

## SIR BUSICK HARWOOD: A REAPPRAISAL

by

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### ABSTRACT

SIR BUSICK HARWOOD was Professor of Anatomy in the University of Cambridge from 1785 to 1814 and simultaneously Downing Professor of Medicine from 1800 to 1814. Some historical accounts suggest that he was not highly regarded either as a scientist or a teacher, and this note attempts to restore his academic reputation and show how his achievements helped to initiate improvements in medical education at that time.

### BIOGRAPHICAL SUMMARY

Busick Harwood was born at Newmarket about 1745, the second of three sons of John Harwood. The eldest son held an official appointment in India and the youngest became a merchant at King's Lynn, afterwards removing to Ely. Busick Harwood was apprenticed to an apothecary, but after a few years, following some disagreement with his master, he went to London, where he qualified as a surgeon. He then joined his eldest brother in India. While serving in the Indian Medical Service, he had opportunities of increasing his medical and surgical knowledge and of exercising his undoubted talents. On one occasion, he successfully treated a nabob who had been wounded in the eye, for which he received a considerable sum of money. Gunning said that, when an undergraduate, he often heard Harwood describe operations he had performed upon wealthy natives who "paid him with princely liberality and desired to maintain him in their service".<sup>1</sup> Although he was very successful in India, the conditions there impaired his health. He returned to England in 1778 and entered Christ's College, Cambridge, as a Fellow Commoner. There, he became popular and entertained lavishly, giving dinners to the senior members of the University and wine parties for the undergraduates. According to Gunning, "He was a considerable wit, according to the fashion of those days, but such as would not be tolerated at the present time".<sup>2</sup>

In 1784, he was elected a Fellow of the Royal Society and the following year he submitted a thesis for the MB degree on the subject of blood transfusion (see below). On 1 October 1785, Charles Collignon,<sup>3</sup> Professor of Anatomy in the University of Cam-

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<sup>1</sup> H. Gunning, *Reminiscences of the University, town and county of Cambridge from the year 1780*, London, George Bell, 1855, vol. 1, p. 48.

<sup>2</sup> *Ibid.*, vol. 1, p. 42. See also, Bernard Towers, 'Anatomy and physiology in Cambridge before 1850', in Arthur Rook (editor), *Cambridge and its contribution to medicine*, London, Wellcome Institute for the History of Medicine, 1971, pp. 65–67, 68–69, 72–77, and figs. 3 and 4.

<sup>3</sup> Arthur Rook, 'Charles Collignon (1725–85): Cambridge physician, anatomist, and moralist', *Med. Hist.*, 1979, 23: 339–345.

bridge, died and Harwood was appointed as his successor. Gunning claimed that Mr Ainslie of Pembroke College, a Senior Wrangler, would have been a candidate for the Chair if Harwood's friends had not brought on the election unexpectedly.<sup>4</sup> This statement is only a half-truth. An advertisement of Collignon's lectures on anatomy in the *Cambridge Chronicle* for 1785 shows that Harwood was acting as his assistant, and I have no doubt that he had more experience than Ainslie and that his friends knew this.

Harwood moved to Emmanuel College about 1790, although he remained on good terms with the members of Christ's, and out of term dined there three or four days a week. Such migrations were relatively frequent at that time. The reason he gave for moving to Emmanuel was that he was able to obtain more accommodation as well as a large garden, but Gunning believed that there were political motives. Harwood, along with other members of Christ's College, had been a strong supporter of the Whigs, but, realizing that Pitt's influence in the University was increasing, he decided it was politic to attach himself to a college where Pitt was supported. Further, Dr Farmer, Master of Emmanuel, was a man after his own heart, loving tobacco and cheerful conversation, so Harwood spent many evenings in the Emmanuel Parlour.

His friends looked upon Harwood as a confirmed bachelor because he was in "the habit of speaking of the married state in strong terms of reprobation".<sup>5</sup> It was, therefore, a great surprise when during dinner at Christ's he suddenly said, "I am going to do a devilish foolish thing, I am going to get married". In the Combination Room afterwards, he told the Fellows that the lady was Miss Peschell, the only daughter of Sir John Peschell, Bart. Although Harwood's acquaintances knew that the lady was not wealthy, they suspected a mercenary motive behind the engagement. Gunning surmised that, as both Harwood and Miss Peschell were favourites of Dr Glynn,<sup>6</sup> an old, wealthy medical practitioner in the town, they hoped to be beneficiaries in his will.<sup>7</sup> They were married at St Botolph's church by the Master of Pembroke College on 21 July 1798, and Dr Glynn gave the bride away. On his death in 1800, Glynn left them £100 each.

Harwood had purchased a house adjoining the Emmanuel garden. In term-time, the Harwoods usually entertained to dinner half a dozen friends, whom the Professor happened to meet during his morning walk. The dinner was served at 2 o'clock; it was plain and there was no great consumption of wine, for it was usual for his guests to accompany him to his afternoon lecture at 4 o'clock.

In 1800, Harwood became the first Downing Professor of Medicine, an appointment he held simultaneously with the Professorship of Anatomy. He was knighted in 1806, and died in 1814.

#### HARWOOD AS PROFESSOR OF ANATOMY

In the eighteenth century, there was no proper system of medical instruction in Cambridge. "The superintendence of the medical faculty was entirely entrusted to the

<sup>4</sup> Gunning, *op. cit.*, note 1 above, vol. 2, p. 91.

<sup>5</sup> *Ibid.*, vol. 2, p. 90.

<sup>6</sup> Arthur Rook, 'Robert Glynn (1719–1800), physician at Cambridge', *Med. Hist.*, 1969, 8: 251–259.

<sup>7</sup> Gunning, *op. cit.*, note 1 above, vol. 2, p. 91.

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Regius Professor of Physic, who presided at the medical disputations in the Schools and whose certificate of competency and a compliance with the suitable forms, were the only conditions required by the Senate for admission to a medical degree.”<sup>8</sup> The Regius Professor gave no lectures, and there were few candidates for medical degrees.

Before about 1770, the Professors of Anatomy and Chemistry received no remuneration except fees; they were then given a royal, later a parliamentary, grant of £100 a year, provided that they lectured.<sup>9</sup> A proposal by Harwood to compel medical students to attend lectures in anatomy was thrown out by the Senate.

Harwood’s predecessor, Charles Collignon, gave a course of twenty-eight lectures in which, he said, he combined with anatomy “a mixture of physiology which, properly interspersed, greatly relieves the nauseous satiety of bare descriptions”. Macalister concluded, on the evidence of Collignon’s published introductory lecture, that “his lectures must have been uncomfortably dull for his class, which probably was a very small one”,<sup>10</sup> but Duncan, a contemporary, declared, “the lectures were much esteemed by all his pupils”.<sup>11</sup>

Harwood was Professor of Anatomy from 1785 to 1814. On his appointment, he announced that his lectures would be on anatomy and physiology and that they would be given during the Lent Term at 3 p.m., Mondays to Fridays. In 1788, he stated that the latter part of the course would be on comparative anatomy. Other changes, in the time, the date of commencement, and the subject matter of the lectures, were made from year to year,<sup>12</sup> until about 1796, when they comprised a Course of Lectures on Human and Comparative Anatomy and Physiology; later still (1807), they became a Course of Lectures on Comparative Anatomy and the Natural History of Animals; and finally (1812), one on the Philosophy of Natural History and Comparative Anatomy. From teaching human anatomy as a technical subject for medical students, Harwood was gradually led to teach it as a branch of biology.

His lectures were given in the Old Anatomy Schools, opposite Queens’ College. In 1786, a grant of £200 was made from the University Chest for the refitting and extending of the Professor of Anatomy’s room. There were no medical lectures at Cambridge except Harwood’s, which were addressed to a miscellaneous audience because there were few medical students and it was not uncommon for laymen to attend.

In 1756, Charles Collignon had published a *Compendium anatomico-medicum* of his lectures. Harwood found this insufficient for the purposes of his enlarged course, so he published in 1792 *A synopsis of a course of lectures on anatomy and physiology*,<sup>13</sup> dedicated to his friend Richard Farmer, DD, Master of Emmanuel College and University Librarian. In the Introduction, Harwood said that, as far as he knew, it was the first attempt to collect and arrange the principal facts and new discoveries in anatomy. The synopsis begins with the history of anatomy and then

<sup>8</sup> G. Peacock, *Life of Thomas Young*, London, 1855, p. 120. See also, Arthur Rook, ‘Medical education 1600–1800’, in Rook (editor), *op. cit.*, note 2 above, pp. 49–63.

<sup>9</sup> D. A. Winstanley, *Unreformed Cambridge*, Cambridge University Press, 1935, p. 154.

<sup>10</sup> A. Macalister, *The history of the study of anatomy at Cambridge*, Cambridge University Press, 1891.

<sup>11</sup> A. Duncan, *Medical commentaries*, 1786, 10: 332 (Cambridge University Library).

<sup>12</sup> R. T. Gunther, *Early science in Cambridge*, Oxford University Press, 1937, pp. 307–308.

<sup>13</sup> B. Harwood, *A synopsis of a course of lectures on anatomy and physiology*, 3rd ed., Cambridge, 1792 (Cambridge University Library, d 792.6).

covers all the main areas of topographical anatomy, with relevant accounts of the physiological processes. The last thirteen pages are concerned with comparative anatomy, and at the end there is a catalogue of the bones and muscles. At least three editions were published.

The synopsis is sufficiently detailed to allow some conclusions to be reached. The course was a broad one and by no means confined to anatomy; much physiology and pathology were taught, and there were incursions into materia medica and forensic medicine. It must have formed a good introduction to medicine. I recently obtained an interleaved copy of the third edition in which a student has written notes in a very fine copperplate hand. Like many students' notes, they are more detailed at the beginning than at the end of the course, but the fact that they occur throughout shows that a full course of lectures was given. The more detailed notes show that Harwood clothed the bare bones of the *Synopsis* from his own experience; we know that he had a large collection of specimens with which to illustrate them (see below).

Harwood's teaching was up-to-date. We do not know who taught him surgery in London, but his references to the work of John Hunter, Hewson, and Sheldon show that he was influenced by the Windmill Street School of Anatomists.<sup>14</sup> In discussing blood, he referred to the "theories of Leuwenhoeck, Hewson and others"; on respiration, to "Priestley's theory and experiments"; on digestion, to the "experiments of Reamur, Spallanzani and others"; on vesical calculus, to the "experiments of Hales and others"; and also to the then very recent work of Scheele, and so on.<sup>15</sup>

Harwood was interested in blood transfusion, the subject of his MB thesis in 1785. He subsequently performed many experiments in private and as demonstrations in his public lectures, but, unfortunately, he did not publish any account of his work. There are, however, several sources of information about it. In the first volume of the abridged *Philosophical Transactions of the Royal Society*, published in 1809, there is an editorial footnote to a paper of Oldenburg's in which some of Harwood's experiments are described,<sup>16</sup> and there are notes on his lecture on blood transfusion in the student's work previously referred to.

Blood transfusion had been performed from animal to animal and from sheep to man in the seventeenth century, but the operation had fallen into disrepute and experimental work had ceased.<sup>17</sup> In his lectures, Harwood said: "a very violent opposition was made by the Popish priests against its introduction who thought the soul would by this means be contaminated and that the qualities of the animal from which the blood was taken would be ingrafted into the person to whom it was given. But now that this prejudice has subsided the principal reason why this experiment has not been frequently tried is the supposed difficulty of performing it." Harwood devised his own very simple method, using two silver tubes that fitted into each other; the tube which was fastened into the recipient's vein had a turncock to control the flow of the blood.

<sup>14</sup> Stewart Gray Thomson, 'The great Windmill Street School', *Bull. Hist. Med.*, 1942, 12: 377–391. *William Hunter's lectures on anatomy* [notes by Charles White], Amsterdam, Elsevier, 1972. (See also note 26 below.)

<sup>15</sup> Harwood, *op. cit.*, note 13 above.

<sup>16</sup> *Phil. Trans. R. Soc. Lond.*, 1809, no. 28, p. 517.

<sup>17</sup> A. D. Farr, 'The first human blood transfusion', *Med. Hist.*, 1980, 24: 143–162; A. Rupert Hall and Marie Boas Hall, 'The first human blood transfusion: priority disputes', *ibid.*, 461–465.

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In his early experiments Harwood transfused various quantities of blood (average about eight ounces) from the carotid artery of sheep to the jugular vein of dogs. The dogs suffered from immediate uneasiness and the following day from shivering, heat and thirst, and the usual symptoms of fever, but recovered. These symptoms we now know to be due to incompatibility. Harwood noticed that they were "more or less violent in proportion to the quantity of *arterial* blood introduced into the vein of the recipient animal", and thought that they might probably arise from the preternatural degree of stimulus occasioned by the introduction of highly oxygenated blood into the right side of the heart, so he repeated the experiments, transfusing from vein to vein and found that the animals did not suffer any subsequent inconvenience. The following is the report of such an experiment:

All the blood of a pointer was let out (as far as it was possible to evacuate it) till the animal was in convulsions on the table, and apparently expiring. The blood was then transfused from the jugular vein of a sheep into the correspondent vein of the dog, and in less than half a minute after the introduction of the tube, he began to respire, and as soon as he had received a quantity of sheep's blood equal to what he had lost of his own, he leaped from the table and walked home, without experiencing any apparent inconvenience either then or at any subsequent period. This experiment was performed before a very crowded meeting at the public schools in the Botanic Garden of the University. It has been frequently repeated since, and a variety of other animals have been subjected to the same experiments and with equal success.<sup>18</sup>

Not all his experiments in vein-to-vein transfusion passed without the production of symptoms. The student's notes inform us that Harwood "weighs the animal before and after and thus informs himself how much blood it is proper to transfuse. By mistake he once gave a dog one-fifth above his usual quantity of blood, the dog immediately shewed his uneasiness, soon after disburdened itself by vomit, stool and urine, then had shivering fits and fever till at last he discharged in the 3 ways just mentioned a considerable quantity of blood which immediately recovered him and he lived a long time afterwards; but till he discharged this blood he refused all nutriment whatever." This experiment led Harwood to make further transfusions of "a praeternatural quantity of blood" with the production of, in some, death from asphyxia and, in others, severe symptoms such as described above with recovery later.

As a result of his numerous experiments, he stated in his lectures "that whenever a patient is in so weak and languid a state for want of blood that no other process with which we are acquainted can possibly save his life, it is the duty of the surgeon to have recourse to this as if tried, there will be some chance, and if not no possibility of recovery".<sup>19</sup> He must be given credit for having discarded the belief that blood contained a vital essence and could be used for the purpose of rejuvenation or the treatment of senility or insanity and for expressing the modern view of the therapeutic value of transfusion. In the *Philosophical Transactions*,<sup>20</sup> he related its use to the emergency of acute blood loss, asking "In cases therefore of such copious evacuation of blood as to threaten the death of the patient, would not transfusion be expedient? And if death should be inevitable without it, does it not become a duty to make the trial?" Although he expressed a modern view, his belief that the blood of dissimilar

<sup>18</sup> Student's notes in Harwood, op. cit., note 13 above.

<sup>19</sup> Ibid.

<sup>20</sup> Loc. cit., note 16 above.

animals could be used for transfusion meant that his suggestions could not be safely put into practice.<sup>21</sup>

Harwood was also engaged “in a course of experiments to ascertain whether diseases may be communicated, or medicines conveyed into the system, by the transfusion of diseased or medicated blood from one animal to another”. Although some authorities denied that blood was the seat of any diseases, he expressed the contrary opinion. He proposed to test whether noxious substances could be communicated by transfusion of blood by salivating an animal with mercury and observing the effect of transfusing its blood to a healthy animal.

At that time, it was the general belief that if even a small amount of air entered the blood, death ensued, but, “having inadvertently allowed air enclosed in the tube to enter the veins of the animal which received the transfused blood and having found no harm result from it [I] suspected the truth of the report”, and Harwood and Dr Davis “introduced into a dog’s veins an inch of a column of air from a tube an inch in diameter and the dog appeared as well as ever”.<sup>22</sup> He also introduced milk and oil with no bad consequences, but when he introduced two drams of quicksilver into the jugular vein of a dog “in two hours he [the dog] began to be uneasy, in 2 more breathed with difficulty and 2 more could not lie down and his breathing resembled the whistling of a bird; on the next morning he vomited about a pint of saliva and was then perfectly recovered.” Four years afterwards the dog was still alive.

In the seventeenth and eighteenth centuries, great advances were made in practical anatomy that had a profound influence on the teaching of anatomy and allied subjects. These advances were mainly concerned with the preservation of bodies for dissection, with the injection of blood vessels, and the making of permanent preparations that could be used for demonstrations. Methods of preserving the body had been known for centuries but bodies so preserved were not suitable for dissection and the preparation of permanent specimens (except osteological ones) was not possible. The introduction of the use of alcohol made prolonged dissection and the preparation of permanent specimens possible. The use of spirit of wine was first suggested by Robert Boyle in the following words: “Nor were it amiss that diligent tryal were made what use might be made of spirit of wine for the preservation of a humane body: for this liquor being very limpid, and not greasy, leaves a clear prospect of the bodies immersed in it; and though other sharp things commonly employ’d to preserve flesh are wont to do, yet it hath a notable balsamik faculty, and powerfully resists putrefaction, not only in living bodies but also in dead ones.”<sup>23</sup>

The new methods enabled specimens to be collected by many natural scientists. Some of them were physicians of very catholic tastes; often their collections did not reflect their professional activities but rather their hobbies and other intellectual

<sup>21</sup> The first person to suggest that the accidents that sometimes followed transfusion of sheep’s blood into dogs might be due to incompatibility was a Dr Leacock of Barbados. He made the suggestion to Dr James Blundell of Guy’s Hospital, who, on 26 September 1818, with the help of Mr Cline, performed the first transfusion from man to man (J. Blundell, ‘Some account of a case of obstinate vomiting’, *Med.-chir. Trans.*, 1919, 10: 296–311; Farr, *op. cit.*, note 17 above, p. 151).

<sup>22</sup> Student’s notes in Harwood, *op. cit.*, note 13 above.

<sup>23</sup> R. T. Gunther, *Early science in Oxford*, 15 vols., Oxford, [for the Subscribers], 1923–67, vol. 3: *Biological sciences*, p. 104.

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interests. For example, the physician John Woodward (1665–1728) made a collection of geological and archaeological specimens.<sup>24</sup> On his death, the latter were sold, but the minerals and fossils that he had bequeathed to the University of Cambridge formed the nucleus of future collections there. One of the most important museums containing medical specimens was that of Ruysch,<sup>25</sup> whose vast and varied collection included more than 1300 preparations in spirit. The teaching and collections of William and John Hunter also became famous.<sup>26</sup> Their example stimulated others to form collections, and the possession of a museum of specimens soon became indispensable for any teacher of anatomy.

When Harwood became Professor of Anatomy (1785), there were, no doubt, some osteological specimens and probably some dried ones that had been used by his predecessors, but he was the first Cambridge teacher to make a collection of spirit specimens prepared by the new methods. In 1803, he published *A descriptive catalogue of preparations in spirits in the anatomical museum*, which described 297 of his specimens. At the end, there is the following note: "To be continued as soon as the copy can be got ready". Also described in the catalogue were a number of interesting specimens that had come from Mr Sheldon's collection, including three (numbers 113, 114, and 115) preparations of the lacteals, which "are figured and described in his [Sheldon's] ingenious [*sic*] treatise on the absorbent system".

Harwood employed all the available methods in the preparation of his specimens: they were dissected to show special features; many were injected to show the distribution of vessels, the colours of the injection masses employed being red, green, and yellow; quicksilver was also used, and some were finely injected with "a subtile injection", probably coloured size. Many of the injected specimens were preserved in oil of turpentine to render them transparent. Other methods employed were maceration and decalcification. On Harwood's death, the University purchased his collection for £360 and it formed the foundation of the anatomical museum used for teaching purposes throughout the nineteenth century.

Harwood started to write *A system of comparative anatomy and physiology*, but only one volume was published (1796). This deals mainly with the olfactory organs. Macalister said, "It is a matter of regret that the project fell through, for the part of the work issued shows originality and erudition, and is beautifully illustrated".<sup>27</sup> The book is based on the dissection of a large number of animals of considerable variety. The twenty-five engraved plates by themselves testify to the industry and skill of Harwood and his assistants. The book was translated and published in Germany in

<sup>24</sup> For details of Woodward's collection see Joseph M. Levine, *Dr Woodward's shield*, Berkeley, Los Angeles, and London, University of California Press, 1977, pp. 93–113; see also, V. A. Eyles, 'John Woodward, FRS, FRCP, MD (1665–1728): a bio-bibliographical account of his life and work', *J. Soc. Bibliog. Nat. Hist.*, 1971, 5: 399–427.

<sup>25</sup> Gunter Mann, 'The anatomical collection of Frederik Ruysch at Leningrad', *Bull. Clev. med. Libr.*, 1964, 11 (1): 10–13; J. H. Appleby, 'Ivan the Terrible to Peter the Great: British formative influence on Russia's medico-apothecary system', *Med. Hist.*, 1983, 27: 289–304, see p. 303.

<sup>26</sup> Sir Ernest Finch, 'The influence of the Hunters on medical education', *Ann. R. Coll. Surg. Eng.*, 1957, 20: 205–248; Jessie Dobson, 'Curiosities of natural history as illustrated in John Hunter's museum', *ibid.*, 1970, 47: 233–242; John R. Teacher, *Catalogue of the anatomical and pathological preparations of Dr. William Hunter in the Hunterian Museum*, University of Glasgow, 2 vols., Glasgow, MacLehose, 1922.

<sup>27</sup> Macalister, *op. cit.*, note 10 above.

1798 by C. R. W. Wiedemann, and was well received there.

Harwood considered the brain as “the receptacle of sensation and the instrument of thought” and the nerves as “the means by which its sensations are produced”. He said,

Imagination, assuming the office of Reason, would willingly assign a peculiar use to every part, and pronounce one to be the residence, or rather the instrument of memory, another of abstraction, a third of volition, but how sensations are carried or modified by the nerves is hopeless to discover although a gleam of light in the midst of this darkness seemed to break upon us from the experiments of Galvani and Valli on animal electricity, but . . . we seem to have advanced no farther than to make it probable that the nervous fluid, or energy, is considerably influenced by electricity or something like it. With respect to the nervous energy itself, we are still in the dark.

Since dissection of the brain had revealed little about its intimate structure and the way in which it works, he felt that some insight into it might be obtained by a study of comparative anatomy, particularly of the organs of sense. He said his aim was to give “a short account of the Brain and its functions; a more elaborate discussion of the organs of sense connected with it; a general description of their structure; and lastly, such remarks and observations as are the result of physiological reasoning upon their comparative anatomy and the peculiar advantages which evidently arise from their variety in the different classes of animals.”

In describing human olfactory organs, Harwood gave reasons for believing that the sense of smell is located in a small area of the membrane lining the anterior nares, a fact we now know to be true, but it was contrary to the current belief. He also rejected the view that the sinus cavities in some way reinforced the sense of smell and said that their function was to improve the tone of voice and to produce a lubricating fluid for the internal nares to protect the extremities of the olfactory nerves against dryness and “the acrimony of many volatile substances”.

Throughout the book, he tried to relate structure to function, comparing the habits of life of various animals with the structure of their olfactory organs. Broadly speaking, he believed that carnivores require a greater sense of smell than herbivores, and that this is reflected in the greater complexity of the olfactory bones and in the distribution and size of the olfactory nerve and the auxiliary nerves (branches of the fifth nerve).

There are many footnotes to the text, some of which help to conjure up a picture of a man with a very active mind noticing the little incidents of everyday life that might throw some light on his more serious studies. For example, he said that in granivorous birds the olfactory nerves are extremely small, “and as the natural food of the tribe has but little odour, we find them easily deceived by anything which bears a resemblance to it”. In a footnote he said,

While the author was writing these remarks, some poultry, which were usually fed with a mixture of barley meal and water, were found to have swallowed nearly the whole contents of a large pot of white paint. Two of them died, and two others became paralytic. The crops of the latter were opened and considerably more than a pound of the pernicious mineral composition taken from each. The crops, either naturally, or from the saturnine quality of the paint, had very little sensibility; the wounds were sewed up and both of them recovered.

A footnote to a paragraph in which he referred to the delight of cats in the scent of certain plants such as valerian and catmint is more intriguing: “The females have not



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by any means the same avidity for them as the males have. Out of fourteen cats, caught in a trap baited with valerian, only one was a female.”

DOWNING PROFESSOR OF MEDICINE

Harwood became Downing Professor of Medicine in 1800 when, after protracted legal problems, the new Downing College at last received its Royal Charter. Francis Annesley, a relative of Sir George Downing, had already been appointed Master, and Edward Christian became Downing Professor of the Laws of England. These two new Chairs gave encouragement to medical and legal studies in the University. It was hoped that the Professor of Medicine would supply teaching which was not provided by the Regius Professor of Physic, and there was a particular need in the Law School for teaching on the laws of England. In 1806, the two professors received their first payments and prepared their lectures. The *Cambridge Chronicle* for 19 April 1806 announced: “On Monday next, 21st instant, the Downing Professor of Physick will commence a Course of Lectures to members of the University on DOMESTIC MEDICINE.” The lectures were given on weekdays at 12.15 in the Anatomical Schools.

The following year, Harwood published *A plan of a course of lectures on domestic medicine*. It is a small pamphlet of twelve pages. From it we learn that the lectures were “calculated for the purpose of conveying useful instruction to those members of the University whose residence in the country may be so situated, as to render it difficult or impossible to obtain immediate advice in cases of emergency or danger”. At that time, there was a great need for educating the public in general medical matters. In 1769, Dr William Buchan had tried to meet this need in his book on *Domestic medicine*, which ran through many editions.<sup>28</sup>

Harwood’s plan gives a good idea of his course of lectures. He introduced them by giving an account of the diseases to which the poor are most liable and of their prevention and treatment, of the duty of magistrates and parish officers towards the poor, and of workhouses, hospitals, dispensaries, etc. He also described the formation of a medicine chest.

In the following lectures, he described the symptoms, treatment and management, and prognosis of many common diseases, together with as much anatomy and physiology as seemed necessary to convey a clear understanding of them. Beginning with fevers, he followed with diseases of the chest, the abdominal viscera, and kidneys; then gout and rheumatism, dropsies, ascites, anasarca, etc.; then syphilis, the bites of mad animals, suspended animation, and herniae; concluding with first aid treatment for wounds and fractures.

One disease deserves a little more comment. After describing the various aspects of smallpox and the treatment of persons undergoing inoculation, he went on to discuss cowpox and vaccination, comparing “the advantages and disadvantages of these two species of inoculation” and discussing “the arguments made use of in favour of vaccination, and the objections of those who argue against this mode of prevention”.

<sup>28</sup> W. Buchan, *Domestic medicine*, Edinburgh, 1769. See also, C. J. Lawrence, ‘William Buchan: medicine laid open’, *Med. Hist.*, 1975, 19: 20–35; C. E. Rosenberg, ‘Medical text and social context: explaining William Buchan’s *Domestic medicine*’, *Bull. Hist. Med.*, 1983, 57: 22–42.

Inoculation had been introduced into this country by Timoni in 1714; it was popularized by Lady Mary Wortley Montague in 1721 and its practice had become widespread.<sup>29</sup> It was customary for people undergoing inoculation to reside in an inoculator's house,<sup>30</sup> or, occasionally, a whole community was inoculated. The following advertisements from the *Cambridge Chronicle* for 1785 are typical:

*Inoculation* still carried on by Wm Martin, Sen, at Old Hall in Much Hadham, Hertfordshire, who for these 19 years last, has inoculated four thousand seven hundred and upwards, with the loss of one person only; he finds all necessaries, tea, coffee, chocolate and sheets, and sends them away fit for any place amongst fresh people.

Baldock, Aug. 29th 1785

Whereas a general inoculation of the SMALL POX took place in this Town in the latter end of May last; we the Churchwardens and overseers of the poor of the said town, do hereby certify that we have caused strict enquiry to be made from house to house throughout the town, and there is not any person now ill with that disorder, and therefore that this town is absolutely free from the same.

And we, the Surgeons and Apothecaries in the said town, do hereby declare that we have not any patient now ill with the Small Pox in this town, either in the natural way, or by inoculation; and that we believe the said town now is, and for sometime hath been, entirely free from the said disorder, and from every danger of infection upon that account

Stephen Petchett }  
James Tebram } Churchwardens

Robert Barnby }  
Thomas Merry } Surgeons  
Geo Hicks }

John Williamson }  
William Penn } Overseers

Inoculation with smallpox carried many severe risks and it was made illegal in 1840. Jenner had performed his first vaccination with cowpox lymph in May 1796 and published *An inquiry into the causes and effects of variolae vaccinae* . . . in 1798. It is of interest that Harwood was discussing the pros and cons of the two methods before a lay audience only five years later.

In 1812, Harwood published *A synopsis of a course of lectures on the philosophy of natural history and the comparative structure of plants and animals*. The first part, divided into seventeen sections, consists of a general review of the animal and vegetable kingdoms in which he discussed the analogies between them and compared their structure and the function of their different parts. The second part, divided into twenty-three sections, is on the comparative anatomy of man and animals. The whole course was treated on a very broad basis, exhibiting a wide knowledge of plants and animals and of the relevant literature. Harwood had a set of incubated eggs "to show the progressive changes which take place during incubation from the first twenty-four hours to the exclusion of the chicken on the twenty-second day". In the lecture on the chyle, he "exhibited the lacteals filled with Chyle and passing over the mesentery of an animal recently killed". He referred to his own discoveries on the difference between the valve of the colon in the monkey and man and to "curious peculiarities in the structure of the eye of the Dragon Fly".

## CONCLUSION

This note is confined to describing Harwood's achievements as Professor of

<sup>29</sup> Peter Razzell, *The conquest of smallpox*, Firlie, Sussex, Caliban Books, 1977.

<sup>30</sup> David van Zwanenberg. 'The Suttons and the business of inoculation', *Med. Hist.*, 1979, 22: 71-82.

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Anatomy and Downing Professor of Medicine. I have done this because I think the opinions expressed by Winstanley<sup>31</sup> and Langdon-Brown,<sup>32</sup> based largely upon Gunning, do not do justice to Harwood. Harwood was undoubtedly a colourful and convivial Cambridge character and, though not without opponents and detractors, “a popular member of academic society and considered good company”. These attributes, combined with his evident academic scholarship, must have made him a most interesting and stimulating member of the University.

<sup>31</sup> “Neither Collignon nor Harwood knew enough about the subject [anatomy] to teach it effectively . . . . All we know of Harwood suggests that he was a third rate scientist.” (Winstanley, *op. cit.*, note 9 above, p. 154.)

<sup>32</sup> Sir Walter Langdon-Brown, *Some chapters in Cambridge medical history*, Cambridge University Press, 1946.