrocartilaginous
10. Bone
11. Serous and Synorial*
    Membranes
12. Mucous Membranes
13. Skin and Dermoid Tissues
14. Cuticular
15. Secreting Glands

* Manuscript unclear.
# Includes the general tissues of Xavier Bichat.

**Table 6'D' - Sharpey's Conception of the Subject-Matter of Biology**

<table>
<thead>
<tr>
<th>Biology</th>
<th>Human</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td></td>
<td>Comparative</td>
</tr>
<tr>
<td>Animal</td>
<td>Human</td>
<td>Descriptive</td>
</tr>
<tr>
<td>Physiology</td>
<td></td>
<td>Comparative</td>
</tr>
</tbody>
</table>

| Vegetable | |
| Anatomy | |
| Physiology | |

Source: W. Sharpey's Lectures on Anatomy and Physiology, delivered at UCL, 1858-1859, MS. ADD. 283, p. 1.

**Table 7'A' - Expansion of the Medical Curriculum 1815-1855**

<table>
<thead>
<tr>
<th>1815 LSA; MRCS</th>
<th>1855 LSA; MRCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy (Lectures &amp; Demonstrations) (MRCS)</td>
<td>Anatomy (Including Dissection)</td>
</tr>
<tr>
<td>Anatomy &amp; Physiology (LSA)</td>
<td>Physiology (Including General Physiology and Morbid Anatomy)</td>
</tr>
<tr>
<td>Chemistry (LSA)</td>
<td>Chemistry &amp; Practical Chemistry</td>
</tr>
<tr>
<td>Materia Medica (LSA)</td>
<td>Materia Medica; Botany; Forensic Medicine</td>
</tr>
<tr>
<td>Theory &amp; Practice of Medicine (LSA)</td>
<td>Theory &amp; Practice of Medicine; Theory &amp; Practice of Surgery; Midwifery</td>
</tr>
<tr>
<td>Hospital Practice</td>
<td>Hospital Practice</td>
</tr>
</tbody>
</table>

This table comprises the bare minimum requirements for general practice. It does not include optional or more specialised subjects available in some hospital medical schools.

Table 7'B' - Subjects on the Curriculum of London Hospital Medical Schools (by 1858)

**Group A**
Anatomy, Physiology, Medicine, Surgery, Medical Hospital Practice, Surgical Hospital Practice.

**Group B**
Materia Medica, Midwifery, Comparative Anatomy, Practical Chemistry, Medical Jurisprudence.

**Group C**
Clinical Medicine & Surgery, Pathology, Morbid Anatomy, Histology & Microscopical Studies.

**Group D**
Natural Philosophy, Logic, Ophthalmic & Dental Surgery, Operative Surgery, Contagious Diseases, Public Health, Practical Pharmacy, Military Surgery.

Key: Each group of subjects is arranged in decreasing order of importance in relation to the curriculum offered at metropolitan hospital schools. Group A thus represents the core curriculum which could be studied at all schools; Group D comprises minority subjects and specialisms catered for only at a small number of schools. More detail on the curricula at specific schools is set out below.

Group A subjects could be studied at every London school without exception. The teaching of Group B subjects was also extremely common. The last four disciplines specified were not available at The Royal Free Hospital. Fewer hospitals offered Group C subjects Clinical Medicine and Surgery than did not. Most made provision for Pathology and for Morbid Anatomy. Only six made provision for the 'progressive' microscopical science of Histology and also for Dental and Ophthalmic Surgery. Most of the Group D disciplines were available at very few hospitals. Natural Philosophy could be studied at five, but only the two university schools taught Logic. Only The Middlesex and St. George's offered Practical Pharmacy; only St. Bartholomew's and University College made provision for Operative Surgery. Only one school, Guy's, included demonstration of Contagious Diseases. Similarly, only St. Thomas' counted Public Health as a subject on its curriculum.

### Table 8'A' - The Distribution of Medical Discoveries in Specific Nation-States During the Nineteenth Century.

<table>
<thead>
<tr>
<th>Year</th>
<th>USA</th>
<th>England</th>
<th>France</th>
<th>Germany</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800-09</td>
<td>2</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>1810-19</td>
<td>3</td>
<td>14</td>
<td>19</td>
<td>6</td>
<td>47</td>
</tr>
<tr>
<td>1820-29</td>
<td>1</td>
<td>12</td>
<td>26</td>
<td>12</td>
<td>57</td>
</tr>
<tr>
<td>1830-39</td>
<td>4</td>
<td>20</td>
<td>18</td>
<td>25</td>
<td>71</td>
</tr>
<tr>
<td>1840-49</td>
<td>6</td>
<td>14</td>
<td>13</td>
<td>28</td>
<td>68</td>
</tr>
<tr>
<td>1850-59</td>
<td>7</td>
<td>12</td>
<td>11</td>
<td>32</td>
<td>69</td>
</tr>
<tr>
<td>1860-69</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>33</td>
<td>62</td>
</tr>
<tr>
<td>1870-79</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>1880-89</td>
<td>18</td>
<td>12</td>
<td>19</td>
<td>74</td>
<td>147</td>
</tr>
<tr>
<td>1890-99</td>
<td>26</td>
<td>13</td>
<td>18</td>
<td>44</td>
<td>136</td>
</tr>
</tbody>
</table>


Note: Two categories ('Other' and 'Unknown') have been omitted for presentational purposes. The 'Total' column in the Table includes the relevant data from these omitted categories.
Table 8'B' - An Index of the 'Productivity' of Different Nation-States Judged in Terms of Numbers Entering Scientific and Medical Careers

<table>
<thead>
<tr>
<th>Year</th>
<th>USA</th>
<th>England</th>
<th>France</th>
<th>Germany</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>1805</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>1810</td>
<td>3</td>
<td>11</td>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>1815</td>
<td>2</td>
<td>12</td>
<td>12</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>1820</td>
<td>3</td>
<td>11</td>
<td>23</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>1825</td>
<td>2</td>
<td>17</td>
<td>15</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>1830</td>
<td>8</td>
<td>12</td>
<td>25</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>1835</td>
<td>11</td>
<td>13</td>
<td>26</td>
<td>29</td>
<td>7</td>
</tr>
<tr>
<td>1840</td>
<td>5</td>
<td>24</td>
<td>22</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>1845</td>
<td>5</td>
<td>14</td>
<td>13</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>1850</td>
<td>10</td>
<td>18</td>
<td>21</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>1855</td>
<td>15</td>
<td>16</td>
<td>20</td>
<td>49</td>
<td>27</td>
</tr>
<tr>
<td>1860</td>
<td>16</td>
<td>23</td>
<td>13</td>
<td>61</td>
<td>23</td>
</tr>
<tr>
<td>1865</td>
<td>25</td>
<td>15</td>
<td>36</td>
<td>71</td>
<td>26</td>
</tr>
<tr>
<td>1870</td>
<td>25</td>
<td>15</td>
<td>31</td>
<td>83</td>
<td>41</td>
</tr>
<tr>
<td>1875</td>
<td>40</td>
<td>31</td>
<td>23</td>
<td>84</td>
<td>46</td>
</tr>
<tr>
<td>1880</td>
<td>48</td>
<td>17</td>
<td>40</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>1885</td>
<td>52</td>
<td>16</td>
<td>34</td>
<td>97</td>
<td>52</td>
</tr>
<tr>
<td>1890</td>
<td>43</td>
<td>11</td>
<td>23</td>
<td>74</td>
<td>41</td>
</tr>
<tr>
<td>1895</td>
<td>47</td>
<td>9</td>
<td>27</td>
<td>78</td>
<td>29</td>
</tr>
<tr>
<td>1900</td>
<td>32</td>
<td>9</td>
<td>17</td>
<td>53</td>
<td>30</td>
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<tr>
<td>1905</td>
<td>28</td>
<td>4</td>
<td>4</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>1910</td>
<td>23</td>
<td>6</td>
<td>7</td>
<td>23</td>
<td>18</td>
</tr>
</tbody>
</table>

Sources: Dorland's Medical Dictionary (20th.ed).

<table>
<thead>
<tr>
<th>Scientific Word</th>
<th>Clinical Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conception of Medicine</strong></td>
<td>A Clinical Art</td>
</tr>
<tr>
<td>An Experimental Science</td>
<td></td>
</tr>
<tr>
<td><strong>Philosophical Outlook</strong></td>
<td>Rationalist</td>
</tr>
<tr>
<td>Empiricist</td>
<td></td>
</tr>
<tr>
<td><strong>Legitimation</strong></td>
<td>Experimentation</td>
</tr>
<tr>
<td>Clinical Observation &amp; Autopsy</td>
<td></td>
</tr>
<tr>
<td><strong>Institutional Locus</strong></td>
<td>Laboratory</td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
</tr>
<tr>
<td><strong>View of Disease</strong></td>
<td>Physiological - Ontological -</td>
</tr>
<tr>
<td>Disruption of Normal Processes</td>
<td>A Real Specific Entity Existent in Nature</td>
</tr>
<tr>
<td><strong>Appropriate Treatment</strong></td>
<td>Necessarily</td>
</tr>
<tr>
<td>Increasingly Pharmacological Intervention to Restore Normal Organic Functioning</td>
<td>Varies with Patient's Particular Pathological Conditions</td>
</tr>
<tr>
<td><strong>Goal-Orientations</strong></td>
<td>Elaboration</td>
</tr>
<tr>
<td>Immediate Restoration Healing &amp; Cure of the Sick</td>
<td></td>
</tr>
<tr>
<td><strong>Attitude to Claims of Particular Sciences, e.g. Physics &amp; Chemistry</strong></td>
<td>Sympathetic - Defence of Physico-Chemical Reductionism</td>
</tr>
<tr>
<td>Hostile - Defence of the Irreducibility of Clinical Facts</td>
<td></td>
</tr>
<tr>
<td><strong>Attitude to Technological Innovation</strong></td>
<td>Sympathetic - Seen as Extension &amp; Application of Scientific Developments</td>
</tr>
<tr>
<td>Hostile - Obtruding Direct Face-to-Contact With Patients</td>
<td></td>
</tr>
<tr>
<td><strong>Self-Conception</strong></td>
<td><strong>Scientific Word</strong></td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Scientific Doctors</td>
</tr>
<tr>
<td></td>
<td>Utilising</td>
</tr>
<tr>
<td></td>
<td>Technical</td>
</tr>
<tr>
<td></td>
<td>Expertise</td>
</tr>
<tr>
<td><strong>View of Patients</strong></td>
<td><strong>Devaluation of</strong></td>
</tr>
<tr>
<td></td>
<td>Subjective</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
</tr>
<tr>
<td><strong>Conception of</strong></td>
<td><strong>Inveterate</strong></td>
</tr>
<tr>
<td><strong>Professional</strong></td>
<td><strong>Reactionaries</strong></td>
</tr>
<tr>
<td><strong>Adversaries</strong></td>
<td><strong>Resistant to</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Progressive</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Scientific</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Reform of</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Medicine</strong></td>
</tr>
</tbody>
</table>
NOTES AND REFERENCES

List of Abbreviations.

BMJ: British Medical Journal.
Coll.Corres.Med.Fac.: College Correspondence (Medical Faculty).
CUP: Cambridge University Press.
Econ.Hist.Rev.: Economic History Review.
Hist.Sci.: History of Science.
Hist.& Theory: History and Theory.
IJHS: International Journal of Health Services
Med. Hist.: Medical History.
NLB: New Left Books.
OUP: Oxford University Press.
Phil. Quart.: Philosophical Quarterly.
Pol. Theory: Political Theory.
Soc. Hist.: Social History.
Soc. Rev.: Sociological Review.
Soc. Sci. Info.: Social Sciences Information.

Introduction.


See the relevant section in the bibliography for fuller references on the professions.

(8) Ibid.


The Mertonian tradition was subsequently developed by other scholars, notably Barber, Hagstrom, Shils and Ben-David. For a valuable critique of the Mertonian position on the 'normative principles' of the scientific profession, see L. Crossley, "The Professionalisation of Science in Victorian
Revisionists might broadly accept my analysis of the three identified contexts: my difference is only with those who deny any causal connection between 'science' and 'professionalism'.

(19) C. Lawrence, op. cit. (6).


See the conclusion for a fuller evaluation of this study.


(24) L. King, "The Medical World of the Eighteenth
I was able to obtain this thesis only at the end of my second year of research. Since it covers a subject-matter and time-scale identical to my own, and is congruent with a broadly 'professionalist' interpretation of the historical data, I shall use this footnote to explain how I have attempted to circumvent the problems which might potentially arise from such a situation.

First, regarding references and scholarly footnotes, it is unnecessary to make constant reference to Butler's discussion of common themes, but I have acknowledged her study where I have gained information or insight if not encountered elsewhere in my own research. I have utilised my own hitherto unpublished data and research material for illustration or embellishment of arguments whenever possible. A degree of overlap is perforce unavoidable.

Second, the present thesis has a different conception and purpose from Butler's. She usefully describes the main events and individuals associated with the historical development of medical education. My concerns are more theoretical, and this thesis adopts a more thematic and structured approach grounded in sociological as well as historical literature.

Chapters seven, eight and the conclusion comprise a fuller elaboration of the 'word'/'ward' antithesis which therefore needs no more than this bald statement in the introduction.


(36) I wish to acknowledge the following texts as particularly instructive in the formulation, structuring and writing of the intellectual project embodied in this thesis:


M. Larson, op. cit. (10).

I. Waddington, op. cit. (14).

M. Jeanne Peterson, op. cit. (31).

S. Butler, op. cit. (27).

*** See important note on page 628a below.

Chapter One.


(3) Merleau Ponty, cited in A. Giddens, "Central Problems in Social Theory", Macmillan, London, 1979, frontispiece. I have here replaced Merleau Ponty's original term 'Philosophy' with 'History'.

One further matter demands clarification from the outset. This thesis is primarily a study of English medical education: it does not attempt to account for Scottish (or Irish) medical education, although it occasionally incorporates material on Edinburgh (and Dublin) for embellishment of wider, more general arguments. One of the principal themes of the present thesis is opposition between the clinical 'ward' and the scientific 'word' - a phenomenon which is explained as a by-product of the historic transition from 'hospital' to 'laboratory' medicine. Comparative study of French and German medical education is included in chapters seven and eight respectively because these countries witnessed the origin of each form of medical production. Scottish medical education (particularly the Edinburgh school) in the late eighteenth century represented the most developed form of the earlier 'bedside' mode of medical production. This thesis does not therefore include a comparative analysis of Scottish medical education. I have, however, devoted section 3 of the bibliography to the subject.


(8) G. Elton, op. cit. (6).


(10) The debate between E. P. Thompson and Louis Althusser has been particularly important here.


   For the purposes of the present discussion, criticism of the 'revisionist' thesis is centred on this famous article. Fuller analysis would demand assessing other treatises - including those of Dunn and Pocock - sympathetic to Skinner's historiographical position. Skinner himself has subsequently refined his views in:


It is possible to construe these more recent expositions as moving gradually closer to the position adopted in the present thesis; but since Skinner has never explicitly repudiated the views set forth in 1969, I have focussed discussion around his most well-known paper.

The term 'revisionist' here refers to a particular methodological position in debates over the historiography of ideas rather than to the role of scientific knowledge in the professionalisation of medicine.

(15) Ibid.

(16) J. Femia, "An Historicist Critique of 'Revisionist' Methods for Studying the History of Ideas", Hist. & Theory, 20, 1981, pp.113-34, p.130. Femia's critique is directed towards resuscitating and revitalising Antonio Gramsci's more thorough-going historicism, as reflected in his contention that "<we must use the criterion that a philosophical position should be criticised and evaluated not for what it pretends to be, but for what it really is ..."(p.113).

(17) On Wittgensteinian grounds, such 'internal states' as 'motives', 'intentions' and 'beliefs' are not fully recoverable by the historian. For a development of this argument, see D. Bloor, "Wittgenstein: A Social Theory of Knowledge", Macmillan, London, 1983, esp. pp.9-14, 145-9.


(20) P. Abrams, op. cit. (11), p. 'x'.

(21) Ibid., pp.334-5.

(22) That this point has become commonplace owes much to E.H. Carr, op. cit. (5).


1961, pp.50-60, p.58.


(44) M.Mulkay, op.cit.(38), Ch.2.


(47) Foucault's later writings were considerably less prolix than his earlier.

(48) Attempts to sketch the rudiments of such an evaluation include:


P. Major-Poetzl, "Michel Foucault's Archaeology of Western Culture", Harvester, 1983.


(49) My loose usage of the adjective 'Foucaultian' is not intended to suggest the existence of any unproblematic notion of 'Foucault-ism'. As Sheridan noted in his sensitive study, "there is no 'Foucault system'." op. cit. (48), p. 20.


(52) A. Sheridan, op. cit. (48), p. 38.

(53) M. Foucault, op. cit. (46), Ch. 1.


(55) A. Sheridan, op. cit. (48), Ch. 1, esp. pp. 38ff.

(56) M. Foucault, op. cit. (46), Ch. 1.

(75) M. Foucault, "The Politics of Health in the Eighteenth Century", in C. Gordon (Ed), op. cit. (48), Ch. 9.

(76) On medical police, see also G. Rosen, "From Medical Police to Social Medicine", New York, 1974.

(77) M. Foucault, op. cit. (73), Pt. 3, 'Discipline'.


(79) J. C. Guedon, op. cit. (48).


(80) D. Armstrong, op. cit. (78), Ch. 7.


J. C. Guedon, op. cit. (48).


It should be recognised at this juncture that in the third and final stage of his grandiose intellectual project (from the 'Introduction to the History of Sexuality' onwards) Foucault retreated from the problem of articulating a meta-analysis of power, self-consciously distancing himself from Marxist modes of explanation, and reformulated his principal interest around the problem of accounting for the cultural constitution of human subjectivity. As a self-confessed 'Nietzschean subverter' of conventional assumptions and an acknowledged ontological and ethical relativist (in

(75) M. Foucault, "The Politics of Health in the Eighteenth Century", in C. Gordon (Ed), op. cit. (48), Ch. 9.

(76) On medical police, see also G. Rosen, "From Medical Police to Social Medicine", New York, 1974.

(77) M. Foucault, op. cit. (73), Pt. 3, 'Discipline'.


(79) J. C. Guedon, op. cit. (48).


(80) D. Armstrong, op. cit. (78), Ch. 7.


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It should be recognised at this juncture that in the third and final stage of his grandiose intellectual project (from the 'Introduction to the History of Sexuality' onwards) Foucault retreated from the problem of articulating a meta-analysis of power, self-consciously distancing himself from Marxist modes of explanation, and reformulated his principal interest around the problem of accounting for the cultural constitution of human subjectivity. As a self-confessed 'Nietzschean subverter' of conventional assumptions and an acknowledged ontological and ethical relativist (in
the sense of denying the possibility of thinking or judging from a standpoint outside the variety he describes) Foucault gave, in his latest work, an ever more tremulous and attenuated hint that recognition of the role of knowledge during a particular period in branding and stigmatising deviants might have any capacity to emancipate the oppressed. It was at this stage that Foucault was adopted by some elements of the 'new right'.


The present writer regards what appears with the advantage of hindsight to be Foucault's 'mid-term' concern with the 'pouvoir-savoir' symbiosis as the most methodologically and substantively productive phase of his 'oeuvre'. I do not propose to elucidate the implications of the final phase of Foucault's work for an understanding of a 'Foucaultian' perspective on medical education and medical knowledge. See D. Hoy, op. cit. (50), esp. p. 7.

(85) For a comparable thesis that the essence of medicine resides in the clinic and therapeutics, and for an earlier elaboration of the theme of 'normalisation', see Georges Canguilhem, "On the Normal and the Pathological", Reidel, London, 1943. Canguilhem's work (together with that of Georges Dumézil and Jean Hyppolite) was one of the most decisive formative influences on Foucault.

See also A. Sheridan, op. cit. (48), pp. 3, 6, 37, 91, 115, 201, 208-9.


(87) A. Sheridan, op. cit. (48), p. 40.

(88) D. Armstrong, op. cit. (78), Chs. 1, 2.

(89) H. Dreyfus and P. Rabinow, op. cit. (48).

(90a) N. Jewson, "Medical Knowledge and the Patronage System in Eighteenth Century England", Sociology, 8, 1974, pp369-85. (a)

Idem, "Eighteenth Century Medical Theories: A Sociological Analysis", Working Papers in Historical Sociology, University of Leicester, 1974. (b)


(90c) Idem, op. cit. (90a) 1974(b), p. 2.


(90e) A. Sheridan, op. cit. (48), Ch. 3.


(90g) Ibid.

(90h) N. Jewson, op. cit. (90a) 1976, p. 226.

(90i) Ibid., pp. 231-2.

(90j) N. Jewson, op. cit. (90a) 1974(a), p. 373.


(91) T. S. Kuhn, "The Structure of Scientific


In later formulations Kuhn revised his initial definition of a scientific 'paradigm' putting forward the term 'disciplinary matrix' to convey the sense of paradigm used above. I have followed most commentators in continuing to employ the term in its broadest, most general sense.

(93) D. Hoy, op. cit. (74), p. 18.

(94) J. C. Guedon, op. cit. (48).

(95) M. Foucault, op. cit. (75), pp. 166-82, p. 181.


Chapter Two.


(8) G.Clark, op.cit.(5), Vol.1.


(10) 'Typification' is a term used by Max Weber to connote the conversion of monarchical benefices and other privileged offerings into rightful legal possessions; it is deployed in Berlant's neo-Weberian study. The English Parliament of the period was itself a newly 'typified' institution (Ibid., pp.138-9).

(11) L.King, "The Medical World of the Eighteenth Century", Chicago, 1958, Ch.1.

Statements concerning the RCP's 'monopoly' require qualification, as the system of episcopal licensing survived into the eighteenth century despite efforts to eliminate it by law.


(16) L.King, op.cit.(11), p.18.


(18) G.Clark, op.cit.(5).

(19) R.Roberts, op.cit.(6).


(22) G.Clark, op.cit.(5), Vol.2., p.517.

(23) J.Yonge, "Sidrophel Vapulans or the Quack Astrologer Tossed in a Blanket", London, 1699.


(27) Theodor Puschmann, writing in 1891, was fully aware of the abuses to which physicians' examinations were subject in the eighteenth century:


(32) Reiser suggests that the attempt to introduce these innovations was indeed confronted with concerted resistance.


(33) G.Holmes, op.cit.(17), pp.182-3, 234-5.


(34) Figures calculated from Munk's Roll.


(36) G. Holmes, op. cit. (17).

(37) Between 1751 and 1775, the number of Scottish graduates among the licentiates overtook the English.


(44) N. Jewson, op. cit. (4), passim.


(48) B. Smith, op. cit. (5), p. 56.

(49) V. Bullough, op. cit. (7).


(51) R. Roberts, op. cit. (6), pp. 70-1.

(53) J. Berlant, op. cit. (9), p. 133.

(54) P. Elliott, "The Sociology of the Professions", London, 1972, Ch. 2.


(56) B. Hamilton, op. cit. (25).

(57) B. Smith, op. cit. (5), p. 76.


(60) R. Franklin, op. cit. (22), p. 60.

(61) M. Roth, "Andreas Vesalius Bruxellensis", Reimer, Berlin, 1892.

(62) This was certainly the case for some time at the Universities of Oxford and Cambridge. See A. Robb-Smith, "Medical Education at Oxford and Cambridge Prior to 1850" in F. Poynter (Ed), op. cit. (6), pp. 19-52.


(68) Z. Cope, op. cit. (55), p. 5.

G. Holmes, op. cit. (18), pp. 198-200.
(69) W. Cheselden, "Osteographica, or the Anatomy of the Bones", London, 1733.

(70) Z. Cope, op. cit. (55), Ch. 2.


(72) B. Smith, op. cit. (5), pp. 101-2.


(87) Z. Cope, op. cit. (55), pp. 20-1.

(88) S. Squire Sprigge, "The Life and Times of Thomas..."


(91) V. Bullough, op. cit. (7), p. 91.

(92) E. Brockbank, op. cit. (14), pp. 5-6.

(93) J. Pickstone, op. cit. (59), p. 6

(94) J. Berlant, op. cit. (9), pp. 141-5.

(95) G. Holmes, op. cit. (17), p. 185.


(99) L. King, op. cit. (11), p. 22.

(100) R. Franklin, op. cit. (21), pp. 58-64.


(102) G. Holmes, op. cit. (17), pp. 190-1, 209-12.

(103) C. Cameron et. al. (Eds), op. cit. (96), pp. 76-8.

(104) J. Berlant, op. cit. (9), p. 133.

(105) G. Holmes, op. cit. (17), pp. 188-90.


(109) C. Cameron et al., op. cit. (96), Ch. 13.


(117) Ibid.


G. Hedley, "Reports of the Literary and Philosophical Society of Newcastle", Newcastle, 1823.


(121) B. Smith, op. cit. (5), pp. 128-32.


(123) Holmes' is probably the most recent formulation along these lines: op. cit. (17), esp. pp. 184-92, 210-12.

(124) J. Bell, "Historical Sketch of the Progress of Pharmacy", London, 1843.
J. Good, "The History of Medicine so far as it Relates to Pharmacy", London, 1796.

(125) W. Rivington, op. cit. (52), pp. 27-8.

(126) S. Holloway, op. cit. (107), pp. 110-1.


(128) J. Good, op. cit. (124).


(132) G. Clark, op. cit. (5), Ch. 31.


(135) W. Rivington, op. cit. (52), pp. 29-30.


(139) B. Smith, op. cit. (5), pp. 44-7.

(140) N. Parry & J. Parry, op. cit. (130), Ch. 6.


Chapter Three.


(2) Sir R. Inglis, "The Touchstone of Medical Reform" (In the Form of Three Letters Addressed to Joseph Henry Green, FRS), Letter 3, p. 38, (emphasis in original).

Idem, "Industry and Empire", London, 1968, Ch. 3.


(5) P. Laslett, "The World We Have Lost", London, 1971. Other historians have replied that the idea of a one-class society is a contradiction in terms. See for example:


It is important to recognize that the relation between the objectives of exceptional individuals and the wider goals of the majority of general practitioners cannot be assumed to be self-evident without further research.


Subsequent elaboration of this contention will draw extensively on this trenchant and relatively neglected article.

(10) M. Larson, op. cit. (8).


(24) Records of the Society of Apothecaries, Guildhall
Library, London, MS 8211/1.


(26) J. Bird, 'Evidence from Select Committee on Medical Registration and Medical Law Amendment' 1847-8, 1st & 2nd Reports, Q. 1061-4.

W. Reader, op. cit. (22), p. 42.


S. Squire Sprigge, op. cit. (29), Chs. 24, 26.


(32) Historians have tended to underestimate the educational aspects of the Lancet, focussing instead on the journal's radical bourgeois propaganda against the nepotism and corruption of the London medical and surgical establishment. Volume two, in particular, of each edition revealed the educational function of the journal; it included verbatim drafts of the most noteworthy lectures and shortened abstracts of others.

(33) Lancet, 1823/4, 1, pref.

(34) Ibid., pref.

(35) S. Sprigge, op. cit. (29), Ch. 9.

(37) Lancet, 1827-8, 1, p.228.

(38) Ibid., p.4.


(40) B. Brodie, 'Account Books' (3 Vols.), 1824-60, MS RCS.


(44) Provincial fees were less but by no means inconsiderable.


(47) I. Loudon, op. cit. (27), p.16.

(48) Loudon has recently drawn attention to Henry Peart, who was perhaps just such a typical practitioner. See Idem, op. cit. (23), pp.249-68.


(50) I. Loudon, op. cit. (27), p.15.


(53) Lancet, 1827-8, 1, p.49.
(54) Ibid., p.185.

(55) On the wider importance of the creed of examinations in the educational culture of the Victorian middle class, see W. Reader, op. cit. (22), Ch.3.

(56) Lancet, 1827-8, 1, p.185, (emphasis in original).


(58) Lancet, 1838-9, 1, p.2.


(66) At St. Bartholemew's Hospital, for example, Frederick Tyrell, Aston Key and Bransby Cooper were all apprenticed to their uncle, Sir Astley Cooper. At Guy's, the radical political sympathies of Thomas Hodgkin helped lose him his surgery position. See M. Jeanne Peterson, op. cit. (31), pp.41, 144-5.

H. Cameron, op. cit. (63), pp.132-3, 137.

(67) Cited in Peterson, loc. cit., p.144.

(68) Lancet, 1845-6, 2, p.353, (emphasis added).

(69) Lancet, 1842-3, 2, pp.719-22.

(70) Lancet, 1854, 2, p.243.
(71) W. Walshe, "Introductory Address", (Delivered at the Opening of the Winter Session at UCL Oct. 1st, 1845), published in Lancet, 1845, 2, pp. 418-23, p. 418. As we shall see in chapter seven, Walshe long remained sceptical as to the value of particular experimental sciences, such as physics and chemistry, for advancing medicine's customary art, yet his hostility to scientific rationalism was quite compatible with upholding clinical pathology as 'science' for the social cachet it would purchase.

(72) Lancet, 1847, 1, p. 599.


(72d) Ibid., p. 6.

(72e) Ibid., p. 12.

(72f) M. Jeanne Peterson, op. cit. (72a).

(72g) See Ch. 2, pp 88-90.

(72h) Max Weber argued that distaste for, and prejudice against, manual work was common amongst a variety of privileged status groups. See H. Girth & C. Wright Mills, "From Max Weber", London, 1961, p. 191.

(72i) P. Elliott, "The Sociology of the Professions", London, 1972, Ch. 2.


(72k) H. Acland, "Relations of Physiology and Medicine", Parker, Oxford, 1865, p. 27.

(72l) Ibid., p. 29.

(72m) Ibid., p. 24.


(72o) Ibid., p. 29.


(72t) Ibid., p. 9.


(72x) Ibid., p. 15.

The dispute between Abernethy and William Lawrence - in which the latter's hostility to vitalist biology was seen as subversive of the established religious and political order - is well known to medical historians and is not discussed here. See O. Temkin, "Basic Science, Medicine and the Romantic Era" in Idem, "The Double Face of Janus and Other Essays in the History of Medicine", Baltimore, 1977, pp. 345-72.


(72a) Lancet, 1829-30, 2, p.653.

(72am) Lancet, 1823-4, 1, p.8.

(72an) Ibid.

(72ao) Lancet, 1826-7, 2, p.3.

(72ap) Ibid., p.4.

(72aq) Lancet, 1823-4, 1, p.1.

(72ar) P. Elliott, op.cit.(72i).

(72as) Lancet, 1828-9, 1, p.530.

(72at) I. Loudon, op.cit.(72b).

(72au) Lancet, 1828-9, 1, p.536.

(72av) Lancet, 1853-4, 2, p.299.

(72aw) Ibid.

(72ax) Medical Times and Gazette, 1858-9, p.578.

(72ay) D. Cardwell, "The Organisation of Science in England", Heinemann, London, 1972, Ch.3.


(72ba) Lancet, 1826-7, 2, p.36.

(72bb) Lancet, 1860-1, 2, p.326.

(72bc) I. Loudon, op.cit.(72b), pp.282-96.


(72bd) Lancet, 1830-1, 2, p.181-2.

(72be) Lancet, 1860-1, 1, p.400.

(72bf) Ibid.

(72ag) Ibid., p.400-1.
(72bh) Lancet, 1826-7, 2, pp.87-96.


(72bo) Lancet, 1846, 1, p.12.

(72bp) Lancet, 1832-3, 1, p.212.

(72bq) Ibid., p.214.

(72br) R.Cooter, op.cit.(72bl), Ch.2.

(72bs) Ibid., p.47.


(72by) C. Russell, op. cit. (72az), Chs. 6, 11.


(72bz) M. Berman, op. cit. (72bw), p. 104.

(72ca) For further details on these individuals and their impact on the Royal Institution, see Ibid., pp. 104-20.

(72cb) For a sceptical account of the importance of science to the professionalisation of general practice in the Victorian period, see M. Jeanne Peterson, "The Medical Profession in Mid-Victorian London", Berkeley, 1978, passim.


(72ce) I. Loudon, op. cit. (72b), pp. 288-96.

(72cf) W. Lawrence, op. cit. (82), p. 203.

(72cg) Ibid.

(72ch) Ibid., p. 205.

(72ci) Lancet, 1846-7, 1, p. 249.

(72cj) Gentleman's Magazine, 100, 1830, p. 7.

(72ck) P. Elliott, op. cit. (72i).

(73) On middle-class radicalism, see H. Perkin, op. cit. (4), Ch. 8.

(74) The 'Lancet' published these articles on the subject of 'the real and imaginary grievances of the medical profession'.

(75) Lancet, 1841-2, 2, p. 510.

(76) Ibid., p. 606.

(77) Ibid.


(80) Ibid., p. 152.

(81) Ibid., pp. 166-7.


(84) This is to re-emphasise the point that 'therapeutic efficacy' in the sense of demonstrably successful scientific 'cures' awaited the closing decades of the nineteenth century, and the corollary that rhetorical appeals to scientific objectivity had no 'substantive' basis so far as the general public's experience of illness and disease was concerned.

(85) Lancet, 1841-2, 2, p. 742.

(86) N. Parry & J. Parry, op. cit. (8), 1977, p. 112.


(89) Many among the more sophisticated classical economists - John Stuart Mill, for example - did not, of course, subscribe to any crude notion of economic liberalism and were not unqualified adherents to the creed of 'laissez-faire'. Many
historical actors of the period were, however, familiar with the arguments of English liberals and acted in a way which bespoke how integral to the social context such ideas became in our period. See A. Coats, "The Classical Economists and Economic Policy", London, 1971.


(91) Lancet, 1823 (1st issue), pref.

S. Sprigge, op. cit. (29), Ch. 8.

(92) Discussions of 'quacks' have been even more prone than usual to medical historians' whiggish and positivist predilections. For a recent example of the customary idiom - a condescending and somewhat bemused anecdotalism - in which irregular healers have been described, see


(93) W. McMenemy, op. cit. (52), pp. 135-53.

(94) Wakley stood for Finsbury at the first election after the Reform Act of 1832, but twice failed before entering Parliament.

S. Sprigge, op. cit. (29), Chs. 26, 27.

(95) I. Loudon, op. cit. (27), pp. 15-6.

(96) SCME, 1834, Pt. 3, Q. 1003-5.


(99) Lancet, 1827-8, 1, p. 267.

(100) W. McMenemy, op. cit. (52), pp. 135-53.

(101) J. Simon, "Sanitary Institutions" (pp. 184-5). Cited in S. Finer, "The Life and Times of Edwin
(102) T. Parssinen, "Professional Deviants and the History of Medicine: Medical Mesmerists" in R. Wallis (Ed), op. cit. (83), pp. 103-20, p. 112.

(103) For further examination of the consequences of the New Poor Law for medical practitioners, see S. Finer, op. cit. (101), Ch. 4.


See also "Medical Officers Under the Poor Law", Lancet, 1842, pp. 490-2.


(106) Ibid., p. 795.


(109) On the relation between scientific and religious interpretations of the cholera epidemic, see R. Morris, "Cholera 1832", Croom Helm, London, 1976, Ch. 7.

(110) On the plurality of scientific understandings of the nature of cholera, see M. Pelling, "Cholera, Fever and English Medicine, 1825-1865", OUP, 1978.

(111) Cited in P. Vaughan, op. cit. (30), p. 36.

(112) R. Morris, op. cit. (109), Ch. 8.

For evidence that some doctors themselves admitted the therapeutic barrenness of science as late as the 1870s, see Ch. 8, p. 507.

(113) On the social problems confronting the medical profession during the cholera epidemics, see M. Durey, "Medical Elites, the General Practitioner and Patient Power in Britain During the Cholera Epidemic", in I. Inkster & J. Morrell (Eds), "Metropolis and Province", Hutchinson, London,

(115) Ibid., p.27.

(116) Ibid., p.28.

(117) For a stimulating comparison of medicine and engineering as 'professional' occupations, see M. Larson, op. cit. (8), pp.25-31.

Larson's overall argument is that doctors were more favoured than engineers in accomplishing the long-term project of professionalisation, i.e. quite the opposite of my point here.

(118) P. Vaughan, op. cit. (30), p.35.

(119) N. Parry & J. Parry, op. cit. (8), pp.107-12.


Johnson's main argument is that the social distribution of power affects the particular form of practitioner/client relationship that obtains in the relevant historical period. Yet power variables also impinge directly on the relationships assumed between different segments of a profession - or, more accurately, they influence, if not determine, which groups will succeed in gaining recognition as 'professionals'.


(122) On the complex relation between 'science' and 'ideology', see:


(123) S. Shapin, "Social Uses of Science" in G. Rousseau &


(126) S. Sprigge, op. cit. (30), p. 444.

The ease with which the college's lay governors dismissed Elliotson is an index of how relatively little 'professional' values counted at this time. See M. Peterson, op. cit. (31), p. 140.

(127) Lancet, 1846, 1, p. 16.

(128) T. Parssinen, op. cit. (102), pp. 103-20.


(130) On the tardiness with which the surgical profession accepted anaesthesia, see A. Youngson, "The Scientific Revolution in Victorian Medicine", Croom Helm, London, 1979, esp. Ch. 2.


(134) Mesmerism was, of course, exactly the same in this respect as homeopathy. See T. Parssinen, op. cit. (102), pp. 108-9.

(135) S. Hahnemann, "Essay on a New Principle for Ascertaining the Curative Powers of Drugs", 
London, 1796.


(136) Much of the literature on homeopathy relates to the American experience. The sect was undeniably stronger there, but the English experience has been underestimated and demands further scholarly interest and research.


(137) L. King, "The Medical World of the Eighteenth Century", Chicago, 1958, p. 188.

King refines his analysis two pages later where we are informed that the "essential tragedy" of homeopathy was that Hahnemann "was a classical scholar but in no sense a scientist(sic)", p. 190.


(139) Ibid., p. 351.

(140) Ibid., p. 351.

(141) Ibid., p. 354.


(143) For a more comprehensive examination of homeopathy broadly consonant with the historiographical standpoint of this thesis, see:


Idem, "Homeopathy and the 1855 Government Report on the 1853-4 Cholera Epidemic: A Study in the
Attempt to Suppress a Medical 'Heresy'",(forthcoming).


(144) Mesmerism and homeopathy do not, of course, exhaust the categories of alternative or unorthodox medical practices. Hydropathy, hypnotism, phrenology and spiritual healing, for example, were available to members of the Victorian public able to afford them. For reasons of space, I have confined my attention to the aforementioned.

M. Peterson, op. cit. (31), pp. 130-4.


(147) For some examples, see P. Vaughan, op. cit. (30), Ch. 5.

(148) M. Peterson, op. cit. (31), p. 36.

(149) R. Inglis, op. cit. (2).

(150) Ibid., p. 2.

(151) For some stimulating reflections on the social shaping of needs, see P. Wright, op. cit. (124), pp. 94-7.

(152) R. Inglis, op. cit. (2), pp. 2-3.

(153) Ibid., p. 6.

(154) Ibid.

(155) Ibid., p. 9.

(156) Ibid., p. 11. (emphasis in original).

(157) For a theoretical analysis of the process of professional standardisation of knowledge and market control, see M. Larson, op. cit. (8), Ch. 4.

(158) R. Inglis, op. cit. (2), p. 15.

(159) Ibid., p. 15.

(160) Some of these cited excerpts may appear to suggest
Inglis was a tough and uncompromising radical. That Newman judges him to have been "a sound, steady man commanding great public esteem" implies otherwise.


(161) N. Parry & J. Parry, op. cit. (8), Ch. 6.


Inglis cited the success of KCL's medical department and the steady increase in public estimation in support of his conviction that "in universities and colleges, a medical education would best be grounded on those universal elements of science, which were the essential constituents of every liberal profession." (Letter 2), p. 31.

(164) M. Larson, op. cit. (8), p. 34.

Chapter Four.


Voluminous literature exists on the social experience and standard of living of the labouring population during the first industrial revolution, which cannot be cited here; but see:


(6) For further examination of particular areas, see A. Briggs, "Victorian Cities", London, 1963.


Griffith's thesis that population growth was largely attributable to a decrease in mortality has been discredited; but urban death rates were far higher than the national average in 1851. See P. Mathias, op. cit. (3), p. 189.

J. Harrison, op. cit. (5), pp. 80-86.


(10) For comparative data on mortality between the classes, Chadwick's Report remains a valuable source. Chadwick found that during 1839 out of a population of 62,018 living in Bethnal Green, there were 101 deaths among 'Gentlemen and persons engaged in professions and their families'; 824 among 'Tradesmen, farmers and their families'; and 3,395 among 'Operatives, labourers and their families'. The average age of the deceased in each group was 45, 26, and 16 years respectively.


(13) Herein lay the origins of 'medicalisation' much discussed among present day sociologists of medicine.


(15) L. Crossley, "The Professionalisation of Science in


(17) Lancet, 1827/8, 1, p. 593.

(18) For conflicting answers to this question, see:


(26) R. Kargon, op. cit. (11), pp. 11-30.

The underlying motivations for provincial science have provoked an engaged debate. Should utilitarian rhetoric be taken seriously, or was science as a mode of cultural expression for marginal men more important? Alternatively, was an interest in social control the decisive factor? Some commentators have downgraded the significance of the 'utilitarian demand-pull' type of explanation with respect to
the provision of science for the lower orders. Shapin and Barnes contend that the proliferation of Mechanics' Institutes in Victorian cities principally served an interest in social control. However, an exclusive focus on social control greatly underestimates the importance of utilitarian considerations, and over-simplifies and distorts our understanding of the historical origin of the Mechanics' Institutes. See S. Shapin & B. Barnes, "Science, Nature and Control: Interpreting Mechanics Institutes", Soc. Studs. Sci., 7, 1977, pp. 31-74.


(27) Ibid., pp. 107-12, 178-9.

A. Briggs, op. cit. (6).

(28) For biographical information on Liebig, see A. Hofmann, "The Life and Work of Liebig in Experimental and Philosophic Chemistry", 1875.


(29) For one attempt to explain the successful rise of Liebig's research school at Giessen, see J. Morrell, "The Chemist Breeders: The Research Schools of Liebig and Thomas Thompson", Ambix, 19, 1972, pp. 1-46.


(33) Lancet, 1842/3, 1, p. 130.


(35) R. Kargon, op. cit. (11), Chs. 2, 3.

(36) L. Crossley, op. cit. (15).

(37) I must re-emphasise the point that Butler's Ph. D. thesis includes a detailed examination of the origins and growth of provincial medical education,
which I do not propose to reproduce here.


(43) These were among the principal recommendations of the above report.


S. Finer, op. cit. (39), Chs. 2, 5.


(50) Ibid., p. 4.


M. Jeanne Peterson, "The Medical Profession in


(54) G.Poggi, op.cit.(12), pp.48, 51.

(55) Governmental perception that a healthy populace facilitates economic management, social control and forestalls undesired consequences (such as revolutions or the growth of militant socialist organisations) has often triggered much social welfare legislation. See I.Gough, "The Political Economy of the Welfare State", London, 1979, Ch.4.

(56) G.Rosen, op.cit.(52), pp.120-41.

(57) Cited in Ibid., p.152.

(58) J.Robertson, "Medical Police, or, the Causes of Disease with the Means of Prevention and Rules for Diet Regime etc. Adapted Particularly to the Cities of London and Edinburgh, and Generally to all Large Towns", Edinburgh, 1809.


(62) R.MacLeod, op.cit.(60), pp.202-5.


(64) Ibid., p.239.

(65) S.Finer, op.cit.(39), pp.483-5.

(66) R.MacLeod, op.cit.(60), pp.202-3.


(70) On the contrast between English and German social medicine, see G. Rosen, op. cit. (52), pp. 60-119.

(71) M. Peterson, op. cit. (51), pp. 116-24.

(72) Lancet, 1827/8, 1, p. 402.

(73) Ibid., p. 403.

(74) For a now quite properly discredited attempt to delineate certain core 'attributes' characteristic of professional occupations, see E. Greenwood, "Attributes of a Profession", Social Work, 2, 1957, pp. 44-55.


(77) P. Vaughan, op. cit. (49), pp. 13-17.


(83) Lancet, 1832/3, 2, p.460.

(84) N. Parry & J. Parry, op.cit.(82), Ch.6.


(89) Lancet, 1827/8, 1, p.228.

(90) On the Burke and Hare scandal, see:


  O. Dudley Edwards, "Burke and Hare", Polygon, Edinburgh, 1980.

(91) G. Williams, op.cit.(87), Ch.4.


(93) S. Sprigge, op.cit.(88), pp.434-6.


(95) M. Durey, op.cit.(86).


(96) Parry and Parry's reference to the establishment of a SCME in the Commons in 1832 is incorrect. Hamilton's belief that an enquiry into medical education reported to the Commons in 1812 also has no basis in fact.

  N. Parry & J. Parry, op.cit.(82), p.117.
(97) Members of the SCME, apart from the chairman, Henry Warburton, included Lord Howick (the son of Lord Grey, who instigated the Reform Act of 1832), Henry Halford (the son of Henry Halford, President of the RCP), Daniel O'Connell, Thomas Spring-Rice, Joseph Hume, Lord Oxmantown and Sir Robert Peel. See W. Reader, op. cit. (51), pp. 16-7.

(98) Parts of the fourth volume of the Report were burned in a fire in the House of Commons during October, 1834. See P. Vaughan, op. cit. (49), p. 39.


S. Sprigge, op. cit. (88), p. 278.

(100) SCME, 1834, Pt. 1, p. 25, Q. 348 (Halford).

(101) Ibid., p. 9.

(102) Ibid., p. 40, Q. 568 (Macmichael).

(103) Ibid., Pt. 2, Q. 4801 (Guthrie).

(104) P. Vaughan, op. cit. (49), pp. 38-41.

(105) Prominent members of the SCMER of 1847 included T. Macaulay, Sir James Graham, Sir Robert Inglis and Thomas Wakley.


(108) SCMER, 1847, Q. 1146.

(109) Ibid., Q. 1650.

(110) Ibid., Q. 138.

(111) Ibid., Q. 305.

(112) C. Newman, op. cit. (94), pp. 73-81, esp. p. 77.

(113) J. Brotherston, op. cit. (75), p. 91.

(114) A. Carr-Saunders & P. Wilson, op. cit. (107), p. 79.


(118) Ibid., pp. 234-6.

(119) N. Parry & J. Parry, op. cit. (82), Ch. 6.

(120) S. Holloway, op. cit. (85), p. 221.

(121) M. Peterson, op. cit. (51), pp. 22-3, 28.


(123) Ibid., p. 7.

(124) Ibid., p. 8.


(129) W. Reader, op. cit. (51), p. 53.

(130) Cited in Ibid., p. 41.

(131) M. Peterson, op. cit. (51) p. 22.


(133) F. Poynter, "The Influence of Government Legislation on Medical Practice in Britain" in

(134) Detailed accounts of preceding Bills are to be found in:

N. Parry & J. Parry, op. cit. (82), pp.118 ff.
S. Sprigge, op. cit. (88), Ch.36.
M. Peterson, op. cit. (69), pp.30-34.

On the divisions which scuppered each succeeding Bill see:

R. Franklin, op. cit. (76), pp.213-22.


On Wakley's radical Bill see S. Sprigge, op. cit. (88), Ch.36.

On the role of Hastings and the PMSA (the forerunner of the BMA) in advancing the cause of medical reform and making the legislation possible, see P. Vaughan, op. cit. (79), Ch.3.

The verdict of the Association's first official historian - that the 1858 Act was "almost entirely" the work of Hastings and the BMA - is hyperbolic. See E. Little, op. cit. (81), p.31.

(135) N. Parry & J. Parry, op. cit. (82), Ch.6, esp. pp.118 ff.


(139) N. Parry & J. Parry, op. cit. (82), pp.124-6.
M. Peterson, op. cit. (69), pp.34-35.

(140) The Act's provision for Branch Councils in certain
areas gave Scotland and Ireland a degree of autonomy.


(142) Butler has drawn attention to an important proviso - that the GMC could recommend certain qualifications as necessary for inclusion on the register - which gave the Council some capacity for changing the system of medical instruction. See, however, pp. 267-71 below for a discussion of this issue.


(143) The Act formally permitted non-medical personnel to be appointed on the GMC, but not until 1926 was any Council member not trained as a doctor.

(144) P. Vaughan, op. cit. (79), p. 46.

(145) W. Reader, op. cit. (51), p. 68.

(146) In present-day Britain it remains legally proper for anyone to earn a living practising medicine so long as the person does not claim to be a registered doctor.

(147) A. Harvey, "Four Letters on Administrative Reform" (to Sir James Andrew), Churchill, London, 1858, p. 3, (emphasis in original).


(149) For a paean of praise for the principles of hierarchy, which purportedly saved this country from "the professional defects of countries on the other side of the Atlantic", see C. Newman, op. cit. (94), pp. 190-91.

(150) S. Sprigge, op. cit. (88), p. 432.


(152) P. Vaughan, op. cit. (79), p. 44.


(154) J. Brotherston, op. cit. (75), p. 95.

(155) R. Stevens, "Medical Practice in Modern England: The Impact of Specialisation and State Medicine",

(156) S. Holloway, op. cit. (85), Pt. 2, p. 235.


(158) W. Stokes, "Medical Education in the University of Dublin", Gill, Dublin, 1864/5, pp. 6-7.

(159) Ibid., p. 7.

(160) Ibid., p. 7.

(161) Lancet, 1879, 1, p. 895.


(163) Ibid., pp. 10-14.

See also J. Brotherston, op. cit. (75), pp. 115-17.


(166) S. Butler, op. cit. (162).


(169) GMC Minutes, 24, 1887, p. 28.

(170) Ibid., p. 28.


Chapter Five.


(4) For a more theoretical elaboration of the thesis that class conflict is more generic to earlier than later stages of the development of capitalist societies, see A. Giddens, "The Class Structure of the Advanced Societies", Hutchinson, London, 1973, Ch.8, esp. pp.212-5.


(8) These were "Principles of English University Education" (1837); and "Of a Liberal Education in General; with Particular Reference to the Leading Studies of the University of Cambridge" (1845).


(12) L. Crossley, "The Professionalisation of Science in Late Victorian Britain", Ph.D. thesis, University of New South Wales, 1979, Ch.3.


E. Brockbank, "The Foundation of Provincial Medical Education in England", Manchester, 1936, Ch. 6.

L. Crossley, op. cit. (12), Ch. 3, esp. pp. 76-82.


(21) Cited in Ibid., p. 62.


(23) M. Vaughan & M. Archer, op. cit. (18), p. 5.

(24) J. Kidd, SCME, 1834, 13, para. 4434-4649.

(25) Ibid.


(27) SCME, 1834, para. 4468.

(28) Ibid.
(29) Ibid.


(31) H. Sinclair & A. Robb-Smith, op. cit. (19), p. 44.


(33) F. Sherwood Taylor, op. cit. (30), pp. 82-3.

(34) Notwithstanding the absence of any ex officio relation to the Radcliffe, the practice of holding appointments there and of utilising the hospital's facilities for clinical teaching became more established. However, the close connection between medical pedagogy and practice (often understood to be a critical aspect of 'the birth of the clinic') was problematic in Oxford because of opposition to a 'complete' medical school.


(37) K. Franklin, op. cit. (35), pp. 432-3.


(40) Ibid., p. 17.

(41) Cited in Ibid., p. 20.


(43) Idem, "Science at Oxford", MS Acland, Bodleian Library, d. 92., p. 36.


(45) F. Sherwood Taylor, op. cit. (30), pp. 94-6.


(46) A. Engel, op. cit. (6), p. 34.

(47) M. Sanderson, op. cit. (3), Ch. 2., esp. pp. 75-8.


(50) A. Engel, op. cit. (6), pp. 35-8.


L. Jacyna, op. cit. (49), p. 36.


(53) H. Acland, op. cit. (39), pref., p. iii.

(54) See, for example, F. Sherwood Taylor, op. cit. (30), pp. 99-100.

(55) Acland's evidence before the Royal Commission on Scientific Instruction and the Advancement of Science, 1872 (c. 536) xxvi, p. 171.

(56) For further detail on the dynamics of this campaign, see J. Atlay, op. cit. (38), pp. 198-208.


(58) The epistemic rupture that gave birth to this science is examined in M. Foucault, "The Order of Things" (trans. A. Sheridan), Pantheon, London, 1970.

(59) The term 'natural theology' conceals a diversity of strands and cannot properly be employed to connote an undifferentiated totality of doctrinal thought.


Note that by the term 'catholic', most Tractarians merely meant that which was faithful to the teaching of the early and undivided church: in this sense the Church of England was itself regarded as a catholic church by Tractarians.


Newman's collected lectures were not published with the above title until 1873, but were written from 1852.


(67) Ibid., pp. 218-20.

(68) S. Cannon, op. cit. (61), p. 15.


(70) Ibid., p. 11.

(71) Ibid., pp. 22. ff.

(72) Ibid., pp. 16-17.

(73) K. Franklin, op. cit. (37), p. 434.

See also W. Collier, "The Growth and Development of the Oxford Medical School", BMJ, 1904, 2, pp. 221-6.


S. Cannon, op. cit. (61).


(76) J. Burdon-Sanderson, "The School of Medical Science in Oxford", Oxford, 1892.


(77) H. Silver, op. cit. (5), p.v. & Ch. 3.

M. Vaughan & M. Archer, op. cit. (18).


(83) Ibid., pp. 8-10.

(84) P. Enros, op. cit. (80), p. 145.

(85) S. Cannon, op. cit. (61), Ch. 2 & passim.

(86) A. Sedgwick, "A Discourse on the Studies of the University", Cambridge, 1835, p. 17.


See also R. Hooykaas, op. cit. (74).


(93) D. Winstanley, "Unreformed Cambridge", CUP, 1935.

(94) A. Robb-Smith, op. cit. (19), pp. 19-52, p. 45.


(96) Harwood was, however, the sole professor delivering any lectures on medicine to an audience that more often comprised interested laymen than medical students.


R. Williamson, "The Early History of the Department of Pathology at Cambridge" in Ibid., pp. 119-37, esp. p. 119.

Idem, op. cit. (95), p. 46.


(101) This brief discussion of Sir Busick Harwood's contribution to Cambridge medical education is directed less towards rehabilitating this individual as "a most interesting and stimulating member of the University" (R. Williamson, op. cit. (95), p. 433.), than to contravene conventional wisdom on the subject. For a critique of the explanatory potential of 'rehabilitation' as an aid to Marxist historiography of science, see D. Haraway, "Reinterpretation or Rehabilitation? An Excercise

(102) Poynter's judgement that Haviland was the "real creator" of the modern medical school is dubious in this light.


R. Franklin, op. cit. (19), pp. 30-35.


(105) SCME, 1834, (Burrows), para. 1912.

(106) A. Robb-Smith, op. cit. (19), p. 46.


(110) D. Winstanley, "Early Victorian Cambridge", Cambridge, 1940.


(112) A. Rook, op. cit. (107), pp. ix-xiii.

(113) M. Sanderson, op. cit. (3), Ch. 2., esp. pp. 75-81.

H. Rolleston, op. cit. (92), pp. 21-22.

(114) G. Geison, "Michael Foster and the Cambridge School of Physiology", Princeton, 1978, pp. 6-8, 47ff., 81-5.

Geison has legitimately observed that the University Commission represented a classic example of Gertrude Himmelfarb's "conservative revolution". (p. 8.)


(118) G. Geison, op. cit. (114), p. 93.

(119) Newman observed that Humphry has "not received his due recognition from medical historians" (op. cit. (26), p. 288.). More recently, Geison remarked that Humphry deserves further serious study (op. cit. (114), p. 157., n. 27.). However, unlike some of his contemporaries (including Huxley, Acland and Burdon-Sanderson), Humphry has not left archival papers or pamphlets. Cambridge University Library possesses no documents relating to Humphry's career. To the best of the present writer's knowledge, only the Royal Society has any documentary sources and these comprise only short articles illustrating Humphry's comparative anatomical and zoological interests.

(120) G. Humphry, "Treatise on the Human Skeleton, Including the Joints", Cambridge, 1858.

(121) Biographical data on Humphry compiled from:


A. Robb-Smith, op. cit. (94), p. 46.


(125) Biographical information on George Paget compiled from:
- R. Williamson, op. cit. (99), pp. 120, 125.


(126) D. Woollam, op. cit. (121), p. 141.


(128) H. Silver, op. cit. (5), esp. Ch. 3.


(132) F. Sherwood Taylor, op. cit. (30), p. 82.

(133) On medicine's changing relation to its basic sciences, see O. Temkin, "The Double Face of Janus and other Essays in the History of Medicine", Johns Hopkins, Baltimore, 1977.


(136) A. Robb-Smith, op. cit. (19), p. 52.

Chapter Six.


(2) T. Campbell, "Letter to Brougham", The Times, 9th Feb., 1825, p. 31.

(3) E. Brockbank, "The Foundation of Provincial Medical Education in England", Manchester, 1936.


(8) For this reason it is not always easy to separate Scottish from continental (and especially German) educational influences. Thomas Campbell had been highly impressed with German developments during a visit in 1820. See H. Perkin, "The Profession of University Teaching" in T. Cook (Ed), "Education and the Professions", Methuen, London, 1973, pp. 69-84, p. 74.

(9) Medical faculties had also played leading roles in the creation of the 'modern' universities of both Scotland and Germany which so inspired the founders of UCL.


University of Birmingham, 1950.


(14) "Memorial from the Faculty of Medicine, Directed to be Forwarded to the Council of University College, at a Meeting of the Faculty of Medicine", 1877, Coll. Corres. Med. Fac., Box 2, p. 1.


(17) S. Anning, "Provincial Medical Schools in the Nineteenth Century" in F. Poynter, op. cit. (15), pp. 121-34.

(18) H. Perkin, op. cit. (8), p. 74.

(19) See, for example, H. Bellot, op. cit. (7), Ch. 5.


(20) S. Curtis, op. cit. (6), pp. 421-3.


(21) For an examination of the different interests offended and provoked into opposition by the scheme, see H. Bellot, op. cit. (7), Ch. 7, esp. pp. 228-31.

(22) R. Franklin, op. cit. (11), pp. 163-4.


Medicine was excluded from the settlement of 1858, which nevertheless facilitated the teaching of medicine together with other subjects. See C. Newman, op. cit. (15), p. 115.

(24) Z. Cope, "The Private Medical Schools of London 1746-1914" in F. Poynter (Ed), op. cit. (15),
pp. 89-109.


See also S. Butler, op. cit. (19), pp. 269-73.

(33) Chapters seven and eight include a brief comparative analysis of French and German medicine.

George Canguilhem's germinal treatise "On the Normal and the Pathological" (London, 1978, 2nd ed.) has clearly not found a receptive Anglo-American audience.


(35) So tenacious was the grip exerted by this
anatomical frame of reasoning over the physiological endeavours of English life scientists that Gramsci's notion of cultural hegemony does not appear altogether incongruous as an explanation. For an attempt to employ similar Gramscian ideas, albeit to a rather different problem, see M. Berman, "'Hegemony' and the Amateur Tradition in British Science", J. Soc. Hist., 1, 1975, pp. 30-50.


(37) Ibid., pp. 231, 234-5.

(38) For a concise and trenchant defence of 'social interest' methodology as a potentially valuable heuristic resource for writing the history of science, see D. Mackenzie, "Interests, Positivism and History", Soc. Studs. Sci., 11, 1981, pp. 498-504.


(41) 'Resignation of Charles Bell', November 12th., n.y., University College, MS Coll. Corres., p. 46.


See also Lancet, 1830/31, 2, p. 734.

The original petition was signed by 17 students.


S. Butler, op. cit.(32), p. 35.


(49) P. Mazumdar, op. cit.(36), p. 237.

(50) Ibid.


(53) 'University College Calendars', 1831, pp. 192-293.


(59) 'University College Calendar', 1831.


(61) Ibid.


(64) Ibid.

(65) Ibid., p. 13.


(67) Ibid.

(68) W. Sharpey, "Lectures on Anatomy and Physiology",
As Michael Foster noted in his student days, "Sharpey was the only man ... who devoted his whole life to physiology. In all the other schools physiology was taught by practising physicians and surgeons ... He had no physiological apparatus whatever. All he did in the way of practical teaching at the time was to show us under the microscope preparations of the various tissues. There was no attempt whatever at any practical teaching of physiology. I remember very well when he was lecturing on blood pressure, and was describing the then new results of Ludwig, endeavouring to explain to us the blood pressure curve, all he had to help him was his cylinder chart which he put upon the lecture table before him and with his finger traced upon the chart the course of the curve. That was the way that physiology was taught by Sharpey in England in 1854."


(69) UCL Annual Reports, 1856, p. 9.


(72) Lancet, 1848, 2, p. 647.


(74) E. Brockbank, op. cit. (3), Ch. 6., esp. pp. 46-7.


(76) H. Perkin, op. cit. (8), p. 75.

(77) S. Curtis, op. cit. (6), pp. 421-2.


(81) A. Clark-Kennedy, op. cit. (15), pp. 116-7.


(84) Ibid., p. 23.

(85) Ibid., pp. 24-5.

(86) Ibid.


(88) Ibid., title.

(89) Mayo was not renowned for his teaching abilities; student numbers attending his classes dropped.

(90) G. Geison, op. cit. (32) 1972, p. 44.


See also R. French, op. cit. (32) 1971, pp. 28-55, p. 31.

(95) Ibid.

(96) G. Geison, op. cit. (32) 1972, p. 44.


Chapter eight includes fuller discussion of Huxley's place in the history of Victorian medical education. On the cosmology of scientific naturalism, see F. Turner, "Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian Britain", New Haven, Yale, 1974, esp. Ch. 2.


For a penetrating critique of technological determinism which raises the critical question of the influence of social factors on the shaping of technology itself, see D. Mackenzie & J. Wajcman (Eds), "The Social Shaping of Technology", Open University Press, Milton Keynes, 1985, esp. pp. 4-12, 68-74.


Basil Bernstein's recent work on the 'classification' and 'framing' of curricula cries out for further development here:


See, for example, N. Hanson, "Perception and Discovery", Cooper, San Francisco, 1969.


See also Idem, "The Microscope in Medicine", London, 1854.

L. S. Jacyna, "Scientific Naturalism in Victorian
Much of Beale's scientific work was a subtle blend of chemistry and microscopy. The third chapter of Beale's "The Microscope in its Application to Practical Medicine" (4th ed., London, 1867) was titled 'The Chemical and Microscopical Examination of the Solids and Fluids of the Animal Body'.


In 1870 Rutherford issued a synopsis of the histology course he organised at King's. It was published two years later:


Ibid.

(121) T. Kuhn, "The Structure of Scientific Revolutions", Chicago, 1970, Chs. 6, 7, 8.


(123) Ibid.


Beale concluded this introductory address with the observation that "the written word of God" could alone guide students "peacefully through the rugged paths and unequal hardships of <their> practical daily life..." (p. 31).


(126) S. Taylor, "The Diary of a Medical Student During the Mid-Victorian Period, 1860-1864", Jarrold, Norwich, 1921, p. 3.

(127) Ibid., p. 13.


(129) Ibid., p. 5.

(130) Ibid., pp. 5-6.

(131) Ibid., p. 35.

I wish to acknowledge the important research of L. S. Jacyna as particularly instructive in accounting for KCL's school of histology. See L. S. Jacyna op. cit. (108), esp. Ch. 3.

Chapter Seven.


(3) See the recent debate between Gilbert & Mulkay on the one hand and Shapin on the other:

Isis, 75, 1984, pp. 105-30.


I have deliberately chosen to focus most of my discussion of hospital medical education on metropolitan schools although it is occasionally supplemented with reference to Dublin and the provinces. I am, of course, aware that differences between metropolis and province were of critical importance. S. Butler's thesis was originally devoted to the amalgamation of provincial schools with the new university colleges of the later half of the nineteenth century, and includes thorough documentation of the development of provincial medical education. On the general significance of the metropolitan/provincial axis, see I. Inkster & J. Morrell (Eds), "Metropolis and Province", Hutchinson, London, 1983.


B. Abel-Smith, op. cit. (4), pref.

(6) Idem, loc. cit., Ch. 2.


For an analytically profound extension of this characterisation of the epochs of medical history, see N. Jewson, "The Disappearance of the Sick Man from Medical Cosmology 1770-1870", Sociology, 10, 1976, pp. 244-255.

(9) The definitive thesis of revolutionary discontinuity is articulated in M. Foucault, "The Birth of the


(12) E. Ackerknecht gives the following alternative estimate of the growth of the hospital movement in Paris: in 1807 Parisian hospitals housed 37,743 patients; 41,000 in 1817; 53,000 in 1827. He warns, however, of the difficulties encountered in finding reliable or accurate figures: op. cit. (8), p. 18.


See also J. Crosse, "Sketches of the Medical Schools of Paris", London, 1815.

(14) E. Ackerknecht, op. cit. (8), Ch. 16, esp. pp. 192-3.

See also R. Maulitz, op. cit. (7).


(16) R. Shryock, op. cit. (10), Ch. 9.

(17) E. Ackerknecht, op. cit. (7).

M. Foucault, op. cit. (9).

I. Waddington, op. cit. (10).

(18) Bureaucratic centralisation which facilitated the reorganisation of the French hospital system was consolidated in 1801 when Napoleon instituted the 'Conseil Generale d'Administration'.

(19) T. Gelfand, "Professionalising Modern Medicine:"


T. Gelfand, op. cit. (19), Ch.10, & passim.

(21) G. Morgagni, "De Sedibus et Causis Morborum per Anatomen Indignatis", 1761.


(29) E. Ackerknecht, op. cit. (8), pp.9-11, 104.


I. Waddington, op. cit. (10), pp.211-12.


France was soon to be superseded by Germany as the country critics of English medical education most frequently cited as an example to be emulated.
(52) Ibid.


(54) Idem, op. cit. (8), pp. 231-7.


(58) Ibid., p. 2.


(61) R. Shyrock, op. cit. (10), Ch. 9.


N. Jewson, op. cit. (8), pp. 234-6.

This shift is associated with the emergence of a collegiate mode of occupational control where the producer defines both the needs of the consumer and how they are to be met. See T. Johnson, "Professions and Power", Macmillan, London, 1972, Ch. 4.

(63) Chapter four includes a sub-section on the cadaver crisis and the Anatomy Act of 1832.

(64) C. Newman, op. cit. (4), pp. 85-94.

(65) M. Foucault, op. cit. (9).

(66) E. Ackerknecht, op. cit. (8).


(68) Ibid., p. 9.

It must not be supposed that such utterances convey anything authentic about the complexity of Darwin's evolutionary thesis. Such rhetorical appeals to the authority of monumental individuals (a Victorian obsession) was a favoured ploy of polemicists of many camps. Surgeons made John Hunter the object of collective hero-worship. Some scientists continued to invest the names of Descartes, Bacon and Newton with sanctimonious authority. Polemical discourse naturally presented an over-simplified and one-sided iconography of the favoured persona grata. Virtually all the pedagogical discourse presented in this thesis drew the attention of students to an individual in the history of medicine with whose legacy the teacher broadly identified. The strength of such identification — however implicit — in the context of textbooks in the history of science is one of T. S. Kuhn's well-known explanations for the 'invisibility' of scientific revolutions. See T. Kuhn, "The Structure of Scientific Revolutions", London, 1970, Ch. 11.


Broussais had spearheaded the campaign of opposition to the clinical medicine of Bayle, Laennec, Louis and others of the anatomo-pathological school. See E. Ackerknecht, op. cit. (8), Ch. 6, esp. pp. 62-6.

W. Walshe, loc. cit., p. 420.
(80) Ibid., (emphasis in original).

(81) Ibid., see n.77.


(83) Ibid., p.3.

(84) Bloodletting was guardedly defended as late as 1878 by Wharton Jones (also of University College Hospital). He argued that the weight of medical opinion had swung too far against venesection. See *Lancet*, 1878, 2, pp.613-5.

(85) W.Walshe, op.cit.(83), p.3.

(86) Ibid., pp.4-5.


(89) Ibid., pp.16-17.

(90) Ibid., pp.20-21.


(93) Ibid., p.7.


(95) C.West, "The Profession of Medicine, Its Study and Practice; Its Duties and Rewards", London, 1850, pp.10, 16.

(96) Ibid., p.18.

(97) Ibid., pp.23-30.

The thrust of West's argument here is to preserve something of the subjective feelings of the patient against the trend towards objectification and reification previously noted.

(98) For some profound observations on the differences between clinicians' ontological conception of disease and physiologists' dynamic functional


(100) W. Stokes, "Address in Medicine" in Lancet, 1865, 2, pp. 395-9, p. 397.

(101) Ibid., p. 398.


(103) Ibid., pp. 160-61.

(104) Ibid., p. 162.


(107) Ibid., p. 10.


(109) A. Shepherd, "Introductory Address", London, 1873, pp. 17.

(110) M. Peterson, op. cit. (41), pp. 13-16.


(112) J. Ben-David, op. cit. (15).


(114) S. Taylor, "The Diary of a Medical Student During the Mid-Victorian Period, 1860-1864", Jarrold, Norris, 1921, pp. 11, 62, 149, (emphases added).

(115) At the beginning of the nineteenth century Guy's Hospital formed one node (together with St. Thomas') of the 'United' hospitals. Separation took place in 1825 with leading surgical teacher Sir Astley Cooper expressing allegiance to Guy's. See S. Wilks & G. Bettany, op. cit. (39).

H. Cameron, "Mr. Guy's Hospital, 1726-1948", London,

These do not square with E. Ackerknecht's "A Short History of Medicine" (op.cit.(13)) which gives: Bright(1781-1858); Addison(1783-1860); Hodgkin(1798-1864); (p.155).


Hamilton sees London medicine changing decisively in the direction of a 'Scottish' type of education. It is important, however, not to underestimate the rivalry and enmity between London and Edinburgh elite medical circles which persisted long into the nineteenth century.


(119) R. Bright, "Reports of Medical Cases Selected with a View to Illustrating the Symptoms and Cure of Disease by a Reference to Morbid Anatomy", London, 1827.


R. Shryock, op.cit.(10), Ch.10, esp.pp.181-4.


(124) N. Coley, "Early Medical Chemistry at Guy's Hospital c.1800-1850", Paper Presented to Conference on Science and Modern Medicine, UMIST,
1985, pp.4-7.

A. Robb-Smith, op. cit. (123), p. 63.
N. Coley, op. cit. (120), p. 129.


(127) S. Reiser, op. cit. (120), p. 129.


(130) R. Graves, "Clinical Lectures on the Practice of Medicine", Fannin, Dublin, 1848, (2 Vols.)

(131) Idem. Cited in K. Keele, op. cit. (128), p. 104. Graves was enamoured of German clinical medicine which had a more scientific and experimental inflection than the native British tradition.

(132) The next chapter suggests that the emergence of a more definitive scientific research school depended on a different institutional context (the university), and a different 'laboratory' mode of medical production. KCL perhaps represented an exception to this statement (about Guy's) explicable by virtue of its attachment to London University.

Chapter Eight.


B. Latour & S. Woolgar, "Laboratory Life", Sage,

(4) Ibid., Ch.1.


(7) For a theoretical programme concerned to integrate what has often illegitimately been presented as analytically separable elements of a given social situation, see K. Knorr-Cetina & A. Cicourel (Eds), "Advances in Social Theory: Toward an Integration of Micro- and Macro-Sociologies", Routledge, London, 1981.


(15) W. Welch's Introduction to T. Billroth, "The Medical


The critical problem with Ben-David's argument and the table reproduced here is that defining the medical sciences as "all discoveries that eventually become part of the medical tradition" (p.307) begs the question of what counts as a 'discovery' and glosses over the social processes whereby certain fields of knowledge are included and others excluded from that 'medical tradition'. As argued in our previous discussion of 'quackery' and alternative medicine, the socio-cognitive dimensions of defining 'medicine' as such are critically important, but given this author's hostility to applying the sociology of knowledge to the esoteric content of medical science it is scarcely remarkable that these issues are ignored.


American reformers strove to raise admission standards, expand the 'scientific' elements of the curriculum, and affiliate with high status universities: all were modelled on the German system which Abraham Flexner, of course, admired and endorsed. See T. Bonner, op. cit. (21), pp.57-63.


(24) Further examples of the positivistic interpretation include:


(26) J. Ben-David, op. cit. (16).


(27) F. Schelling, "Vorlesung uber die Methode der Akademischen Studiums", Cotta, Tubingen, 1803.


(29) On the life of Karl Wilhelm Humboldt, see biography by Haym (1856). For his collected works see Bruno Gebhardt (Ed), "Wilhelm von Humboldt's Gesammelte Schriften", Berlin, 1903.

Some of the secondary literature is remiss in failing to distinguish clearly between this Humboldt and his younger brother Friedrich Heinrich Alexander Humboldt (1769-1859), German naturalist and explorer whose comprehensive physical picture of the universe served as a cosmology which underwrote and inspired much scientific work (especially in the earth sciences) in the earlier half of the nineteenth century. If any individual furnished a transnational paradigm in this period, it was Alexander Humboldt. His influence on the reform of the German university system was, at most, indirect. However, the scientific views cited in Karl Wilhelm's text are certainly compatible with his brother's broad cosmological outlook. See W. Farrar, op. cit. (25), pp. 183-4.


(31) Cited in H. Simmer, "Principles and Problems of
Medical Undergraduate Education in Germany During the Nineteenth and Early Twentieth Century" in C.O'Malley(Ed), "The History of Medical Education", London, 1970, pp.173-95, p.179.

(32) Ibid., p.189.

(33) Ibid., p.190.

(34) Abraham Flexner, whose famed Report of 1910 broadly sought to transfer to the USA the successful model of the German 'university' mode of medical education was acutely aware of the need to bridge the gap between experimental science and clinical medicine. He drew attention to the importance of 'internal medicine' which had provided the basis for 'raprochement' in Germany. See A. Flexner, "Medical Education in the United States and Canada", Report to Carnegie Foundation, New York, 1910, pp.93-4.


(37) D.Cardwell, op.cit.(23), pp.28-9.


Puschmann's is the more elegant and superior work.


(40) Puschmann was supported by leading statesman and pathologist Rudolf Virchow on this issue.

(41) J.Liebig, "Organic Chemistry in its Applications to Agriculture and Physiology",
London, 1840.


(42) For a conjectural model of an 'ideal' research school and a comparison of Liebig's successful research school at Giessen and Thomas Thompson's less successful school at Glasgow, see J. Morrell, "The Chemist Breeders", Ambix, 19, 1972, pp. 1-46.


(46) W. Haberling, "Johannes Muller", Leipzig, 1924.


(47) The establishment of Muller's research school cannot be ascribed directly to the prior example of Giessen. See W. Farrar, op. cit. (25), p. 188.


(50) Unlike many of his successors, Muller had a distaste for vivisection which partly accounts for a shift in his interests away from experimental physiology. See C. Mettler, "History of Medicine", Blakiston, Philadelphia, 1947, p. 141.

(51) W. Farrar, op. cit. (25), p. 188.


(53) P. Lundgreen, "The Organisation of Science and Technology in France: A German Perspective" in


(55) Ibid., p.250-55.


D. Cardwell, op. cit. (23), pp.30-33.


(66) L. Jacyna, "Immanence or Transcendence: Theories of Life and Organisation in Britain, 1790-1835", Isis, 74, 1983, pp.311-29.


(72) R. Shryock, "The Development of Modern Medicine", Philadelphia, 1936, Ch. 11.


W. Coleman, "Biology in the Nineteenth Century", CUP, 1977, Chs. 6, 7.

(73) Theodor Puschmann considered these two discoveries in physics to be "of the highest significance" for medical science, op. cit. (38), p. 459.


(76) For an interesting history of physiological thought organised around conflicting answers to Shelley's question, see C. Smith, op. cit. (72).

(77) W. Coleman, op. cit. (72), Ch. 7.

(78) On the background to cellular theory, see S. Reiser, op. cit. (75), Ch. 4.

T. Hall, op. cit. (48), Chs. 36-46.

(79) For an extremely whiggish account of the


(82) T. Hall, op. cit. (48), pp. 280-85.

(83) Cited in L. Rather, op. cit. (81), p. 84.

(84) C. Smith, op. cit. (72).

(85) F. Manuel, "From Equality to Organicism", J. Hist. Ideas, 17, 1956, pp. 54-69.


(89) Ibid., pp. 99-100, 117, 153-4.


(91) T. Billroth, op. cit. (15), p. 69.

(92) Ibid., p. 90.

(93) T. Puschmann, op. cit. (38), p. 598.

(94) J. Ben-David & A. Zloczower, op. cit. (62).

(95) C. Kind, "On Medical Education in the German Universities", Lancet, 1927/8, 1, pp. 249-57, pp. 252, 252.

(96) 'Editorial', Lancet, 1827/8, 1, pp. 266-7, p. 266.

(98) Ibid., p. 472.

(99) Ibid., p. 473.

(100) J. Morgan, "Medical Education at the Universities", Manchester, 1875, p. 7.

(101) Ibid., p. 22.

(102) Ibid.


(106) L. Jacyna, op. cit. (10).


(110) For further biographical details on Huxley's life and work, see:


L. Huxley, op. cit. (103).

See also T. Huxley, op. cit. (1), (1893).

Huxley Papers, Imperial College, London.

(112) By this qualification I mean to recall earlier historiographical reflections. In particular, Quentin Skinner's injunction to avoid 'the mythology of coherence' in writing the history of ideas is pertinent here. Like Marx's, Huxley's scientific and metaphysical views underwent clear epistemological development. Broadly speaking, Huxley's philosophical outlook evolved from an early quasi-Romantic idealism (in which Goethe and Coleridge were influential forebears) towards an ever more naturalistic and determinist perspective, yet culminated in the last years of his life in a view of evolution and ethics which bore witness to the amorality of nature and pitted man once more against and separate from 'nature'. For a trenchant contextualist historical analysis which gives precedence to the socio-economic and political conjunctures which underpinned Huxley's shift to a reformulated conservative naturalism, see L. S. Jacyna, op. cit. (10). In the present study, however, I shall focus discussion on Huxley's most well-known scientific beliefs - naturalistic, physicalist and experimental.


Huxley here uses the term 'liberated' to describe the recent relationship between physiology and comparative anatomy.


(119) C. Bibby, op. cit. (110), pp.250-1.

(121) J. Paradis, op.cit.(110), Ch.3.

(122) Huxley accomplished this task largely through locating the physical basis of life beyond the cellular level in a substance he termed 'protoplasm'. Lionel Beale's neo-vitalism was one of Huxley's main targets. See T. Hall, op.cit.(48), Vol.2, Ch.47.


(127) For a general discussion of medicine's changing relationship with the sciences, see O. Temkin, op.cit.(67). See also C. Brooks & P. Cranefield, op.cit.(68).


(129) Ibid., pp.355-69.

(130) Ibid., p.371.


(133) R. Shryock, op.cit.(72), Ch.9.

E. Ackerknecht, op.cit.(71), Ch.12.


Nosological schema were, of course, part of the conceptual apparatus of the clinician. Baume was deploying it to serve 'scientific' ends.


(140) Ibid., p. 373.


M. di Gregorio, op. cit. (110).

(142) Huxley did not, however, seek to import the 'German' system of professorial teaching without modification. He believed it would not resolve London University's late-nineteenth century crisis. See L. Huxley, op. cit. (110), pp. 263 ff.

(143) C. Bibby, op. cit. (110), Ch. 10.

(144) T. H. Huxley, Article in 'The Times', June 10th, 1892, p. 88.

(145) L. Crossley, op. cit. (44), Ch. 3, esp. pp. 91-100.


(150) C. Bibby, op. cit. (110), Ch. 4, esp. pp. 68-71.

(151) On the complex phenomenon of 'secularisation', see:


A. Gilbert, "The Making of Post-Christian Britain",


(154) For a well-known discussion of new professional groups which, however, errs in underestimating both their political power and their ideological cohesion, see H. Perkin, "The Origins of Modern English Society", Routledge, London, 1969, pp. 252-70.


C. Bibby, op. cit. (110), pp. 135-43.


(159) G. Geison, op. cit. (157), pp. 159-60.

(160) On the long-term shift to the problematic of experimentation in the bio-medical sciences, see W. Coleman, op. cit. (72), Ch. 7.


(164) Ibid., Letter 2, p. 22.

(165) Ibid., p. 18.

(166) Use of such Scottish examples here and elsewhere is not, I repeat, intended to obscure the
importance of differences between English and Scottish medicine. In this particular case, Bennett's influence extended beyond Scotland. His continental training in 'scientific' medicine, moreover, is more germane to the present discussion than his occupancy of a Chair at Edinburgh.

(167) For a succinct statement of Bennett's contribution to British physiology and medical pathology, see L. Jacyna, "The Background to Cellular Pathology in Britain", Paper Presented to Conference on Science in Modern Medicine, UMIST, April, 1985, pp.27-30.


(169) Cullen had, in fact, gone so far as to argue that observation was impossible without theory - a relatively rare opinion in eighteenth century Scotland. I am grateful to Mike Barfoot for this observation.


See also S. Reiser, op. cit. (75).

(172) J. Hughes Bennett, op. cit. (168), pp.10, 22.


(175) Ibid., p.19.

(176) On the polemical significance of such ritual evocation of Hunter's 'scientific' surgical accomplishments, see L. Jacyna, "Images of John Hunter in the Nineteenth Century", Hist. Sci., 21, 1983, pp.85-108. This author's emphasis on the social cachet purchased by surgeons (seeking to achieve comparable status with physicians) through a stress on the intellectual qualities of Hunterian physiology almost certainly explains Solly's position here.

(177) S. Solly, "Introductory Address", Allen, London,
1868, p. 11.


(180) Ibid., pp. 40-41.


(183) F. Turner, op. cit. (124), Ch. 2., esp. pp. 24-8.


(185) Ibid., p. 15.


(187) W. Rutherford, "Introductory Lecture on the Present Aspects of Physiology", Lancet, 1874, 2, pp. 683-9, p. 683, (emphasis added to underline the contrast with the customary clinical preoccupation with the unique experience of the sick man).
(188) Rutherford and Huxley were close professional colleagues, especially on the controversial issues raised by vivisection.


On Ferrier's work on cerebral localisation, see R. Young, "The Functions of the Brain: Gall to Ferrier", Isis, 59, 1968, pp. 251-68.


(193) A. Gamgee, "Science and Medicine" in "Essays and Addresses by Professors and Lecturers of the Owens College", Manchester, 1877.


(195) Ibid.

(196) Ibid., p. 476.


(199) See fn. 166.


(204) The parallel with communication between sociologists and historians is too obvious to miss. See P. Burke, "Sociology and History", London, 1976.


(207) J. Warner, op. cit. (205).

(208) For a general account of the process of scientisation during this period, see R. French, op. cit. (178), Ch. 9.


(210) Reasons of space preclude fuller documentation of the earlier synthetic position (see on for the early twentieth century position). Many on either side of the divide made ritual obeisance to the need to bring certain elements together yet remained committed, in the last analysis, to one or other of the contending schools of thought. Eminent Irish physician, William Stokes, a close colleague of Acland and another among the cultured gentlemanly elite, also articulated a compromise position which was, in its essentials, indistinguishable from Acland's. See Sir W. Stokes, "William Stokes", Fisher & Unwin, London, 1897.


(213) Idem, "Relations of Physiology and Medicine", Parker, Oxford, 1865, pp. 9, 27, 29, (emphases in
original).


These last two examples have been cited to convey that the basic outlook of medical reformers was comparable in the USA and Britain.


(218) Sir G. Newman, "Some Notes on Medical Education", HMSO, 1918, p.79.

Newman's notes were addressed to H. A. L. Fisher, President of the Board of Education.

(219) S. Butler, op. cit. (214).


(221) For a brief assessment of the ramifications of this convergence via examination of the work of the Medical Research Council, see D. Hamilton, "'Too Difficult for Doctors'- British Attitudes to Clinical Research in the Early Twentieth Century", Paper Presented to Conference on Science in Modern Medicine, UMIST, April, 1985.

(222) That some historians share the assumptions of this misconception is abundantly clear in G. Williams, "The Age of Miracles", Constable, London, 1981, passim.


(223) On the obsessive preoccupation of the first generation of bacteriologists with specific aetiology and on the initial importance of bacteriological science in giving a new lease of life to clinicians' customary nosological project, see B. Dixon, "Beyond the Magic Bullet", Allen &
However, I am grateful to Malcolm Nicolson for the important point that initial optimism concerning the possibility of a specific microbial cure for every specific disease was short-lived and that it is misleading to overstate the commitment to aetiological monism in this regard.


(228) Deleted.

(229) Deleted.

(230) The centrality of individualism as a pervasive ideology of the middle class has often obscured the social and collective dimensions of its pursuit of upward mobility. See N. Parry & J. Parry, "The Rise of the Medical Profession", Croom Helm, London, 1976, Ch. 1.


(233) G. Geison, op. cit. (43).

Idem, op. cit. (157).

(235) Ibid., pp. 79-81.


(237) P. Pye-Smith, "Medicine as a Science and Medicine as an Art", Lancet, 1900, 2, p. 310.

Also cited in C. Lawrence, op. cit. (171), p. 511.


(239) J. Schiller, op. cit. (136), p. 120.

(240) Ibid., p. 121.

(241) G. Geison, op. cit. (161), pp. 81-2, 85.


(245) Ibid., pp. 118-20.

For a critique of the implicit and problematic positivism discernible in some of Jamous & Peloille's formulations, see P. Atkinson et al., op. cit. (228).


(248) For an attempt to develop this argument in a more explicitly historical materialist direction by linking the I/T ratio with the organisation of

(249) W. Bowman, "Thoughts for the Medical Student", Parker, London, 1851, p. 20.

See also C. Lawrence, op. cit. (171), p. 510, & passim.


(252) C. Newman, op. cit. (238), Ch. 5.

He argues that the desired end-product of medical education and model doctor between 1875 and 1925 was "a sound clinician who thought in terms of physical signs", (p. 205).


(254) The discovery was incidental and not the main subject under investigation.


(256) A. Youngson, op. cit. (180), p. 16.

(257) N. Jewson, op. cit. (12).

(258) Ibid., p. 225.

Concluding Observations.


(2) For different defences of the explanatory power of the methodology of comparative historical sociology, see C. Black, "The Dynamics of Modernisation: A Study in Comparative History", Harper, New York, 1966.


(3) For valuable criticism of this kind of explanation which was commonplace in much history of medicine before the 1960s, see S. Shortt, "Physicians, Science and Status", Med. Hist., 27, 1983, pp. 57-68.

(4) The merit of the present thesis is not intended to rest mainly on its sensitivity to the nuances of specific local contexts - partly a consequence of the wide scope of historical sociology and also in part on account of the need to avoid repetition of prior scholarship. See, however, Section 5 of the bibliography which includes studies relating to particular hospitals and medical schools.


(6) It will not have escaped the perceptive reader that these three characterisations of the professions correspond broadly with the views of the 'founding fathers' of sociology - Marx, Durkheim and Weber - respectively.

(7) Something of the complexity of defining professions and professionalism may be gleaned from:


J. Jackson (Ed), "Professions and Professionalisation", CUP, 1970.
The bibliography includes a fuller survey of the relevant literature.

(8) Among the studies responsible for effecting this shift of direction were:


(9) This is another way of re-emphasising my commitment to historical sociology.

(10) The place of these different aspects of occupational development in medical professionalisation is discussed in:


M. Larson, op. cit. (8).


(12) This argument is well-known to medical historians through Peterson's work; for this reason I have not laboured the point throughout the thesis. See M. Jeanne Peterson, "The Medical Profession in Mid-Victorian London", London, 1978, esp. pp. 35-9, 70-6, 87-9, 121-4, 139-41, 156-8, 163-79, 281-3.

The first commentator to compare the authority of doctors with the priesthood of former times was T. Underhill, "On Hospitals and Medical Education", Birmingham, 1870.


(15) V. Bullough, op. cit. (10).

(16) M. Larson, op. cit. (10).


(20) S. Shortt, op. cit. (3).

(21) E. Freidson, op. cit. (8).

M. Peterson, op. cit. (12).


T. Johnson, op. cit. (8).


(26) W. Reader, op. cit. (10).


(28) M. Peterson, op. cit. (12), Ch. 4.

S. Shortt, op. cit. (3).

(29) I. Inkster, "Marginal Men" in J. Woodward &

(30) J. Berlant, op. cit. (10).


(34) M. Larson, op. cit. (8).


(38) Ibid.


(40) Relevant studies include:


M. Larson, op. cit. (10).

J. Berlant, op. cit. (10).

W. Reader, op. cit. (10).

T. Johnson, op. cit. (8).

(41) For profound reflections on clinical culture, see H. Engelhardt, S. Spicker & B. Towers (Eds), "Clinical


(43) The principal clinical goals are active intervention, restoration, healing and cure. See E. Pellagrino, "The Anatomy of Clinical Judgements" in op. cit. (41), pp. 169-94.


(49) A. Castiglioni, "Neo-Hippocratic Tendency of Contemporary Medical Thought", Medical Life, 1934.


(51) Whilst Coulter's overall thesis is flawed, it is intellectually enervating to read a medical historian who is favourably disposed towards homeopathy.


(53) Given that closeness to patients is a critical aspect of clinical ideology, Coulter's economic rather than psychological function is more relevant here.


(56) P. Elliott, "The Sociology of the Professions", 
(57) On the ideal of service in the nineteenth century, T.H. Marshall argued in 1939 that "leisure was no longer in the same sense the mark of the aristocracy, and commerce was no longer a disreputable occupation ... The professional had to change his ground. He had to admit that his occupation was laborious, like the tradesman's - and even to glory in the fact - but to assert that it was labour of a superior kind... The idea of service became more important than the idea of freedom."


(62) T. Puschmann, "A History of Medical Education from the Most Remote to the Most Recent Times" (trans. E. Hare), London, 1891, p.498.


(64) For a defence of the thesis that we in the present day concede too much to scientific knowledge, and for a trenchant critique of contemporary philosophical myths about science, see N. Elias, op. cit. (17), esp. pp.6-17, 25-37, 43-5, 58-67.

(65) D. Chubin & S. Restivo, "The 'Mooting' of Science Studies: Research Programmes and Science Policy" in K. Knorr-Cetina & M. Mulkay (Eds), "Science Observed",
Nor does the thesis endorse the implicit pluralism which assumes either that the contest between different medical interest-groups is an equal one, or that the outcome of disputes can only be explained in terms of the power explicitly brought to bear in the political arena. See Idem, "Interests and the Growth of Knowledge", Routledge, London, 1977, pp. 24, 41 & esp. pp. 57-8.

The project originally undertaken by the present writer related to modern medical education at the University of Edinburgh. The most memorable occurrence in connection with this project was an anatomy lecturer's warning that certain aspects of a widely-used dissection manual were dubious and that he would point out the relevant errors later in the dissection room - clearly expressing clinical unease with rationalist book-medicine.

"Healing Without the High-Tech", The Sunday Times, 18th May, 1986, p. 32.


See, for example, B. Barnes & S. Shapin, "Natural Order", Sage, Beverley Hills, 1979.

C. Webster (Ed), "Biology, Medicine and Society 1840-1940", CUP, 1981.

P. Wright & A. Treacher, op. cit. (71).

R. Wallis, op. cit. (33).


No attempt at comprehensiveness is intended in the following bibliography which is arranged thematically under different sub-headings. I have rather aimed to provide the reader with a means of orientation in the relevant field. The sub-categories overlap, but I cite books or articles from learned journals only once in the whole bibliography.

1. Historiography and Social Theory of Science and Medicine.


N. Hanson, "Perception and Discovery; An Introduction to Scientific Enquiry", San Francisco, 1969.


D. Lacapra, "Rethinking Intellectual History and Reading Texts", Hist. & Theory, 19, 1980.


M. Pelling, "Medicine Since 1500" in P. Corsi & P. Weindling (Eds), 1983.

M. Pelling, "Experimentalism and the Life Sciences Since 1800" in P. Corsi & P. Weindling (Eds), 1983.


G. Sarton, "History of Science Versus the History of Medicine", Isis, 1935.


G. Stedman-Jones, "From Historical Sociology to Theoretical History", BJS, 27, 1976.


C. Webster, "The Historiography of Medicine" in P. Corsi & P. Weindling (Eds), 1983.


R. Bucher & A. Straus, "Professions in Process", AJS, 66,
1961.


R. Perucci, "In the Service of Man: Radical Movements in the Professions" in P. Halmos (Ed) 1973.


S. Shortt, "Physicians, Science and Status: Issues in the Professionalisation of Anglo-American Medicine in the


3. Medical Education in Scotland.


R. Anderson & A. Simpson (Eds), "Early Years of the Edinburgh Medical School", Edinburgh, 1976.


M. Buchanan, "History of the Glasgow Royal Infirmary", Glasgow, 1832.


A. Duncan, "Memorials of the Faculty of Physicians and Surgeons of Glasgow", Glasgow, 1896.


J. Glaister, "Dr. William Smellie and his Contemporaries", Glasgow, 1894.


J. Patrick, "A Short History of the Glasgow Royal Infirmary", Glasgow, 1940.


I. Rae, "Knox, the Anatomist", Edinburgh, 1964.


J. Scotland, "The History of Scottish Education", London,
1969, (2 Vols).


A. Turner, "History of the University of Edinburgh", Edinburgh, 1933.


4. Continental Medical Education - France and Germany.


W. Coleman, "Death is a Social Disease: Public Health and Political Economy in Early Industrial France", Madison, Wisconsin.


M. Genty, "Bichat et son Temps", La Medicine Internationale Illustree, 42, 1935.


T. Puschmann, "A History of Medical Education from the Most Remote to the Most Recent Times" (trans. E. Hare), London, 1891.


J. Schwalbe (Ed), "Virchowbibliographie 1843-1901", Berlin, 1901.


R. Virchow, "Disease, Life and Man: Selected Essays" (Ed. Rather), Stanford, 1959.


5. Medical Education in England.


S. Anning, "Provincial Medical Schools in the Nineteenth Century" in F. Poynter (Ed), 1966.

I. Ashe, "Medical Education and Medical Interests", 

Dublin, 1868.


W. Bowman, "Thoughts for the Medical Student", London, 1851.

E. Brockbank, "The Foundation of Provincial Medical Education", Manchester, 1936.

B. Brodie, "Duties and Conduct of Medical Students and Practitioners", London, 1843.


Z. Cope, "The History of St. Mary's Hospital Medical School or A Century of Medical Education", London, 1954.


J. Fulton, "History of Medical Education", BMJ, 1953.


W. Guy, "On Education as Illustrated by Medical Usages and Experiences", London, 1868.


D'Arcey Power, "The Rise and Fall of the Private Schools in London", BMJ, 1895.


E. Starling, "A Discussion of the Scientific Education of the Medical Student", BMJ, 1908.

E. Starling, "Medical Education in England", BMJ, 1918.

W. Stokes, "Medical Education: A Discourse", Dublin, 1864.

S. Taylor, "Diary of a Medical Student", Norwich, 1927.


T. Underhill, "On Hospitals and Medical Education", Birmingham, 1870.


J. Woodward, "To Do the Sick No Harm: A Study of the


6. Medical Reform, Public Health and the State.


London, 1871.
R. Griffen, "Grievances of the Poor Law Medical Officers", London, 1858.
A. Harvey, "Four Letters on Administrative Reform", London, 1858.
Sir R. Inglis, "The Touchstone of Medical Reform", London, 1841.


S. Squire Sprigge, "The Life and Times of Thomas Wakley", New York, 1974 (facsimile of 1899 ed.).


7. Medical Education at the English Universities.


J. Burdon-Sanderson, "New Medical Statutes", Oxford, 1885.


J. Burdon-Sanderson, "The School of Medical Science in Oxford", Oxford, 1892.


A. Clark-Kennedy, "London Hospital, the Rise of the University" in F. Poynter (Ed), "The Evolution of Medical Education in Britain", London, 1966.


M. Foster, "On Medical Education at Cambridge", 1878.


J. Morgan, "Medical Education at the Universities", Manchester, 1875.

J. Morgan, "Why are There No Medical Degrees?", London, 1881.


M. Pattison, "Suggestions on Academical Organisation With Special Reference to Oxford", Edinburgh, 1868.


M. Sanderson, "The Universities and British Industry,


A. Sedgwick, "A Discourse on the Studies of the University", Cambridge, 1835.


W. Sharpey, 'Collected Papers and Correspondence', University College, London Library.


A. Waller, "On the Centralisation of Medical Education in the University of London", BMJ, 1901.


W. Whewell, "Of a Liberal Education in General; With
Particular Reference to the Leading Studies of the University of Cambridge, Cambridge, 1845.


D. Winstanley, "Early Victorian Cambridge", Cambridge, 1940.


8. Biomedical Knowledge: Anatomy, Physiology and Pathology.


J. Hughes Bennett, "Principles and Practice of Medicine", Edinburgh, 1858.

J. Hughes Bennett, "Physiology as a Branch of General Education", Edinburgh, 1861.


BMA Discourses on "Medicine in Modern Times", London, 1869.


S. Delapine, "On the Place of Pathology in Medical Education", Manchester, 1896.


M. Foster, "Relation of Physiology and Pathology", BMJ, 2, 1880.


W. Greenfield, "The Relations of Physiology and Pathology", BMJ, 1884.

B. Haines, "The Inter-Relations of Social, Biological and Medical Thought 1750-1850", BJHS, 11, 1978.


BJHS, 2, 1967.


