A HISTORY OF NITROUS OXIDE AND OXYGEN ANAESTHESIA
IVC: HENRY HILL HICKMAN IN HIS TIME

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Previous verdicts on Hickman set the scene. The genealogy of Hickman and his wife is explored, disclosing the identities of "Poor Mrs Dudley of Shut End" and "Thomas Dudley of Kingswinford". Some previous evidence is explained by the bankruptcy of Hickman's father-in-law. The dubious means whereby Hickman qualified prematurely are examined.

Long after Hickman's time various authors recorded verdicts on the man and his work, for example:

"he...sacrificed his career and gave his life..." (Thompson, 1912).

"It is extremely difficult to appraise justly the work of Henry Hill Hickman, even to evaluate the man himself. Undoubtedly was it the great Principle—anaesthesia—for which his propaganda stood, as it was the developments of this Principle which made for the aftermath—Anaesthesia as we know it today. Hickman is the central figure, around him gradually have become grouped those things which have grown up in modern anaesthesia." (Buxton, 1930.)

"The memorials of Hickman are few.... Unrecognised in his lifetime, Henry Hill Hickman waited in Bromfield churchyard a century until Anaesthesia claimed him as her apostle." (Robinson, 1946.)

"In 1824 Hickman unequivocally formulated the principle of general surgical anaesthesia by the inhalation of a gas... Hickman no doubt lacked both the force of character to compel the interest of others and the self assurance which would have led him unhesitatingly to risk human life in order to prove his theory. He also lacked the spirit of self seeking which, had he been a man of less integrity, might have led him to exploit his discovery for personal gain." (Duncum, 1947.)

"His portrait... shows us a remarkably handsome young man with a kindly, perhaps rather weak, face..."

"The valuation of Hickman's work must rely not upon what he may have done, but upon what he is known to have done.

"Surely his meaning is clear... insensibility was to be produced by the introduction of certain gases into the human lungs to the point of suspended animation or asphyxia..."

"His glory lies in the idea that lay behind his work." (Cartwright, 1952.)

"... for pure originality of thought Hickman stands supreme. He alone conceived the idea without external stimulus of any kind. The amount of work he did was large considering his short life and his commitments as a general practitioner... he did enough... to put him right at the top of the list, in spite of the fact that his work did not lead directly to any practical results." (Sykes, 1960.)

"In 1824, Hickman published A Letter on Suspended Animation, in which he advocated anaesthesia with carbon dioxide and, in 1828, he applied through King Charles X, to the Royal Academy of Medicine of France. Hickman's proposal received no support, which was probably as well, since his method of anaesthesia was indubitably dangerous." (Davison, 1965.)

"Hickman's starting point was the pain and suffering associated with surgical operations. He was motivated by a desire to prevent this rather than by considerations of prestige or commerce. It occurred to him that the state of 'suspended animation' might afford relief. He experimented with animals and performed amputations upon them, apparently without causing pain and with complete recovery. He sought openly the co-operation of scientists and his medical brethren, but they failed him... On present evidence one cannot infer that he attributed the effects of carbon dioxide inhalation to any particular mechanism, nor can one exclude the..."
possibility that he thought that carbonic acid gas had some specific action of its own. ... He came near to the discovery of clinical anaesthesia, but he did not influence its development.” (Smith, 1966.)

“To foist a word he did not know on Hickman” (i.e. anaesthesia), “whether we attach to it his concepts or our own, will not be helpful. But if we choose to say, with Hickman’s greatest admirers, that he ‘discovered’ anaesthesia, the statement is not devoid of meaning. Columbus discovered America but thought he had penetrated to the Orient. The important difference is this: that America when once discovered by Columbus was never mislaid again. If the grown dog of Hickman’s fifth experiment was anaesthetised and not asphyxiated, then Hickman was the far-wandering Leif Ericson of our history of anaesthesia. Probably the best candidate for the role of Christopher Columbus is W. T. G. Morton.” (Stevenson, 1975.)

Buxton’s difficulty in evaluating Hickman is understandable. Had he known the evidence now presented he might have been even more perplexed.

**Henry Hill Hickman**

Hickman was small in stature. The dimensions of his waistcoat (fig. 1) suggest a man of little more than 5 feet in height. There are no known medical relatives in his pedigree (fig. 2). His parents married in the parish of Culmington in March, 1792, and their first child, Benjamin, was baptized in the neighbouring parish of Stanton Lacey 1 month later.* The next child died young and all the rest were baptized in Bromfield, indeed Hickman’s family appears to have been well established in Bromfield for several generations. Henry was a seventh child (and so was the only other Henry in the pedigree—a great uncle). His father farmed the 318-acre Lady Halton from 1795 to 1829. The Ludlow Race Course is nearby and surviving hand bills show that the Clerk of the Course was a John Hickman in 1809, and a J. Hickman in 1799 and in 1818 (fig. 3). In 1818 the steward was T. A. Knight, jr, Esq. (It was to T. A. Knight that Hickman addressed his pamphlet on Suspended Animation.) A Benjamin Hickman was steward in 1833.

There is no direct evidence of Henry Hickman’s siblings apart from a letter written by Blanche Thompson, his grand-daughter (filed at the Wellcome Institute for the History of Medicine) which recalls a visit to his younger brother, Richard, at his farm Bosbury Court near Worcester, when she was 17 years old. She wrote: “They were a jolly family and would turn out to meet whenever the hounds were anywhere near, old and young in red jackets ... most of the boy cousins had their own hunters.”

* Perhaps he was the Benjamin Hickman of Hickman & Weaver, King St, Ludlow, Linen and Woolen Drapers (Pigot’s Shropshire Directory, 1822–23).
FIG. 2. Henry Hill Hickman's pedigree (derived from records printed by the Shropshire Parish Record Society. In the main this was researched by Mr G. B. Devey. Gaps were filled by Mrs F. S. Robinson and Mrs Philippa Gray researched the Bourlay pedigree, only part of which is shown here).
1821) mentioned that “... there is much business done in bread flour, which is sent to the populous towns of Wolverhampton, Kidderminster, Stourbridge and Birmingham.” Pig-iron also used to be transported in the same direction from Bringewood Forge, near Downton, which had flourished in the hands of T. A. Knight’s grandfather, Richard Knight (Beesly, 1958).

Eliza Hannah Gardner

In 1821, Hickman married Eliza Hannah Gardner at Leigh (on the south bank of the river Teme, just before it flows into the river Severn below Worcester). Part of her pedigree is shown in figure 4. Aunt Deakin (fig. 5) witnessed the marriage of Henry and Eliza. Eliza’s aunt Jane married an Edward Hickman. Edward Hickman has been identified in a well-authenticated pedigree published by Reade (1906) which, together with supplementary data on a Freer family, has been used in preparing figure 6. Reade’s Hickmans lived at Oldswinford near Stourbridge. Edward was baptized nearby at Sedgley and five of his children were baptized there.

Hickmans of Oldswinford, medical practitioners and George Freer

Apart from Henry’s marriage to Eliza, no obvious family connection has been found between the Hickmans of Oldswinford and those of Bromfield, but it is noteworthy that the medical profession is well
Fig. 4. Eliza Hannah Gardner's pedigree (derived from the Will of an aunt (Mrs Deakin), from documents at the Worcester Record Office (705:550, BA 4600, parcel 537) and from Bishop's transcripts of parish registers. Aunt Deakin's Will recorded that Jane and Edward moved to Much Birch near Hereford and Edward was buried there in 1851. These facts and other evidence identify him as an Edward Hickman in a well-authenticated pedigree published by Reade (1906).

Fig. 6. Pedigree showing relationship of Edward Hickman, husband of Jane Gardner, to the Freer family, and his position in Reade's (1906) pedigree of Oldswinford Hickmans. (Information on the Freer family has also been provided by Mr H. J. Haden and Dr M. V. Herbert; see WRO 705:260, BA 4000, parcel 5.) William Webb Hickman of Stourbridge was granted his Licentiate-shipt of the Society of Apothecaries on April 18, 1822. He had been apprenticed to William Henry Freer for 5 years and had attended the City Dispensary as Physician Pupil (Guildhall Library MS 8241).
representing in the Oldswinford pedigree (figure 6; see also Haden, 1966). Of particular interest is the marriage of Edward’s sister, Anna Maria, to surgeon Leacroft Freer. His nephew, George Freer of Birmingham, graduated B.A. in 1819 and B.MED. OXFORD in 1822. Allowing for the intervening years, his signature on a deed of 1827 matches that immediately below the signature of Henry Hill Hickman (fig. 7) when they subscribed to the Laws of the Royal Medical Society, Edinburgh, in 1819. This may be more than coincidence.

Mrs Eliza Catherine Gardner and the Dudley family

The baptism of Henry Hill and Eliza Hickman’s first child, Elizabeth Catherine, was registered in the parish of Stanford Bishop on December 1, 1824. Apart from the spelling of Gardiner instead of Gardner, the register also appeared to record the death of Hickman’s mother-in-law on the previous day, but it was difficult to check this without knowing her maiden name and her place of birth. There was a clue. In a letter to her daughter dated October 13, 1823, she mentioned that “...poor Mrs Dudley of Shut End died last week. I wish you to put on slight mourning ... Mrs D. was a most worthy woman and the Dudley family are some of the nearest relatives I have on my mother’s side.” (Smith, 1970b.) Following this up eventually led to the identification of Thomas Dudley of Kingswinford who wrote to the Lancet about Hickman in 1847 (Dudley, 1847a, b).

Mrs Atkins, archivist at Dudley, alerted to this problem, noticed coincident references to Dudleys and to Eliza Catherine Mee of Kingswinford among title deeds which were being catalogued.* It was then found that Miss Mee was baptized in the neighbouring parish of Himley on March 2, 1779, and that she was married there to Benjamin Gardner on June 11, 1801.

Thomas Dudley of Kingswinford

From the documents at Dudley, from published pedigrees (Salt, 1889; Underhill, 1942) and from supplementary data extracted from parish registers by Mr H. J. Haden, it has been possible to construct the pedigree shown in figure 8. “Poor Mrs Dudley of Shut End”, is identified as Elizabeth, daughter of Rev. Thomas Bree and husband of Thomas Dudley. Thompson (1912), Wellcome Historical Medical Museum (1930), Cartwright (1952) and Smith (1970b) have referred to Dr Thomas Dudley of Kingswinford who drew attention to Hickman’s experiments in a letter to the Lancet of 1847. Thomas Dudley of Kingswinford was the grandson of “Poor Mrs Dudley”. He was not a doctor and he never signed himself as such. Born on January 18 and baptized on January 20, 1805, he was 5 years Hickman’s junior. He went to Trinity College, Oxford (matriculated October 22, 1823), and graduated B.A. in 1827 and M.A. in 1831. According to Perkins (1905) he was one of the original trustees of the Kingswinford Savings Bank which was formed around 1830 and he was actuary for the bank in 1850. His place was eventually taken by his cousin, Edwin Dudley. A copy of the Rules and Regulations of the Savings Bank, dated 1834, is in the Stourbridge District Library and this shows Thomas Dudley as treasurer (D. Hickman, librarian, Stourbridge District Library, personal communication, 1977).

* These related to property in Kingswinford and elsewhere which was purchased by the Ward family, mainly in the 1820’s. Kingswinford lies immediately to the north of Oldswinford.

Fig. 7. The signature (top) of George Freer as it appeared subscribing to the Laws of the Royal Medical Society, Edinburgh, in 1819 (see Smith, 1970a, figure 6), superimposed on a deed of 1827, his signature on which is indicated (WRO 705:260, BA 4000, parcel 5).
Fig. 8. Simplified pedigree showing relationship between Hickman's mother-in-law, Mrs Dudley of Shut End, and Thomas Dudley of Kingswinford (for further details see Salt, 1889 and Underhill, 1942).
Fox and Hill

A deed of 1806 at Dudley, concerning conveyance of land to Edward Hickman, involved Benjamin and Eliza Gardner and Patience Mee. Among the witnesses was Elizabeth Fox. In a letter that Henry wrote from Edinburgh to Eliza at Leigh Court in 1819, he added the postscript: “Remember me to Miss Fox.” (Smith, 1970b.) That she may have been the same person is a possibility. Another witness was Thomas Hill.

Cotheridge and Leigh Court

A deed of 1813 referred to Benjamin Gardner as “late of Cotheridge now of Leigh Court”. (Cotheridge Lower Court (fig. 9) and Leigh Court (fig. 10) stand almost opposite each other, respectively north and south of the river Teme, about 5 miles west of Worcester.) Lists of subscribers to the Worcester Infirmary (WRO 1016:6, BA 5161, parcels 14 and 15) confirm that Benjamin Gardner was at Cotheridge from 1802 to 1807 and at Leigh Court from 1811 to 1817. Mrs Gardner’s letter to Eliza of October 13, 1823: “We have been expecting Henry at Cotheridge ever since last Friday week and are wondering what can have prevented him; but I hope he has some profitable employment at home.” (Smith, 1970b.)

Bankruptcy

Other deeds at Dudley, dated between 1821 and 1826, concern conveyances necessitated by the bankruptcy of Benjamin Gardner. The bankruptcy was announced in the London Gazette of October 16, 1821, 5 months after the marriage of Henry and Eliza. It is little wonder that Mrs Gardner began her letter to Eliza of October 13, 1823: “We have been expecting Henry at Cotheridge ever since last Friday week and are wondering what can have prevented him; but I hope he has some profitable employment at home.” (Smith, 1970b.)

Hickman, his in-laws and Thomas Dudley of Kingswinford

Unfortunately, many of these documents at Dudley are attested copies, so original signatures cannot be inspected. The signatures of Benjamin and Eliza Catherine Gardner, and of Thomas and of the Rev.
Edward Dudley would have appeared regularly. Thomas Dudley was almost certainly Thomas Dudley of Kingswinford's grandfather who died in 1825 aged 77 years. The name does not appear on a deed of 1826. The Rev. Edward Dudley would have been Thomas Dudley of Kingswinford's father.

Doubtless there were encounters between the Gardners and the Dudleys while Hickman was actively pursuing his ideas on suspended animation, when opportunities for the Gardners to discuss their son-in-law would have occurred. The idea of painless surgical operations may well have caught the imagination of the young Thomas Dudley who went up to Oxford in 1823.

The Hyde

The above deed of 1826 refers to "Benjamin Gardner the elder of Cotheridge" and to "Benjamin Gardner the younger of The Hyde in the Parish of Stanford Bishop and eldest son and heir at law of Eliza Catherine the late wife of said Benjamin Gardner the elder deceased (late Eliza Catherine Mee Spinster)". Witnesses included Richard Badham, attorney, Bromyard; and Stephen Godson, attorney, Worcester. Apart from neatly confirming all the above hard won conclusions about the identity and death of Hickman's mother-in-law, and the identity of The Hyde, this throws more light on Mrs Gardner's letter of 1823 to her daughter:

"Ben came here last Wednesday week and stayed till last Tuesday. He met Mr Godson on the Monday at the Badham's when everything was arranged for us to have The Hyde. Ben is to be Tenant. Mr Godson behaved very well. He and Mr Badham consulted together about the . . . ing property and they agreed to my dividing it with the creditors. Mr Godson said he wishes to avoid all Law Suits, and he should recommend the Creditors coming into the terms proposed and he had no doubt but they would do so. I rather think The Hyde will be given up to us. I have begun packing up, as I have a good deal to do I must get on with a little every day. I forgot to tell you that Mr Badham has promised Ben if the Business is not quite settled with Mr Dixon by the time we are to go to The Hyde he will advance him some money to begin with."

Specific mention of getting on "with a little every day" may relate to Mrs Gardner's already failing health. The disruption of the bankruptcy and the moves first to Cotheridge and then to The Hyde may have imposed an intolerable strain. Stresses and
anxieties associated with her daughter’s first labour may have been the last straw.

"Hyde" is a fairly common name in the region. If further evidence is required that it was The Hyde 2½ miles south of Bromyard (fig. 11) to which the Gardners moved, it is available in deeds held by Mr E. B. Walker, to whom I am indebted for access.

“All that capital messuage a Dwelling house with outbuildings Garden and other appurtenances thereto belonging . . . by the name of The Hide . . . all which . . . contain in the whole by admeasurement one hundred and two acres two roods and twenty nine perches . . . were heretofore in the holding of Benjamin Gardner since of Benjamin Gardner the younger . . .”

**Qualification**

The earliest published regulations for the M.R.C.S. examination were printed at the end of the list of members in 1821, the year after Hickman qualified. They required candidates to produce certificates of 5 years of apprenticeship, of regular attendance at surgical and anatomical lectures and courses of dissection, of one year’s attendance at one of 11 specified hospitals, and of being 22 years of age. Hickman was born on January 27, 1800, and admitted as a Member of the Royal College of Surgeons on May 5, 1820, so he was 21 months under age.

Unfortunately the Royal College of Surgeons has no record of certificates inspected before 1821, although a register was kept from 1821 onwards. Enquiry of the 11 approved hospitals has not revealed where Hickman “walked the wards”, although records of medical students of this period have not survived at all of them. The *Minute Book of the Royal Infirmary of Edinburgh*, however, has two relevant entries (Ser. 1, vol. 8, p. 94 and vol. 9, p. 238—Mrs P. M. Eaves Walton, Archivist, Royal Infirmary of Edinburgh and Associated Hospitals; personal communication, 1977). The first, dated June 3, 1816, relates to the need to purchase a ticket for attendance in the hospital:

“No student who has not previously taken a Ticket for Ordinary attendance in the Infirmary can, on any pretence whatever, have the privilege to hear the Medical Prescriptions, or Clinical Lectures, or attend Operations, Dissections, or the like in the Hospital.

N.B. The Fee for an annual Ticket is £5.5.– for a perpetual Ticket £12.12.–.”

The second entry implies that tickets were misused as certificates in London. In 1821 the President of the Royal College of Surgeons in London asked the Royal Infirmary of Edinburgh to adopt

“some regulations by which it might be ascertained that students who took out tickets of attendance upon the House attended the whole course, or that the particular period during which they did attend might appear in the certificate granted to them.”

There was a saving clause in the M.R.C.S. regulations which allowed literal interpretation of the Rules to be waived, but there is no note of this against Hickman’s name, and record has been kept in at least some other instances (E. Cornelius, Librarian, Royal College of Surgeons of England; personal communication, 1977).

In ordinances of 1814 it is stated that “No person shall be admitted to an examination . . . without producing to the Court, a Certificate, or other satisfactory Proof, of his being not under 22 years of age,” and in the next paragraph the possibility of this being waived was confirmed, provided that the candidate was “not under twenty-one years of age.” (Cornelius, 1977.) At best Hickman was still 9 months under age.

![Fig. 11. The Hyde, near Bromyard.](image)
It is not known what certificates or proofs were submitted by Hickman, or on his behalf. It is not credible that they were submitted in ignorance of the facts or in ignorance of the regulations. The inescapable conclusion is that he knowingly entered for the examination under false pretences with regard to his age.

Hickman matriculated on November 1, 1819, and he was entered as a student of Edinburgh University for the session 1819–20. He subscribed to the Laws of the Royal Medical Society on November 19, 1819. It seems improbable that he would have attended one of the 11 approved hospitals before matriculation. It would have been impossible for him to have done so for a whole year between November 1819 and May 1820. The likely explanation is that he knowingly misused his ticket for attendance in the Infirmary at Edinburgh as a certificate of 1 year’s attendance.

Before judging Hickman for these presumed false statements, allowance should be made for the standards which were accepted in his day. The tightening up of regulations in London and Edinburgh, and the growing movement for reform in medical education, imply that irregularities were more commonplace than they could be in today’s environment. According to Sprigge (1899):

“There were in those days no formal signatures required to testify that a man had duly heard a certain number of lectures or had been in the wards a certain length of time. There were no precautions taken against personation at the examinations, a thing which occurred frequently, and little attempt was made to gauge a candidate’s knowledge before turning him loose upon the public with a licence. Testimony to certain apprenticeship and to the payment of fees for certain lectures and for the privilege of attending the practice of a hospital had to be forthcoming, and the rest was plain sailing... The London medical students of 1815, when Thomas Wakley threw his lot in with them, were very much as Dickens drew them in Mr Pickwick’s time, and the conditions under which student life was passed were responsible for much of the wildness and irregularity.”

Hickman’s presumed lapses might also be viewed against the effect that they might have had upon his subsequent skill as a medical practitioner. In those days the main core of training was provided by apprenticeship. It is not known to whom or where Hickman was apprenticed, or the calibre of the practice which provided the foundation of his medical education. (His name does not appear in the lists of apprentices held at the Royal College of Surgeons.) One view of the training that he may have missed is provided by Sprigge’s (1899) description of the state of affairs in London when Thomas Wakley, founder of the Lancet, went there in 1815:

“He found that although he was allowed to do his part to pay his fees and attend his classes—the authorities were not prepared to do their part by him. The lectures advertised were not delivered by the eminent people who received the fees, but by their demonstrators; the one great practical help to the acquisition of a sound knowledge of pathology, presence at post-mortem examinations, could only be secured by the clandestine feering of the post-mortem room porters; the honorary staff from whose lips he was to learn the science of healing were capricious in their visits and were generally dumb upon the occasions when they put in an appearance; the list of operations was not published to the students, and only the favoured pupils of the staff knew what was going to be done by the great men and when.”

Hickman married 1 year after obtaining his M.R.C.S. Wedding notices in the Shrewsbury Chronicle and in the Worcester Journal displayed M.D. after his name, to which he was certainly not entitled (except possibly as a courtesy title), but there is no means of knowing whether this was done with his connivance.

(To be continued. Acknowledgements and list of references will appear at the end of the third instalment, Part IV E, August issue)

SUMARIO
Como fondo se presentan los veredictos anteriores sobre Hickman. Se investiga la genealogía de Hickman y su esposa, dando a conocer las identidades de "Poor Mrs Dudley of Shut End" y "Thomas Dudley of Kingswinford". Se explica cierta evidencia anterior mediante la bancarrota del suegro de Hickman. Se examinan los dudosos medios de los que se valió Hickman para graduarse prematuramente.

UNA HISTORIA DE LA ANESTESIA DE OXIDO NITROSO Y OXIGENO. IVC: HENRY HILL HICKMAN EN SU TIEMPO