

MEDICINE AT CAMBRIDGE 1660–1760*

by

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'MOST LEARNED SIR, A great light arose upon the medical world when your "History of Acute Diseases" was given to it . . .'. With these words Henry Paman, Fellow of St. John's College and Public Orator of the University of Cambridge, begins his Epistle, dated from Lambeth Palace, 12 February 1679,¹ addressed to his good friend Dr. Thomas Sydenham, M.D. The epistle invites Sydenham to give an account of his views on the treatment of venereal disease: 'Kindly and openly explain the method by which an afflicted patient may be easiest relieved. To suffer at the hands of GOD is enough; no need that the physician torture him as well'.

In 1670, Robert Brady, writing from Gonville and Caius College, of which he was Master, sought the advice of 'the Most Illustrious Doctor Thomas Sydenham M.D.' on the use of bleeding in the treatment of rheumatism. 'Proceed then as you have begun. Scorn the sarcasms of sciolists. Excite the spirits of honest men. It is you who have pointed out the way. Let those who dislike it find a better'.

In all his writings Sydenham emphasized the fundamental importance of knowledge gained by the meticulous observation of the natural history of disease. He rarely mentioned other medical writers with the exception of Hippocrates and was sceptical of traditional theories and practices. In therapeutics however the tyranny of false doctrine (Dodds, 1960) was too strong for him. The humoral theory provided him with the original foundations of his therapeutic practice, but steadily, in the light of experience, he modified his methods and developed a critical empiricism.

Sydenham's philosophy of science was essentially practical; he believed that the function of medical enquiry is directly to prevent, relieve or cure disease. He hoped that a natural classification of diseases would reveal a relatively small number of large classes of diseases, with a single remedy for each class (Yost, 1950). He believed that the important features of morbid states should be observable during life and without artificial aids, such as the microscope. He was therefore convinced that progress could come only 'from diligent observation of natural phenomena'. He was reluctant to admit that even gross anatomy was worthy of study and he had no conception of the value of comparative anatomy or of experimental physiology. It has indeed been claimed (Wolfe, 1961) that the intellectual opposition of Sydenham and Locke to microscopy bears some responsibility for the neglect of the microscope during the eighteenth century.

Sydenham's development of accurate clinical observation and of rational empiricism was a contribution of paramount importance to medical practice. His attitudes to research are those of most empiricists in all ages, and were moreover

* The Sydenham Lecture for 1968 given at Apothecaries' Hall, 24 October 1968.

¹ All dates follow the Gregorian Calendar. The names of Cambridge Colleges are given in their modern form.

coloured by his conviction that God had placed the remote causes of disease beyond human understanding.

Among the small company of physicians who, in his lifetime, shared Sydenham's views and praised his writings (Dewhurst, 1958), Locke, Paman, Brady, Cole, Goodall, Short, Needham and Mapletoft, six were Cambridge graduates and five of these held for a time appointments in their colleges or in the university, which should have enabled them to influence the teaching of medicine. Brady indeed was Regius Professor of Physick from 1677 to 1700. Sydenham dedicated his *Treatise on Gout and Dropsy* to Thomas Short (of St. John's College) and thanked his 'very good and kind friend' John Drake of Christ's College, for the help he had given him in preparing it. It was Gilbert Havers of Trinity College who translated the *Methodus Curandi Febres* into Latin (Dewhurst, 1966) and Mapletoft who translated the *Observationes Medicae*. Sydenham, himself M.B. at Oxford 1648, took the Cambridge M.D. in 1676; his eldest son William had entered Pembroke College in 1674 though he left without taking a degree.

Sydenham's personal associations with Cambridge and the number of influential Cambridge graduates amongst his friends and supporters suggested that a reassessment of the state of medical teaching in Cambridge in the century that followed the Restoration could be of interest. The investigation on which this is a preliminary report was planned as an objective survey of a period in the history of the Cambridge school which historians have tended to disparage.

THE CATEGORIES OF MEDICAL MEN

In these days of increasingly narrow professionalism and of rigid statutory regulation of the right to practice, it is difficult to conceive of an age in which some knowledge of medicine formed part of the general education of a gentleman, and in which he could and often did practise as a physician at least on occasions, without the sanction of university, College or bishop. The diaries and letters of the period provide abundant evidence of the educated man's serious interest in medicine. John Evelyn for example was an enthusiastic and skilful amateur physician (O'Malley, 1968). The clergy, especially in remote rural areas, often practised medicine; for most their practice was no more than a charitable service to their parishioners, offered in the absence of any other medical adviser. In the lives of many clergy, however, medical practice appears to have occupied an important place. Samuel Ward, who had been a medical student at Oxford but had taken no degree in medicine, was Vicar of Stratford-on-Avon from 1662 to 1681. He devoted much of his time to the efficient medical care of his flock and even undertook minor surgery (Power, 1917, 1920). Is such a man to be regarded as a medical practitioner? Among Cambridge graduates in medicine there are many who became incumbents of parishes within a year or two of taking the M.B. or M.D., and spent their lives as country clergy. Did they continue to practise medicine, or was their medical training merely an insurance policy, a wise precaution in an age in which sudden changes in the political or religious climate frequently robbed a man of his College Fellowship or his ecclesiastical benefice? Many clergy who had shown less foresight first turned to the practice of medicine after their ejection. Some returned to take degrees in medicine in their old universities,

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others travelled on the Continent, others became licentiates or extralicensitates of the College of Physicians. But the total number of clergy expelled, particularly in the period between the outbreak of the Civil War and the ejection of the Nonjurors at the time of the Hanoverian succession, was very large and many who subsequently practised medicine certainly had no formal degree or diploma and only chance has determined the survival of the evidence that they practised or of the proficiency with which they did so. Some, like the Rev. Roland Davis, who practised in Great Yarmouth after he had fled from his Irish deanery in 1689, were probably not inferior to their formally-qualified colleagues with whom they appear to have associated freely (Bemrose, 1958).

Numerically still more significant were those men who were not ordained and who spent from three to six years at an English university taking only an arts degree, and then practised medicine. In our period it is easy to find examples at Cambridge of near contemporaries whose formal qualifications differed widely, but all of whom practised medicine. Some took the M.B. of Cambridge, others the M.L., others went into practice with an arts degree or with no Cambridge degree at all. Some of these took the degree of a continental university; far more paid brief visits to the Netherlands, France or Italy but took no medical degree there. Some became licentiates of the College of Physicians in the same year in which their contemporaries took the M.B. Finally there were many who had no use for medical degrees or diplomas of any sort but nevertheless spent their lives in practice, mainly in country towns. It is probable that men in this category were still more numerous than my figures suggest. Our knowledge of their medical activities is often based only on their obituaries or even on their memorial inscriptions. Many were the sons of medical men. We have no reason to believe that they were less effective as practitioners than those who found it expedient to take degrees.

In attempting to assess the contribution of Cambridge to medical teaching between 1660 and 1760 I have given Cambridge the credit for those medical men who appear to have received all or a substantial part of their medical training there, whether or not they were Cambridge graduates in medicine. I have on the other hand excluded those men who, although holding Cambridge medical degrees, had received elsewhere their training in medicine. I have excluded clergy who practised medicine but were not medical graduates unless it was their sole occupation and they had given up their church benefices. Most degrees by incorporation can be excluded, but not all, for some men who spent five years or more in Cambridge, took a foreign M.D., sometimes from a university such as Caen, which gave degrees but did not teach, and subsequently incorporated at Cambridge. Many men with degrees by mandate can also be excluded, but again not all. There are a number of instances, especially in the early years after the Restoration, of men whose political sympathies had prevented them from proceeding to higher degrees during the previous twenty years but who had achieved high standing in the profession. A mandatory letter dated 6 September 1660 and signed by Charles II states 'Whereas the violence of the late commotions hath had soe sad an influence upon Our two Universities that divers scholars of integrity have been hindered in the due way and times of proceeding to their respective Degrees . . .'. This letter put forward the name of Robert Brady amongst others.

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In a final category are those degrees given at Royal Commencements, that is to say in the presence of the king or queen. The lists of these degrees are confusing, for they include many men whose normal graduation happened to coincide with the royal visit, but also include mandatory degrees, among the recipients of which are sometimes noblemen and others who appear to have had no medical interests or associations.

It is clear that the simple enumeration of medical degrees is a relatively meaningless exercise. The tables I have compiled are intended to present a more meaningful picture of Cambridge medicine. In deciding whether or not to accept or to exclude any individual I have been guided by any biographical information available to me. I am well aware of the dangers of what Christopher Hill (1967) has called 'the optical illusions created by the accidental survival of evidence'. Any distortion is likely to have minimized rather than magnified the importance of the medical school's contribution.

SOURCES

The degree lists and Grace Books in the University Archives provide the indispensable final authority against which the accuracy of the familiar secondary sources must be checked. In Venn's *Alumni* there are inexplicable omissions, especially of licences to practise, but occasionally of M.Bs. Venn awards the M.D. of Leyden to some men who were merely entered on the physic line there. Munk in his *Roll of the Royal College of Physicians* presumably accepted licentiates' own claims as to their university degrees, when he attributed to some men an M.B. or M.D. of which the Grace Books have no record. Venn and Munk have nevertheless provided most of the biographical facts. Other sources include the histories and biographical registers of individual colleges, contemporary diaries and the remarkable collection of mandatory letters in the University Archives.

CAMBRIDGE MEDICAL STUDENTS

In Table I are included all those men who, on the evidence available to me, appear to have received all or a substantial part of their medical education in Cambridge. The dates are the actual or, in a few cases, the probable years of admission.* The colleges of eleven men are not recorded in the degree lists. It is interesting to note that a serious decline in numbers did not occur until the fourth decade of the eighteenth century. Of even greater interest is the variation in numbers in individual colleges. St. John's remained the most important medical college throughout the century. Caius and Emmanuel were also important but failed to attract medical students after 1740. Most other colleges for two or more decades attracted a number of medical students which was large in relation to the total entry. Most notable were Christ's from 1660-1700, Corpus Christi and Jesus around the turn of the century, and Pembroke and Trinity somewhat later.

M.B. and M.D. Degrees

Table II shows the bachelors of medicine. The proportion of medical students

* There are gaps in the Admission Books of some colleges. It has been assumed that a man was admitted three years before he took his B.A.

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TABLE 1
MEDICAL STUDENTS

	Christ's	Clare	Corpus	Emma.	Cai.	Jesus	King's	Magd.	Pen.	Peterh.	Queen's	St. Cath.	St. John's	Sidney	Trinity	T.O.	O.	Total
1660-9	14	1	3	3	12	5	2	1	2	1	1	6	17	5	7	0	3	83
1670-9	12	1	1	6	14	4	1	1	3	3	6	7	18	3	6	2	2	90
1680-9	9	1	6	5	20	11	3	3	2	1	8	5	11	6	7	2	2	102
1690-9	10	2	4	6	9	4	2	0	2	2	2	4	14	3	3	2	2	71
1700-9	4	5	4	2	10	7	1	5	4	6	4	5	9	3	11	0	0	80
1710-19	3	7	3	3	8	5	6	4	6	5	3	4	12	6	4	1	2	82
1720-9	8	2	4	7	6	1	3	3	7	3	3	4	13	2	10	0	0	76
1730-9	3	1	1	8	1	3	2	2	2	3	2	1	5	1	0	0	0	35
1740-9	3	1	0	1	2	1	2	1	5	1	1	4	8	2	6	1	0	39
1750-9	1	1	0	1	2	0	3	1	1	1	3	0	5	0	1	0	0	20
TOTAL	67	22	26	42	84	41	25	21	34	26	34	40	112	31	55	8	11	678

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taking this degree rose after 1700. Table III lists all M.D. degrees. Particularly before 1700 the M.D. was often the first qualification in medicine (Table IV).

TABLE II

M.B. CAMBRIDGE

1660 - 9	34 + 2 p.l.r.	1710 - 19	51
1670 - 9	46 + 3 p.l.r.	1720 - 9	67
1680 - 9	74 + 2 p.l.r.	1730 - 9	46
1690 - 9	62 + 2 p.l.r.	1740 - 9	35
1700 - 9	42	1750 - 9	15

TABLE III

M.D. 1660 - 1760

(p.l.r. by Royal Mandate; c.r. in the presence of the King (or Queen))

	Total	p.l.r.	c.r.
1660 - 69	27	32	
1670 - 79	27	11	
1680 - 89	31	22	3
1690 - 99	26	1	
1700 - 09	21		5
1710 - 19	18		10 (William the king was there, Oct. 6 1717)
1720 - 29	29	2	42
1730 - 39	20	5	
1740 - 49	17	1	
1750 - 59	19	4	1

TABLE IV

CAMBRIDGE STUDENTS
M.D. as First Qualification in Medicine

1660 - 9	18	1710 - 19	5
1670 - 9	10	1720 - 9	9
1680 - 9	17	1730 - 9	7
1690 - 9	9	1740 - 9	3
1700 - 9	8	1750 - 9	8

TABLE V

LICENCE TO PRACTISE MEDICINE
(M.L.)

	Total	Previously	B.A. or M.A.
1660 - 69	24		14
1670 - 79	12		8
1680 - 89	8		6
1690 - 99	7		2
1700 - 09	5		0
1710 - 19	4		0
1720 - 27	8		2

Not recorded in Grace Books after 1727.

Licence to Practise Medicine (Table V)

The licence to practise was the equivalent of the M.B. but the candidate was not required to Keep an Act. In the seventeenth century the licence was often taken by men who were already Arts graduates, and many, such as Charles Goodall and

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John Addenbrooke, later proceeded to the M.D. However in some colleges, Fellowships were not open to medical graduates and the licence then provided an acceptable alternative; some men, Addenbrooke for example, proceeded to the M.D. only when they resigned their Fellowships, on leaving Cambridge. The Licence was also taken by some men who took no other degree or diploma; indeed some were apparently not members of colleges. It has been said that many such were local practitioners, but I have been able to confirm this in only a few instances. Unfortunately the M.L. was not recorded in the Grace Books after 1727 although it was certainly conferred, though perhaps less frequently, at least until 1834 (Rolleston, 1932). It was finally abolished in 1859. It is to be hoped that the names of those who received the licence after 1727 can be traced, since its possession labels as an actual or intending practitioner many a man who otherwise appears only as an Arts graduate.

TABLE VI

CAMBRIDGE STUDENTS
First Medical Degree, Diploma or Licence not of Cambridge.

	Total	E.		Oxford	Caen	M.D.		Utrecht	Others
		L.R.C.P.	L.R.C.P.			Padua	Leyden		
1660 - 69	9	1	1	1	1		2	2	1
1670 - 79	7		2	1	1	1	1		1
1680 - 89	14	3	6		1	1	2		1
1690 - 99	5		3				1		1
1700 - 09	4	1	2						1
1710 - 19	6		3				1		2
1720 - 29	5	1	1				1	1	1
1730 - 39	2		1				1		
1740 - 49	2	1					1		
1750 - 59	1								1

Others—Dublin 2, Anjou 1, Edinburgh 1, Montpellier 1, Rheims 1, Aberdeen 1, Lambeth 1, Licence Bp. of Norwich 1.

Medical Degrees not of Cambridge (Table VI)

During the century after 1660 at least fifty-five or about 8 per cent of Cambridge medical students took their first medical degree or diploma elsewhere. Some subsequently took Cambridge degrees by examination or by incorporation. The proportion remains essentially the same throughout the period. A detailed study of Cambridge students at Leyden and Utrecht will be published elsewhere. The influence of the Leyden school was undoubtedly great, but its direct contribution to the teaching of Cambridge students was less significant, for although many Cambridge men were enrolled at Leyden, few spent long there. A visit of a few months at the most, sometimes as part of a medical grand tour, was fashionable and might immediately precede or follow the Cambridge M.B. Many men who did not take a degree spent a short period at Leyden (or, after 1740, at Edinburgh) immediately after leaving Cambridge, and then entered practice. There were of course also Cambridge men who appear to have received the greater part of their medical training in other medical schools, but these have been excluded from the tables.

Migrants from Oxford (Table VII)

Of special interest are the sixty migrants from Oxford. One-third had Oxford

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degrees in Arts and most had spent two or more years at the other university. Some took their medical degrees at Cambridge within a year, but more than 50 per cent spent two or more years at Cambridge. Earlier in the seventeenth century Oxford migrants to Cambridge fled the unwelcome rigour of the Laudian Code,* but both the proportion who were already Arts graduates and the colleges in which most were enrolled after 1660, suggest that some more positive and more creditable attraction may have brought them to Cambridge.

TABLE VII
MIGRANTS FROM OXFORD TO CAMBRIDGE

	Total	Arts Graduates at Oxford	Years at Cambridge before first medical degree		
			1 or under	2	3 or more
1660 - 69	8	4	1	3	4
1670 - 79	6	3	2	1	3
1680 - 89	14	6	7	4	3
1690 - 99	6	2	3	2	1
1700 - 09	9	3	4	2	3
1710 - 19	4	1	3	1	0
1720 - 29	7	0	5	1	1
1730 - 39	4	1	2	1	1
1740 - 49	2	0	2	0	0
1750 - 59	0	0	0	0	0
	60	20	29	15	16

TABLE VIII
CAMBRIDGE GRADUATES

Henry Paman, F.R.C.P., 1626-1695 (St. John's)	Sir Edward Wilmot, F.R.C.P., F.R.S., 1693-1787 (St. John's)
Walter Needham, F.R.C.P., F.R.S., 1631-1691 (Trinity/Queens')	William Oliver, F.R.S., 1695-1764 (Pembroke)
John Mapletoft, F.R.S., 1631-1721 (Trinity)	Thomas Reeve, P.R.C.P., 1700-1780 (Emmanuel)
Thomas Short, F.R.C.P., 1635-1685 (St. John's)	William Battie, P.R.C.P., 1704-1776 (King's)
Sir Robert Tabor, 1642-1681 (St. John's)	Benjamin Hoadley, F.R.C.P., F.R.S., 1706-1757 (Corpus)
William Briggs, 1642-1704 (Corpus)	William Heberden, F.R.C.P., F.R.S., 1710-1801 (St. John's)
Edward Browne, P.R.C.P., 1644-1708 (Trinity)	Richard Davis, F.R.S., c. 1710- (Queens')
Edward Tyson, F.R.C.P., 1650-1708 (Corpus)	Sir Noah Thomas, F.R.C.P., F.R.S., 1720-1792 (St. John's)
Charles Goodall, P.R.C.P., 1652-1712 (Emmanuel)	Anthony Askew, F.R.C.P., F.R.S., 1722-1774 (Emmanuel)
Sir Tancred Robinson, F.R.C.P., F.R.S. c. 1660-1748 (St. John's)	Caleb Hardinge, F.R.S., -1775 (Jesus)
Sir Samuel Garth, 1661-1719 (Peterhouse)	Sir George Baker, P.R.C.P., F.R.S., 1722-1809 (Kings')
Thomas Pellett, P.R.C.P., 1671-1744 (Queens')	Charles Collignon, 1725-1785 (Trinity)
(Stephen Hales, 1677-1761) (Corpus)	Sir Thomas Gisborne, P.R.C.P., F.R.S., c. 1730-1806 (St. John's)
Richard Tyson, P.R.C.P., 1680-1750 (Pembroke)	Richard Warren, F.R.C.P., 1731-1797 (Jesus)
Sir Edward Hulse, F.R.C.P., 1682-1759 (Emmanuel)	Erasmus Darwin, 1731-1802 (St. John's)
James Jurin, F.R.C.P., F.R.S., 1684-1750 (Trinity)	
William Wasey, P.R.C.P., 1691-1757 (Caius)	
Sir William Browne, F.R.S., 1692-1774 (Peterhouse)	

* The Laudian Code required candidates for medical degrees to be graduates in Arts.

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Subsequent Careers

It is largely by a student's later career that the merits of his education must be judged. A detailed study of what is known of the careers of these 678 men must be presented on some other occasion. Table VIII lists some of the more distinguished. It is fair to say that the Cambridge school provided substantial numbers of highly successful and respected physicians, including several of the most important medical investigators. The proportion of medical scientists in the narrow sense of the term was small, but in the first half of the eighteenth century scientific investigation in medicine was at a low ebb in Britain. Many men became physicians to the new hospitals which were being established in London and the larger provincial cities. Even if it is true that their Cambridge degree in itself gave them some advantages the number remains noteworthy. I agree with Robb-Smith (1966) that this notable tradition of clinical practice which Cambridge 'graduates maintained must be a consequence of the pattern of education they received'. Let us look at that pattern.

CAMBRIDGE IN 1660

John Evelyn visited Cambridge in August 1654. He wrote 'but the whole towne is situate in a low dirty unpleasant place, the streets ill paved, the air thicke and infected by the Fennes'. Evelyn's strictures were not undeserved. Cambridge at the end of the century was a small country town, dirty, unlit and unpaved. The population in 1700 was perhaps about 5,500. Visitations of the plague afflicted the town until 1666, smallpox continued to claim its victims throughout the next century, and malaria took its toll. Death whilst still a student was no exceptional occurrence. The shortness and insecurity of life at this period are dramatically illustrated in the records of the Cambridge Parishes of St. Botolph's and Great St. Mary's which Mr. Maurice Newbold and I are at present studying for the light they throw on medical practice. Cambridge was isolated; London was a hard day's journey away and there was no regular public transport. Grain and coal and other supplies were brought to Cambridge by water. The remarkable improvement in road transport during the eighteenth century—there was a daily coach service to London by 1750—profoundly influenced the way of life of Fellows and students. In 1660 students frequently stayed in Cambridge throughout their entire academic career, including the vacations. Many Fellows remained constantly in residence for years on end; they were granted leave of absence for only very short periods unless in exceptional circumstances, and often only on a royal mandate. The records of many colleges confirm the strictness with which residence of Fellows was enforced during the first half of our period. It was during the second half, from 1710 to 1760, that the colleges fought a losing battle against the demands of their Fellows to be allowed to retain their emoluments, whilst they practised their professions elsewhere.

THE SIZE OF THE UNIVERSITY

Despite the disruption of normal activities by the Civil War and by the injustices of political and religious intolerance, the number of students at Cambridge remained high throughout the first half of the seventeenth century. The number of graduates in the years 1625 to 1630 (Roach, 1959) was relatively and absolutely greater than at

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any time until the nineteenth century. In 1622 the university was approximately 3,000 strong; in 1651 about 2,800. These figures probably include college servants. In 1672 the total was 2,522. From 1700 the numbers fell steadily until by 1750 there were only 380 students, and to quote Mansbridge (1923) 'The dons made a society which killed ennui by amours, port and intrigue'. The decline in the number of medical students was relatively smaller and occurred later.

THE UNIVERSITY MEDICAL ESTABLISHMENT

What may be called the university medical establishment consisted only of the Regius Professor of Physic from 1540 until the first professor of anatomy was appointed in 1707. The Linacre Lectureship in Physic was established in 1524, at St. John's College; it had little influence on medical education.

The Regius Professors during our period were Francis Glisson, Robert Brady, Christopher Green and Russell Plumtre. Glisson occupied the chair from 1636 to 1677. During his early years as professor he appears to have performed an annual dissection, but later he was rarely in Cambridge, and although he shares with Sydenham and perhaps Mayerne and Willis the honour of introducing accurate clinical observation to England, his most important work was not carried out in Cambridge. His successor Robert Brady, professor from 1677-1700, was Master of Caius College. The fact that his only contribution to medical literature was the *Epistle to Sydenham*, from which I have quoted, has led medical historians to underestimate his great distinction as a scholar. Brady has recently been described (Pocock, 1950-52) as 'a principal agent in bringing English historical method out of its mediaeval and into its modern period' and as 'a vigorous intellect vehement and active in the issues of the day'. He was moreover a clinician of repute and was one of the physicians present 'at that last and most dismal meeting of physicians' at the deathbed of Charles II in 1684. For a time he was also Member of Parliament for the university, and his manifold activities kept him much away from Cambridge. Of the medical abilities of Christopher Green, Regius Professor from 1700 to 1741, we know very little and of those of Russell Plumtre who followed him from 1741 to 1793 we know even less. I cannot discover that either published anything and it is possible that both, like Edward Waring, M.D., F.R.S., Lucasian Professor of Mathematics 1760 to 1798, considered that their 'profound researches were not adapted to any form of communication by lectures'.

George Rolfe was given the title of professor of anatomy in 1707 but in 1728 was deprived of his office for continued absence. His immediate successor John Morgan probably carried out dissections, but George Cuthbert (1734-5), Robert Banks (1735-46), and William Gibson (1746-53) were absentees.

The accepted assessment of the Cambridge medical school has been based on the evident defects of the leaders of the university medical establishment. It is often forgotten that under the Cambridge system the direct influence of the Regius Professor on teaching was slight. Glisson and Brady delegated their lectures, but they supervised the Acts for degrees, and Edward Browne of Trinity is our witness that Glisson ensured that high standards were maintained. In fact teaching was not regarded as primarily a university responsibility until laboratory teaching was developed in the second half

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of the nineteenth century. The adequacy of the teaching should therefore not be judged on the activities of the Regius Professor.

COLLEGE AND INDEPENDENT TEACHERS

The college and not the university was the student's world. And the quality of the education any man received was the responsibility of his college, in the person of his tutor.

The office of tutor appears in all college statutes after 1551 (Roach, 1959). The duties of a tutor were at first poorly defined and evolved gradually under the influence of the Renaissance ideal of what the education of a gentleman should be. In the seventeenth and early eighteenth centuries each tutor had only a few pupils, who lived close to him, often indeed sharing his room. Although the curriculum had remained essentially unchanged since the Elizabethan Statutes, tutors were at liberty to draw up an individual programme of study for each pupil. Some programmes survive and show, after the late seventeenth century, the growing interest in natural philosophy, and the inclusion in reading lists of the latest works in the physical and biological sciences, including medicine. Most of the lectures attended by any student were given in his own college, and his work was closely supervised by his tutor. He might also attend lectures in his faculty, and in other colleges. The total number of medical students at any one time was small enough for it to be possible for all also to attend dissections in whichever college these were performed. Macalister (1891) reviewed the evidence that dissections were in fact carried out periodically in many colleges when a body was available. Chemistry, botany and comparative anatomy and even physiology were actively studied in various colleges. The work of Stephen Hales and his friends in Corpus Christi is well known, but is not an isolated example. Walter Needham's *Disquisitio anatomica de Formatio Foetu* of 1667 was based on work he had done in Cambridge as a Fellow of Queens'.

From the Restoration onwards a number of men who at least in their early years in Cambridge held no university or college appointments gave regular courses of lectures in anatomy, chemistry or materia medica. Some medical Fellows of colleges gave similar courses. The lectures were open to all who were willing to pay the fees. Surviving attendance lists show that the audience was very mixed; in addition to medical students and local practitioners there were many arts graduates, even professors in other faculties, and some of the local gentry.

It is impossible to compile a complete list of these private courses from the available records, but those of which we have some knowledge suggest that such courses made an important contribution to the medical teaching of the period. John Francis Vigani, born in or near Verona about 1650, began to teach chemistry in Cambridge in 1683. He appears to have given an annual course of twenty-five lectures. The chemistry course, the first to be given in any University in Britain, was concerned mainly with preparations of value in medicine, but Vigani also gave a separate course on materia medica. Vigani continued to lecture in Cambridge until 1708 (Coleby, 1952a). In 1703 the Senate gave him the title of Professor of Chemistry, without emoluments, but he was not a member of any college nor a Cambridge graduate. Vigani's successors as Professor of Chemistry, notably John Mickleburgh, who held the Chair for thirty-

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eight years from 1718, also gave lectures which included materia medica, and which the rolls show to have been attended by medical students as well as local practitioners (Coleby, 1952b).

John Addenbrooke (1680–1719) of St. Catharine's College lectured, probably on materia medica, from 1705 or earlier, until he left Cambridge in 1711. In 1730 Richard Bradley, Professor of Botany, published *A Course of Lectures upon the Materia Medica ancient and modern, read in the Physic Schools at Cambridge upon the Collections of Dr. Attinbroke and Signor Vigani, deposited in Catharine Hall and Queens College*. I do not know for how many years he gave this course: he died in 1732.

William Heberden lectured on materia medica probably from 1734 until he moved to London in 1748. In thirty-one lectures the course ranged from 'The Rise and Progress of the Materia Medica' to advice on the art of prescribing. Heberden also gave another course of lectures, 'An Introduction to the Study of Physic'. Erasmus Darwin's transcript of the lecture notes is in the library of St. John's College. The list of books Heberden recommended is impressive. It covers anatomy and physiology and all branches of clinical medicine. The best authorities are there; Harvey, Willis, Glisson and Malpighi, Lower, Havers and Tyson. The books classified as 'practical works' include Boerhaave, Floyer, Turner, Ramazzini and, of course, Sydenham. There is no record of how often Heberden gave this course, but notes of his lectures certainly circulated for many years. Heberden's pupils included Baker, Battie, Glynn and Gisborne. Robert Glynn of King's College, who spent the greater part of his long life (1719–1800) in Cambridge, gave private courses on 'The Medical Institutions' for a number of years around 1750. He may indeed have taken over directly from Heberden. In March 1751 he offered a course 'On the Animal Oeconomy, On the Operations of Medicine and On the History of Diseases'. In 1752 he was lecturing on 'The Structure and Use of the Principal Organs of the Human Body'.

Of other private lectures in anatomy during our period we have less information and it is often indirect. As early as 1692 private anatomy lectures were being given by an Italian, of whom I know nothing else. George Rolfe, who was one of the early private teachers of anatomy in London, also gave private courses in Cambridge for some years before he was given the title of Professor of Anatomy in 1707. Official recognition appears to have discouraged him, for in 1728 he was deprived of his chair for neglect of his duties. Perhaps there was too much competition: James Keill also lectured on anatomy in Cambridge and in Oxford for some years during the first two decades of the century. Keill obtained his Cambridge M.D. at a Royal Commencement in 1705 and was elected F.R.S. in 1712; he died in 1719. Keill was incidentally an outspoken critic of Sydenham's attitude to anatomy. In his *Essay on Several Parts of the Animal Oeconomy* he protested against the rejection of anatomy on the grounds that nature is incomprehensible. 'This sort of Discourse', he wrote, 'is the Refuge of Idleness and Ignorance'.

William Battie (1704–1776) of King's College, known for his contributions to psychiatry, and subsequently President of the Royal College of Physicians, certainly lectured on anatomy between 1730 and 1737; Horace Walpole attended his lectures. For some years around 1740 Francis Sandys, who practised as a surgeon in Cambridge and later in Potton, taught anatomy at Cambridge. His preparations were acquired

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Whether clinical medicine was taught I do not know. It was, however, customary for medical Fellows to practise from their college rooms until well into the nineteenth century. Addenbrooke, Heberden, Battie and Glynn certainly did so. Since each college had at any one time so few medical students it would not have been impossible for them to accompany the physicians on their visits. I have no evidence that they did so, but if they did not, it is difficult to explain where men of such distinction as clinicians as Heberden learned their skill. For Heberden is only one of many Cambridge physicians who appear to have obtained all their medical training in Cambridge.

The suggestion that medical teaching in our period must be evaluated primarily in terms of what each college offered and that university and private lectures merely supplemented college teaching, must obviously be supported by a detailed study of each college as a medical teaching unit. I have so far investigated fully only a small number of colleges, but the evidence strongly supports this conclusion. Table I shows the variation in the number of medical students admitted to each college. These variations often become even more striking when considered in relation to the total admissions to each college in the same decade. For example the annual total of admissions to Christ's College in the 1670s averaged 36.5, but by 1690 had dropped to 18.9. During the whole century migrations from one college to another were relatively frequent. There are numerous possible reasons for migration; the chance of obtaining a scholarship, better accommodation, or even the reputation of the cook, were no doubt often factors influencing such a move. However medical students in each decade tended to migrate to the college where there were medical Fellows of some reputation. To my knowledge we have proof that such an attraction motivated a migration only in the case of Cox Macro (1683–1767) who migrated in 1702 from Jesus to Christ's that he might study with two 'egregii Medicinae Doctores' (Peile, 1900).

Time will not allow me to discuss every college individually. Christ's, to which I have already referred, may serve as one example. Between 1660 and 1702 Christ's admitted at least forty-five men who studied medicine, including two migrants from other Cambridge colleges and two from Oxford. John Covel (1638–1722), Master from 1688 to 1722, had studied physic before he took orders. The medical Fellows during the period include Daniel Malden and John Carr. Carr, a Fellow from 1662–75, is of special importance, for he is known to have been an active teacher. He acted as deputy to Glisson, whom he hoped to succeed as Regius Professor. The only other medical Fellow during our whole period was Thomas Hobart (Fellow 1699–1728). During his later years as a Fellow he was frequently absent travelling as a private tutor, and during these years there were few medical students at Christ's.

Most of these forty-five men entering Christ's between 1660 and 1700 became physicians in provincial towns, and most are not known to have attended any other university in Britain or on the continent. After 1700 there were proportionately fewer medical admissions to Christ's, but they included two men whose later careers were of some interest. William Rutty (1687–1730), admitted in 1705, resided for five years and took his M.B. He is not known to have studied elsewhere. He was elected F.R.C.P. in 1720 and became Secretary of the Royal Society in 1727. Ambrose Dawson was

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admitted in 1724. He resided for six years and is not known to have studied elsewhere. From 1745–60 he was Physician to St. George's Hospital.

This pattern is repeated in the records of other colleges. The periods when medical students were proportionately most numerous were the periods when the Fellows of the college included one or more physicians of repute. In general the decades in which there were few or no medical students were those in which the college had few or no medical Fellows and was ineffective as a teaching unit. Occasional students who spent their undergraduate years in a college in which there appears at that time to have been no medical activity, and who later achieved some distinction, must be presumed to have attended teaching in other colleges and private courses. According to his dates Ambrose Dawson, for example, may well have been a pupil of Heberden.

Heberden's own college, St. John's, provides a further example of particular interest to us today. Sydenham's friend Henry Paman was a Fellow from 1647 to 1695. The medical Fellows in unbroken succession were men of ability (Table IX), and the College attracted many medical students throughout the whole of our period. Heberden was the product of his college rather than of the university.

TABLE IX

ST. JOHN'S COLLEGE MEDICAL FELLOWS

Henry Paman	1647–1695	John Hope	1689–1700
Matthew Robinson	1650–1671	Richard Wilmot	1698–1701
Pierce Brackenbury	1656–1692	Edmund Waller	1705–1745
Martin Lister	1660–	Richard Wilkins	1717–1723
Edward Stillingfleet	1683–	(Sir) Edward Wilmot	c. 1718–1725
Roger Kenyon	1687–1713	William Heberden	1730–1748

CONCLUSIONS

The available evidence is plentiful but incomplete. Although tentative conclusions may be drawn which do not conflict with any established fact, it is essential to bear in mind that there are large gaps in our knowledge.

From 1660 to 1760 the medical student at Cambridge could, if he wished, receive an education of an acceptable and even at times of a high standard, though after 1730 it required considerable individual initiative to do so. However the facilities were there for those who wished to take advantage of them, or whose tutors ensured that they did so.

The college was the essential teaching unit and the reputation of the Fellows determined a student's choice of college and the quality of the supervision and encouragement he received. We have seen that Brady in his capacity as Regius Professor made little direct contribution to medical teaching at Cambridge, but his reputation as a physician is said to have attracted Thomas Dover, and therefore presumably other medical students to his college. The deficiencies of the medical establishment of the university were to some extent made good by courses offered by private teachers, some of them men of great distinction. It is interesting to recall that the development of private schools in London began at about the same period. It is possible that some clinical teaching was given in Cambridge in that students may have accompanied physicians on their visits as Sydenham's pupils accompanied him,



Figure 1.

Robert Brady, Regius Professor of Physic, 1677-1700. Copy by Daniel de Coning, 1720. Original artist unknown. *By kind permission of the Master and Fellows of Gonville and Caius College.*

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but of this there is no certain evidence. What is certain is that the education provided in Cambridge was the only formal teaching received by many men who later became leaders of the profession as clinicians or scientists.

Cambridge had no hospital until 1766, but until the middle of the eighteenth century bedside teaching in hospital was not regarded as an essential part of a medical training and even in Edinburgh was not introduced until 1756. It is interesting that it is only after this date that visits to Edinburgh by Cambridge students became frequent. In London hospitals regular clinical teaching appears to have been introduced by Addison and Bright and it gained acceptance only slowly; at St. Bartholomew's Hospital there was very little even in 1834 (Rolleston, 1939).

After 1730 medicine in Cambridge shared in the general decline of both the older universities. The reasons for this half-century of apathy and indolence have been freely discussed by many historians who have not arrived at any undisputed conclusions. For once neither religious strife nor financial stringency can be blamed. Isaac Newton himself, as early as 1685, had failed to establish a Philosophical Society in Cambridge, for as he wrote 'that which chiefly disht the business was the want of persons willing to try experiments' (Gunther, 1937). Immense potential was there but it came to little. It has often been suggested that the development of the medical school would have been very different had Heberden been appointed Regius Professor in 1741. It is impossible for anyone familiar with the Cambridge scene in the second half of the eighteenth century to believe that any man, however great, could have influenced the climate of opinion in the university as a whole.

It was however largely due to Heberden's pupils that the medical school did not die completely even at the worst period. The university medical establishment was moribund but a few men in certain colleges kept the spark alive and some of their pupils in turn brought distinction to British medicine. It was not until the third decade of the nineteenth century that what I have called the medical establishment of the university was stirred into activity and slowly took over from the colleges the responsibility for medical education, that the medical school as a whole moved into one of its greatest and most productive periods.

Did Sydenham influence medical teaching in Cambridge? Certainly Heberden's approach to medicine derived much from Sydenham's example. In his lectures at St. John's, Heberden referred to 'the admired Sydenham, whose merit is that he is an original one—giving only what himself had observed of diseases and in doing this is judged to come nearer to the true idea of a practical writer than most other authors, as he has mixed but little of hypothesis or speculation with what he says, being generally content with relating an exact history of the rise and progress of the disease and that method of treating the patient which was found most effectual in conducting him easily to a speedy recovery'.*

* From Erasmus Darwin's notes, St. John's College Library.

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