

Texts and Documents

Evidence-Based Medicine in the Eighteenth Century: The Ingen Housz–Jenner Correspondence Revisited

NORMAN BEALE and ELAINE BEALE*

Preamble

There should be good reasons to re-publish literature, to rewrite history, and among the best is the discovery of new documentation. During recent efforts to find and collate all the surviving original documents of and pertaining to Dr Jan Ingen Housz (1730–1799), we were fortunate to discover previously unpublished letters—the “fourth” and “sixth” letters, below.¹ They belong in the sequence first presented as a significant correspondence in 1838 by John Baron² and reappraised by Peter Van der Pas in 1964.³ It relates to Jenner’s privately published description, in September 1798, of his studies and experiments on cowpox and its apparent power to protect people against smallpox.⁴ This paper, universally known as the *Inquiry*, was a milestone in the history of medicine and is seen by many as the very genesis of immunology. So important is it that any related correspondence must be equally significant. The discovery of the unpublished letters and other insights gained from our researches on Ingen Housz have prompted this article. It adds considerably, we believe, to that of Peter Van der Pas to whom we are personally obliged.

Besides the privilege of introducing new material we aim, first, to replace all the letters between the two men into their correct sequence (not alternating as previously assumed); second, to interpret each letter in relation to Jenner’s *Inquiry*, an early example of “ordered experience”,⁵ of evidence-based medicine; third, to illustrate, once again, the equal importance of inspiration, perspiration, perseverance, luck and stubborn conviction in scientific advance.

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¹ A letter from Jan Ingen Housz to Edward Jenner (1749–1823) dated Wandsworth, 20 Dec. 1798 and an autographed but undated lower half of an earlier letter from Jenner to Ingen Housz. Both are held in the Gemeentearchief, Breda, see notes 63 and 69 below.

² J Baron, *The life of Edward Jenner, M.D., LL.D., F.R.S.*, 2 vols, London, Henry Colburn, 1838, vol. 1, pp. 289–301.

³ P Van der Pas, ‘The Ingenhousz–Jenner correspondence’, *Janus*, 1964, **51**: 202–20.

⁴ E Jenner, *An inquiry into the causes and effects of the variolae vaccinae*, London, Sampson Low, 1798.

⁵ U Tröhler, ‘“To improve the evidence of medicine”: the 18th century British origins of a critical approach’, Edinburgh, Royal College of Physicians of Edinburgh, 2000, p. 1.

Dr Jan Ingen Housz, MD, FRS

After a decade as a general practitioner in Breda, where he had been born in 1730, Ingen Housz came to England in 1764⁶ and learned the technique, as then practised, of smallpox inoculation,⁷ skills that were to take him to Vienna to serve the Habsburgs.⁸ He paid two subsequent visits to England—in 1771, when he was admitted as Fellow of the Royal Society,⁹ and in 1778/9 when he performed his famous experiments proving the importance of sunlight in photosynthesis, and published his findings in his pivotal book.¹⁰ As Jenner's *Inquiry* was being published, in September 1798, Ingen Housz was once more in London, effectively an exile. Officially still personal physician to the Austrian royal household at Vienna, he had been stranded in England for nearly nine years. He had been in Paris in 1789. On the storming of the Bastille and the bloodshed of 14 July, he had fled to London with his manservant, Dominique Tede, and a few personal possessions. He was jaundiced and in considerable pain from gall-stones, a bladder stone, and gout.¹¹ His substantial wealth, invested in various enterprises across Europe, was doomed by the economic collapse inflicted by the anarchy in France. But Ingen Housz himself recovered; so well that by Wednesday 4 November he was dining at Lansdowne House,¹² at table with the first Marquis of Lansdowne and Jeremy Bentham,¹³ among others. Supported by a generous pension awarded by a grateful Maria Theresa for safely variolating some of her children and grandchildren, he reconstructed, in England, his former life in Vienna and Paris; that of physician emeritus, experimental scientist, free-lance academic and government adviser.¹⁴

We have to imagine, then, a popular and remarkable man nearing, by 1798, the end of his seventh decade. He had earned a considerable and justifiable reputation for intellect and languages, for classical knowledge and sound judgement. He also had a gift for original discoveries and ingenious experimentation, and his many publications were well respected. He had, by all reports, an attractive personality and, through Lord Lansdowne, was introduced to the Whig aristocracy of the late eighteenth century, becoming a welcome guest at their houses. But at Bowood House in Wiltshire he was a considerable favourite. No summer sojourn of the 1790s was considered complete, by the party, until the arrival of the “doctor”—“There is no peace at Bowood for want of your presence”.¹⁵ But Ingen Housz knew that his good fortune, his very success in life, had resulted from his undoubted

⁶Royal Society of London, Journal Book (Copy), vol. 25 (1763–6), p. 324. Ingen Housz is introduced as a guest for the first time on 15 Nov. 1764.

⁷We shall refer, subsequently, to “smallpox inoculation” as “variolaion”, i.e. the insertion, through a scratch or other superficial skin puncture, of live or dried smallpox serum. This is the only practical way of avoiding confusion with Jenner's introduction of inoculation using cowpox serum—“vaccination”. The possibilities of ambiguity are otherwise rife even though neither term had been coined at the time of this correspondence.

⁸J Wiesner, *Jan Ingen-Housz: sein Leben und sein Wirken als Naturforscher und arzt*, Vienna, Konegen, 1905, pp. 22, 23.

⁹Royal Society of London, Certificates of Election III, 1769.

¹⁰J Ingen-Housz, *Experiments upon vegetables*, London, P Elmsley & H Payne, 1779.

¹¹Letter from Jan Ingen Housz to William Falconer, MD, Senior Physician, Bath Hospital, 25 Nov. 1791. Published in W Falconer, *An account of the efficacy of the aqua mephitica alkalina*, London, Cadell, 1792, pp. 132–48, on p. 140.

¹²Lansdowne House dinner guests book, Jan. 1788–June 1792: The Bowood House archives.

¹³Jeremy Bentham (1748–1832) English philosopher, jurist and social reformer.

¹⁴N Beale, E Beale, *Who was Ingen Housz, anyway?*, Calne, Calne Town Council, 1999.

¹⁵First Marquis of Lansdowne, Bowood, letter to Jan Ingen Housz, 7 Sept. 1792. Gemeentearchief, Breda, IV, 16A, 13.

skill as a safe variolator. It was in 1768 that he had been the obvious candidate to go to Vienna to treat the Austrian royal family.¹⁶ The Habsburg dynasty, it is not an exaggeration to say, was preserved by Ingen Housz from further ravages by smallpox.¹⁷ And, thanks to the advocacy and instruction of Ingen Housz and some of his contemporaries, variolation was being widely practised across Europe by the late 1790s. Deaths from smallpox had been significantly reduced.¹⁸ When Ingen Housz first read his edition of Jenner's *Inquiry*, he must have viewed it as a serious threat to the established success of variolation and as having the potential to reverse the downward trends in smallpox mortality. Not surprisingly, he grasped the opportunities offered by a country vacation to investigate Jenner's propositions.

Edward Jenner, MD, FRS

Jenner was born in 1749, the eighth child of the Reverend Stephen Jenner, Vicar of Berkeley in Gloucestershire. Before he was six years old, Edward was orphaned, responsibility for him falling to his oldest brother and to an aunt.¹⁹ His primary education over, he was apprenticed to Daniel Ludlow, a surgeon at Sodbury near Bristol, the intention being that he would practise medicine as a surgeon-apothecary, what we would now call a general practitioner.²⁰ Then, in 1770, he moved to London to extend his medical studies at St George's Hospital. He boarded at the house of his teacher, John Hunter, with whom there was a very warm master/pupil relationship that evolved into a guiding friendship by correspondence after Jenner returned to Berkeley to set up in practice.²¹

Although also elected to Fellowship of the Royal Society, on 26 February 1789,²² for his paper on the (non-) nesting habits of the cuckoo, he was still, in 1798, a relatively unknown country doctor of modest means. Jenner had not attended a university but did acquire an MD, by purchase, from the University of St Andrews, on 7 July 1792.²³ Not that the higher qualification was undeserved. His restless mind, willingness to experiment and personal courage marked him out as a very unusual rural surgeon. From early in his career he had been collecting case histories on the relationship between smallpox and human cowpox and performed his famous trials of vaccination beginning with the incising of James Phipps on 14 May 1796.²⁴

It is worth noting that Jenner was not, in fact, the first person to practise vaccination. The folklore that cowpox protected against smallpox was long-established. The theory had been tested as early as 1774 by Jesty, a farmer in Dorset who vaccinated his wife and child during a smallpox epidemic, only to be ostracized in his parish.²⁵ But there can be no doubt that it was Jenner who first applied critical observation to the theory. Equally important, he recorded and published his experimental findings.

¹⁶ Wiesner, *op. cit.*, note 8 above, p. 23.

¹⁷ *Ibid.*, pp. 27–8.

¹⁸ D Baxby, *Jenner's smallpox vaccine*, London, Heinemann Educational Books, 1981, p. 27.

¹⁹ R Fisher, *Edward Jenner (1749–1823)*, London, Andre Deutsch, 1991, p. 13.

²⁰ *Ibid.*, p. 20.

²¹ John Hunter, *Letters from the past: from John Hunter to Edward Jenner*, London, Royal College of Surgeons, 1976.

²² Royal Society of London, Certificates of Election V, 112, 1789.

²³ Fisher, *op. cit.*, note 19 above, p. 59.

²⁴ *Ibid.*, pp. 66–7.

²⁵ E M Wallace, *The first vaccinator: Benjamin Jesty of Yetminster and Worth Matravers and his family*, [Swanage], E M Wallace, 1981, p. 7.

Jenner was, however, also exerting himself in different directions. He was happily married and shared the typically heavy burdens of early middle-age—three children, an expensive house and a demanding practice. The latter was not exactly profitable. Like everyone else in the 1790s, Ingen Housz included, he was “feeling the pinch”. The French Revolution had rocked the British economy, raising the prices of imports and removing many export markets. And recruiting and maintaining a large militia against the recurring threat of invasion was also diverting valuable domestic resources. While his patients faced penury Jenner could never hope to increase the profitability of his Berkeley practice. He was hoping, though, to improve his financial position by starting a further practice—as a consulting physician to the rich and famous visitors to the nearby spa at Cheltenham.²⁶ And so it was to Cheltenham that he travelled when he left London by the early morning coach from The Angel on 14 July 1798 having spent three months in the capital arranging for the publication of his observations and experiments on cowpox.²⁷

Jenner’s Inquiry

John Hunter, who might have helped Jenner to organize and publish his observations on cowpox more effectively, had died suddenly at a meeting in St George’s Hospital on Wednesday 16 October 1793.²⁸ So when Jenner drafted his very first paper on *variola vaccinae* (literally, the smallpox of the cow) late in 1796 he was without his mentor. The manuscript was sent to Sir Joseph Banks, President of the Royal Society, as a submission to the *Transactions* of the Society.²⁹ It recorded his collected case histories and his single experimental finding of 1796, all supporting his view that “the Cow-pox protects the human constitution from the infection of the Small-pox”.³⁰ The isolated experiment is now one of the most famous in the history of medical science—the inoculation, using fresh cowpox serum from the dairymaid Mary Nelmes, of the eight-year-old James Phipps and the boy’s subsequent resistance to variolation. Banks was not medically qualified and seems to have consulted Dr Everard Home, a London physician; ironically, John Hunter’s brother-in-law. Home replied to the President, we now know, in a letter, of 22 April 1797, recently discovered by Baxby. Home advised that Jenner’s work should not be published before more experimentation—that “20 or 30 children might be innoculated [*sic*] for the Cow pox and afterwards for the Small pox”.³¹ Banks heeded this advice and, perhaps, that from other Fellows; we do not know. In fact we have no knowledge of who else might have seen the paper nor whether confidentiality was maintained. And so, when Banks rejected Jenner’s paper, its author must have been disappointed but also very concerned that his ideas might have been stolen, that precedence of publication might be in danger.

Nevertheless, Jenner did embark on more experimentation. Smallpox was uncommon in Jenner’s practice and cowpox even less prevalent. It might be a considerable time before he could perform, and test by later variolation, the couple of dozen experimental vaccinations

²⁶P Saunders, *Edward Jenner, the Cheltenham years, 1753–1823*, Hanover, NH, and London, University Press of New England, 1982, p. 26.

²⁷*Ibid.*, p. 66.

²⁸S R Gloyne, *John Hunter*, Edinburgh, Livingstone, 1950, p. 92.

²⁹D Baxby, ‘Edward Jenner’s unpublished cowpox Inquiry and the Royal Society: Everard Home’s report to Sir Joseph Banks’, *Med. Hist.*, 1999, **43**: 108–10, on p. 108.

³⁰Jenner, *op. cit.*, note 4 above, p. 45.

³¹Baxby, *op. cit.*, note 29 above, p. 109.

suggested by Home. Perhaps he could compromise—perhaps five or ten would suffice? And, in effect, this is what he did. After more vaccinations, some at least tested by variolation during the spring of 1798, Jenner extended his former manuscript. This time he eschewed the Royal Society and arranged a private printing. *An inquiry into the causes and effects of the variolae vaccinae: a disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the cow pox*, to give it its full title, was published by Sampson Low of 7 Berwick Street, Soho. Although the dedication to his friend, the Bath Physician Caleb Parry, is dated 21 June, the book only appeared on sale, according to Fisher,³² on 17 September 1798, for seven shillings and sixpence, at booksellers in Ave-Maria Lane and Fleet Street, London.³³ Jenner's ploy, of reporting case histories as naturally-occurring experiments that supported his hypothesis, survived the rewrite. This was perfectly acceptable for the time even though much of the evidence was still hearsay from friends and colleagues. His true experimental findings were much improved, however: they were now from several trials of vaccination. But many propositions in the paper were still entirely speculative.

The discursive structure of the *Inquiry* makes it difficult to analyse. The best modern appraisal is that by Baxby³⁴ but for our purpose we need consider only Jenner's main theme and its caveat. The central assertion appears on pages 6 and 45—"that the person who has been . . . affected [by the cowpox] is for ever after secure from the infection of the Small Pox". The rider inserted by Jenner is an admonition to diagnose "true" cowpox with care and distinguish it from other ulcerative conditions of bovine breasts, those he calls "spurious" cow pox.³⁵

The First Letter: Letter One from Ingen Housz to Jenner

Ingen Housz spent much of Tuesday 24 July 1798, at home in London, writing letters to Vienna.³⁶ His whereabouts during August are uncertain but he visited William Herschel's observatory at Slough on 11 September.³⁷ Perhaps this was a break in the journey to Wiltshire where we know him to have been by early October. There he was welcomed into the Bowood House party hosted by the Marquis of Lansdowne. Jenner's tract was being debated at Bowood.³⁸ The host and assembled guests were now able to call on the renowned expertise and opinions of Ingen Housz. This may have been a bonus for them but it must have made it difficult for Ingen Housz to stop thinking about Jenner, to avoid becoming obsessed. At least, being in dairy farming country, he had the opportunity to learn more

³² Fisher, *op. cit.*, note 19 above, p. 75.

³³ On paper of good quality, double-spaced, and in a large font, the text consisted of some 10,000 words, aggregated into 88 paragraphs on 74 quarto folios. Four of the pages were given over to Jenner's own immaculate coloured drawings of typical cowpox lesions.

³⁴ D Baxby, 'Edward Jenner's *Inquiry*: a bicentenary analysis', *Vaccine*, 1999, 17: 301–7.

³⁵ It is worth noting that Jenner only records this important distinction in a footnote to p. 7 of the *Inquiry*, and that the word "spurious" appears only on p. 74.

³⁶ Letter to Agatha Ingen Housz, Vienna, from Jan Ingen Housz, London, 24 July 1798. Gemeentearchief, Breda, IV, 16B–4; letter to Josef Jacquin, Vienna, from Jan Ingen Housz, London, 24 July 1798, Gemeentearchief, Breda, IV, 16B–6; letter to Stametz & Co, Bankers, Vienna, from Jan Ingen Housz, London, 24 July 1798, Gemeentearchief, Breda, IV, 16B–7a.

³⁷ Sir William Herschel, C Herschel, Visitors Book (1783–1846), Caird Library, National Maritime Museum, Greenwich, MS80/031.

³⁸ Lady Upper Ossory, Oundle, letter to Lady Caroline Fox, Bowood, 4 Oct. 1798, BL Add. MSS 51966, fol. 88.

about cowpox, and by mid-October he had first-hand knowledge of what seemed a very relevant case history. He was impelled to write to Jenner—on Friday 12 October 1798.

Ingen Housz was a prodigious letter writer—there are over 500 extant “signatures” or personal copies but, uniquely, this first letter to Jenner is not in his own hand. It is in that of Lady Caroline Fox³⁹ and in later correspondence with Ingen Housz she reminds him of her willingness to remain his amanuensis.⁴⁰ So somewhere in Bowood House, probably in one of the bright, south-facing state rooms or the similarly orientated “Adam” library, the “doctor” and the “lady” produced the first letter in the sequence,⁴¹ which reads:

Sir,

Having read with attention your performance on the Variolae Vaccinae, and being informed by everyone who knows you that you enjoy a high and well-deserved reputation as a man of great learning in your profession, you cannot take it amiss if I take the liberty to communicate to you a fact well deserving your attention, and with which you ought to be made acquainted. I prefer this private method of conveying my information to any other which might expose you to the disagreeable necessity of entering into a public controversy, always disagreeable to a man so liberal-minded and well-intentioned as your treatise indicates you to be.

As soon as I arrived at the seat of the Marquess of Lansdown [*sic*], Bowood, near Calne, I thought it my duty to inquire concerning the extraordinary doctrine contained in your publication, as I knew the Cow Pox was well known in this country. The first Gentleman to whom I address'd myself was Mr. Alsop (Alsop), an eminent Practitioner at Calne. This Gentleman made me acquainted with Mr. Henry Stiles, a respectable Farmer at Whitley near Calne, who thirty years ago, bought a Cow at a Fair which he found to be infected with what is (he) called the Cow Pox—this Cow soon infected the whole Dairy; and he himself, by milking the infected Cow, caught the disease which you describe, and that in a very severe way, accompanied by pain, stiffness, and swelling in the axillary glands. Being recovered from the disease, and all the sores dried, he was inoculated for the Small pox by Mr. Alsop (Alsop). The disease took place: a great many Small pox came out, and he communicated the infection to his father, who died of it. This being an incontrovertible fact, of which I obtained the knowledge from the very first man to whom I addressed myself, cannot fail to make some impression on your mind, and excite you to inquire farther on the subject, before you venture finally to decide in favour of a doctrine, which may do great mischief should it prove erroneous.

I heard of several other facts of a similar nature which tend to contradict your doctrine; but indeed it was added that the cow pox had not been severe enough to extinguish the susceptibility to the small pox.

The above-mentioned Farmer thought that the disease of the Cows called Cow pox spreads through a Dairy in the way of other contagious Diseases (x). Thomas White, an eminent Farrier in the neighbourhood of Calne was of the same opinion. By enquiring more minutely on what is asserted in pages 56 and 57 you will (I make no doubt) find it erroneous (xx). But I will make no further observations, as it is far from my wish or my intentions to enter into any controversy with a man of whom I have conceived a very high opinion—Let it suffice, to have communicated to you in a friendly way, a fact which may awaken your attention.

³⁹Lady Caroline Fox, niece of Charles James Fox, and her cousin, Lady Elizabeth Vernon, both unmarried and otherwise homeless, were relatives, by his second marriage, of the first Marquis of Lansdowne and had been taken in by him in the late 1780s.

⁴⁰Lady Caroline Fox, 77 Upper Guildford Street, London, letter to Jan Ingen Housz, 35 Marylebone Street, 31 Dec. 1798, Gemeentearchief, Breda, IV, 16A–13.

⁴¹Jan Ingen Housz, letter to Edward Jenner, 12 Oct. 1798, Gemeentearchief, Breda IV, (Van Hal), 5–38, 55.

The Ingen Housz–Jenner Correspondence Revisited

I am Sir with every possible sentiment of respect and esteem,
J Ingen Housz

Bowood Park,
Oct 12th 1798

x—the very offensive stench, which those sick Cows give out from the lungs and the udder seems to indicate that the disease spreads by infection, without the interference of the milker’s hands, or the grease of the horse’s feet.⁴²

xx—⁴³

In his paper of 1964, Van der Pas reproduces this letter as published by Baron in 1838.⁴⁴ We assume that the original was therefore available to Baron but its present whereabouts, assuming survival, is unknown. We have been able to cross-check Baron’s version against Ingen Housz’s personal “copy” (as it is entitled) which is at Breda⁴⁵ although about a quarter of each of the two folios has been torn away and is missing. The few differences in wording in the Breda copy are shown above by the words in parentheses (ours). In one place (shown by us in parentheses and underlined), Ingen Housz adds a correction in his own hand and he signs the copy at the end.

The contents of the letter seem entirely respectful and even amicable. Baron is certainly correct, however, that Jenner had good reason to have misgivings if he was “not thoroughly convinced that both his facts and reasonings were fitted to stand the test of the severest scrutiny”, describing Ingen Housz as “celebrated” and “distinguished”.⁴⁶ Christopher Allsup (1731–1816) was a surgeon-apothecary in medical practice in Calne from about 1760.⁴⁷ He was the Bowood “surgeon” until well into the nineteenth century and the description “eminent practitioner” seems well-deserved. He was guild steward (mayor) of Calne several times, a long-standing church warden, and earned a place in local history by cutting, in 1780, the famous white horse in the chalk on nearby Cherhill Down.⁴⁸ Ingen Housz had known him since first visiting Bowood Park in 1779.⁴⁹ Like many country doctors of the era, Allsup was a variolator and, as the letter proceeds, we learn that he must have been one from the outset of his career. Henry Stiles had been born at Whitcombe Farm, Hilmarton, near Calne in September 1745. He was, from about 1783, the tenant and, from 1794, the owner of Whitley Farm in Bremhill, a parish neighbouring Bowood.⁵⁰ It must have been, therefore, at Whitcombe that Allsup had inoculated the 23-year-old Stiles—in December 1768. We know the date fairly precisely if it is true that his father, Samuel Stiles, thereby contracted smallpox and died of it. His Will, beginning “I Samuel Stiles of

⁴²Baron incorporates this into the text of the letter in his publication of 1838.

⁴³The footnote to which this seems to refer is not in the Breda copy original and is omitted by Baron. It presumably refers to Jenner’s assertion, on these pages of the *Inquiry*, that stale smallpox “matter”, kept in a warm place, is prone to putrefaction and therefore to loss of potency.

⁴⁴Van der Pas, op. cit., note 3 above, pp. 214–15; Baron, op. cit., note 2 above, pp. 291–3.

⁴⁵Jan Ingen Housz, letter to Edward Jenner, 12 Oct. 1798, Gemeentearchief, Breda IV, (Van Hal), 5–38, 55.

⁴⁶Baron, op. cit., note 2 above, p. 289.

⁴⁷N Beale, *Is that the doctor?*, Bradford on Avon, Ex Libris Press, 1998, p. 17.

⁴⁸W C Plenderleath, *The white horses of the west of England*, London, Russell Smith, 1885, pp. 25–7.

⁴⁹Handwritten memo by Jan Ingen Housz entitled ‘On Dr. Priestley’, Gemeentearchief, Breda, IV, 16A, 8.

⁵⁰D A Crowley (ed.), *A history of the County of Wiltshire*, vol. 17, *Calne Hundred*, Woodbridge, Suffolk, Boydell and Brewer, 2002, p.78.

Whitcombe . . . Yeoman . . . being weak in body but of sound and disposing mind” was signed 19 January 1769. And corroboration continues. Samuel Stiles was buried in Compton Bassett, the parish immediately to the east of Hilmarton, on 4 February 1769.

Thirty years is a long time; memories fade, a sequence of events becomes distorted. Nevertheless, Ingen Housz quotes this as a case history of “severe” cowpox preceding smallpox, giving substantial clinical detail. This, the very first he investigated, he remarks, is an absolute contradiction to Jenner’s “doctrine”. At the same time it is probably true that this tragic consequence of a variolation given by Allsup, a relatively safe preventive procedure, would have burned itself into the memory of any young doctor, having a major impact on morale, confidence, and on his local reputation. And Jenner was hardly in a position to invoke the passage of time as likely to have obfuscated the truth since some of his own case histories were even more ancient.⁵¹ Ingen Housz obviously felt that no more recent example could be more explicit and was seduced, perhaps, by the fact that he had been able to corroborate the story by personal interrogation of both patient and variolator. From the rest of the letter it appears that Ingen Housz questioned others on the Bowood estate and in surrounding communities, obtaining a consistent opinion that cowpox *did, sometimes*, confer immunity to smallpox but that it was not always “severe enough” to “extinguish the susceptibility”. But the imperial physician makes no specific reference to Jenner’s terms, “true” and “spurious” cowpox. He does go on, however, to dispute the origin of cowpox being the disease of horses known as “the grease”.⁵² Here he was correct and Jenner very soon abandoned his “grease” theory.⁵³ Ingen Housz obviously felt, at this point, that he had said enough to make Jenner retract; that any further correspondence would be superfluous.

The Second Letter: Letter Two from Ingen Housz to Jenner

Five days after writing his first letter to Jenner, Ingen Housz set off back to London and three days after arrival in the capital, he was writing to him again. The tone is somewhat more urgent. Deprived of his young transcriber, it is written in his own hand (or so we assume since the copy certainly is) and his eccentric spellings (see “oportunity” and “lettre”) survive. The first letter had been sent to Berkeley whereas the intended recipient was at Cheltenham, where he was to remain until 30 November.⁵⁴ Still knowing no better, Ingen Housz also sent this letter to Berkeley. We present, below, an exact transcription of the letter, written, as a copy, on Tuesday 23 October 1798, in his rooms in London, and annotated, perhaps then or later, again in his own hand, with the words “communication of the fact of Mr. Beman”. The original folios remain in private ownership but we have been privileged to see a photocopy. This source differs, in many respects, from the version published by Van der Pas.⁵⁵

⁵¹ Jenner, op. cit., note 4 above, p. 9.

⁵² *Ibid.*, p. 3.

⁵³ Baxby, op. cit., note 34 above, p. 306.

⁵⁴ Diary of William Davies, Jenner’s nephew, WMS 2052, Department of Archives and Manuscripts, Wellcome Library.

⁵⁵ Van der Pas, op. cit., note 3 above, p. 216.

The Ingen Housz–Jenner Correspondence Revisited

London oct.23.1798 N 35 Marylebone Str.
Golden Square

Sir,

Two days after I had the honour to communicate to you an incontrovertible fact which must by its nature invalidate in some degree the general conclusion you have drawn from the few facts included in your work on the variolae vaccinae, a favorable opportunity to inquire farther about your doctrine offered itself to me accidentally by a visit of Mr. Hastings, late Governor of the east indies, to the Marquis of Lansdown at his seat near Calne. As the seat of Mr. Hastings is not far from your residence, I thought he might be able to give me some informations on the subject of the cow pox: he told me that he had read your work with great interest and attentions and that an authentic fact had come to his knowledge, which invalidates the infallibility of your doctrine. It was this: the son of William Beman a farmer at Adlestrop, Gloucestershire had got the cowpox on milking a diseased cow, accompanied with pain, swelling and stiffness under the arms. Two years afterwards he was inoculated for the small pox, and the disease took place in the most characteristic way. Mr. Hastings told me at the same time, that he thought it ~~advisable~~ necessary that you should be made acquainted with the case, and desired a gentleman to inform you of it, though he was afraid that the commission was not yet executed.

Now, Sir, as I think it impossible you could by any means put in question the authenticity of either of the two cases, I thought it my duty to communicate to you in a private and friendly way, give me leave to appeal to your own good sense, sound judgement, and your known principles of honour, and to allow to these two cases a due weight in the scale of justice and equity: and I can not help thinking, that their importance can scarce fail to appear to a man of so much ingenuity and integrity as you are known to possess, the more deserving his serious consideration as I received the communication of them from the two very first men to whom I addressed my self for the purpose of inquiring on this important subject. What I heard accidentally from the country people, I communicated to you in my former letter; which informations however, I gave you to understand, were rather unfavourable to your doctrine, as they seem to cast, as it were, a shade on the supposed popular opinion.

Being now returned to London, I perceive that your doctrine has made a deep impression on the mind of the public: and for that reason I think it the more my duty to inform you by the first opportunity of this second case, in hopes that the knowledge of it may awaken further your zeal for the public good, and afford you the best means to correct your mistakes, if you should find to have committed one or more inadvertently.

quas aut incuria fudit,

Aut humana parum cavit natura.⁵⁶

I believe that a man can never ~~given~~ appear in a more favorable light than by acknowledging an error & was resolved to act on that principle: and few writers have had a greater share of opposers to their doctrines than I, and foreseeing this I took for motto the text of Horace

si quid novisti rectius istis,

candidus imperti; si non, his utere mecum.⁵⁷

Whatever you may judge right to do on this head, Sir, I think you have nothing to loose, as I am not the only one acquainted with the facts, and as it will soon be impossible for me to avoid the

⁵⁶This is a quotation from Horace (bc 65–8), *The art of poetry*, lines 352–3. It translates as: “(I shall not take offence at a few blots) which a careless hand has let drop, or human frailty has failed to avert” (*Horace: satires, epistles and ars poetica*, transl. H Rushton Fairclough, London, Heinemann, 1926, pp. 478–9).

⁵⁷Also from Horace, this is a quotation from *The first book of epistles*, ch. 5, Epistle to Numicius, lines 67 and 68. It translates as: “If you know something better than these precepts, pass it on, my good fellow. If not join me in following these.” (*Ibid.*, pp. 290–1.)

importunate questions of my numerous acquaintances. I am with great esteem, your obedient servant

J. Ingen Housz

Here was another incontrovertible fact to invalidate Jenner's general conclusion. Ingen Housz had still been at Bowood when Warren Hastings arrived⁵⁸—someone new for the household to engage in debating the *Inquiry*. In fact, Hastings had already issued a challenge to Jenner, having asked "a gentleman"⁵⁹ to inform Jenner of a contradictory case of his own (supposed smallpox after cowpox)—of the son of William Beman, a farmer in a parish adjacent to his rural seat at Daylesford, Gloucestershire.

Despite the enforced "thinking time" of the three days journeying back to London, Ingen Housz is now blinkered. He fails to allow that the Beman case is, to him, at least third-hand. Nevertheless, it is easy to understand how his conviction was so strong for his two cases—both appearing to confound Jenner's doctrine—were obtained, as he says, from "the two very first men to whom I addressed myself". But Ingen Housz remains diplomatic, arguing that he writes from a sense of "duty" now that, back in the metropolis, he has seen the topicality of Jenner's book. Trusting to the first quote from Horace to establish the long pedigree of human fallibility, he pleads to Jenner to consider that he could be wrong. And in the last sentence, Jenner is warned that private intercession will soon be replaced, inevitably, by public intervention. The luxuries of sitting on the fence and of privacy are soon to be denied: Ingen Housz's return to London is a significant factor in the rising tension.

The Third Letter: Letter One from Jenner to Ingen Housz

Presumably it would have been during the last days of October 1798 that Jenner eventually received, at Cheltenham, the first letter from Ingen Housz. We have no evidence for his immediate reaction. However, it is not difficult to imagine his apprehension. Here was testimony, strongly contradicting the central tenet of his treatise, from a very high-ranking source. As a renowned variolator, Ingen Housz was going to be a formidable opponent if he remained unconvinced by Jenner's thesis. Here was, indeed, an *éminence grise* but Jenner shows no signs of panic. His reply is supremely diplomatic without being submissive. The version we reproduce here is that from Baron's biography of Jenner.⁶⁰ Even though it is undated and incomplete we cannot do better. We conclude, as did Van der Pas, that the original is lost.⁶¹

Dear Sir,

I shall ever consider myself as under great obligations to you, for the very liberal manner in which you have communicated a fact to me on a subject in which at present I feel myself deeply

⁵⁸ Warren Hastings (1732–1818) sought his fortune in India. He rose through the ranks of the East India Company to become, in 1774, the Governor of Bengal and then Governor-General of the colony. His meteoric success brought him powerful enemies and serious allegations, in London, of misconduct and corruption resulting in a Parliamentary Inquiry with a view to impeachment. He was finally acquitted in 1795, having

regained his family "seat" at Daylesford in Gloucestershire.

⁵⁹ Whom we later learn to be the Reverend Thomas Leigh (1734–1813), Rector of St Mary Magdalene Church, Adlestrop, for fifty-seven years (plaque on chancel wall of the church). He was a first cousin to Jane Austen's mother (née Leigh).

⁶⁰ Baron, *op. cit.*, note 2 above, pp. 293–5.

⁶¹ Van der Pas, *op. cit.*, note 3 above, p. 215.

The Ingen Housz–Jenner Correspondence Revisited

interested; a subject of so momentous a nature that I am happy to find it has attracted the attention of some of the first medical philosophers of the present age, among whom it is no compliment in me to say that I have long classed you.

It will doubtless, in the course of time, meet with a full investigation; but as that moves on (and from the nature of the inquiry it must move slowly) I plainly foresee that many doubts will arise respecting the validity of my assertion, from causes which ought to be examined with the nicest inspection before their convictive force be fully admitted.

Truth, believe me, Sir, in this and every other physiological investigation which has occupied my attention, has ever been the object which I have endeavoured to hold in view. In the publication of the Variolae Vaccinae, I have given little more than a simple detail of facts which came under my own inspection, and to the public I stand pledged for its veracity. In the course of the inquiry, which occupied no inconsiderable portion of my time and attention, not a single instance occurred of a person's having the disease, either casually or from inoculation, who on subsequent exposure to variolous contagion received the infection of the small-pox, unless that inserted in page 71⁶² may be admitted as an exception. And from the information you have given me, and from what I have obtained from others who have perused the pamphlet, I am induced to suppose that my conjecture respecting the cause of that patient's insecurity, namely, her having had the disease without any apparent affection of the system, might have been erroneous; and that the consequences might be more fairly attributable to a cause on which I shall, in my present address to you, feel it my duty to speak more explicitly. Should it appear in the present instance that I have been led into error, fond as I may appear of the offspring of my labours, I had rather strangle it at once than suffer it to exist, and do a public injury. At present I have not the most distant doubt that any person, who has once felt the influence of perfect cow-pox matter, would ever be susceptible of that of the small-pox. But on the contrary, I perceive that after a disease has been excited by the matter of cow-pox in an imperfect state, the specific change of the constitution necessary to render the contagion of the small-pox inert is not produced, and in this point of view, as in most others, there is a close analogy between the propagation of the cow-pox and the small-pox. Therefore I conceive it would be prudent, until further inquiry has thrown every light on the subject which it is capable of receiving, that (like those who were the objects of my experiments) all should be subjected to the test of variolous matter who have been inoculated for the cow-pox. . . .

As available, this letter feels incomplete. Some of the phrases strongly suggest that Baron omitted some substantial text. The obvious conclusion is that there was a section on diagnosing the “perfect” and the “imperfect” cow-pox, a distinction trailed earlier in the letter. What is indisputable is that Jenner repeats his “doctrine” with the utmost confidence viz. that anyone who has suffered “*perfect*” cowpox is given life-long immunity to smallpox. Even so, Jenner would need to work hard to convince his critic that apparently contradictory case histories do not, necessarily, destroy his thesis. He would need to expound more clearly his observation that instances of failed protection can arise from cases in which the diagnosis of cowpox has been incorrect—that the patient had suffered “imperfect” cowpox—that it had been a “spurious” case.

⁶²The case of Elizabeth Sarsenet, a dairy maid who suffered cowpox contemporaneously with all the other servants at the farm where

she worked but to a lesser extent. Jenner admits that she still suffered (mild) smallpox at a later date.

Or, for vaccinated cases, serum had been taken other than according to his stipulations regarding timing and purity. We suspect that he was now seeing these flaws in his book as a serious oversight and he did not agree with Ingen Housz that there was a potentially serious public health risk should vaccination prove unreliable and therefore suggested, as an insurance, that all recipients of his technique should be tested by later variolation.

The Fourth Letter: Letter Two from Jenner to Ingen Housz

From the following fragment of a further letter from Cheltenham, we now know that Jenner had received the second letter from Ingen Housz before posting his first response. This second letter of Jenner appears to have been unknown to Van der Pas and was not published by Baron. It is, effectively, a supplement to Jenner's first letter, and posted with it ("which accompanies this"). We discovered the document at Breda.⁶³ Frustratingly, we found only the lower halves of the two folios and, although the signature is present ensuring validity, the date is not. The part document is well preserved on good quality paper of approximate A4 size and there are no difficulties reading it. The missing halves remain to be discovered, if they have survived. We publish, here, the available parts.

[illegible lower half of words that are the last line of the missing top half of the page] Your second letter (which from its candour lays me under equal obligations with the first) is now before me. The Letter, which accompanies this, was written before I received it; but I presume, Sir, as far as it respects the fact of a Person's being susceptible of the variolous matter after having had the Cowpox, it contains an answer to both. If you will observe my pamphlet concludes with a declaration of my intention to prosecute the Inquiry. I shall. . . . [top half of next page also missing] . . . occur'd to me, where, after the most rigid trials the smallpox could be given to those who had had the Cowpox. The instances I have produc'd are call'd few, but I do assure you Sir that it was only from a fear of tiring the Reader that I did not insert more, as I could have inserted them to almost any number. In my neighbourhood (near the centre of the vale of Glo'ster) the People, from living so much among dairies, know how to discriminate between the true and the spurious Cowpox, . . . [top half of page again missing] . . . render'd . . . [top halves of next words missing and so they are incomprehensible] . . . that I do not admit an eruptive disease of any sort that may appear spontaneously on the Cow, to be capable of giving a distemper to the human body which can produce the like effect.

The following account of the Cowpox, which has been communicated to me since I have been writing to you, from Mr. Troy a Surgeon who lives at Dursley, a Town situated in the Vale of Berkeley, is so very striking that I cannot omit troubling you with its perusal. He tells me that out of nea . . . [again top half of page missing] . . . satisfy the minds of the patients. They associated during the time with other inoculated patients and many of these purposely exposed themselves to the contagion of the natural smallpox.

I remain Dear Sir,
with great esteem
yr. obliged and obt. humble Ser.
Edw. Jenner

The surviving half of this letter is difficult to evaluate but is, perhaps, still important because it indicates the true sequence of the correspondence—that this was not "tit for tat"

⁶³Edward Jenner (undated), letter to Jan Ingen Housz, Gemeentearchief, Breda IV, (Van Hal), 5–38.

as has been previously assumed. But here, at least, is further evidence that Jenner is beginning to realize the critical importance of correct cowpox diagnosis if apparently contradictory evidence is not to overwhelm his hypothesis.

The next letter (the fifth letter, below) is, again, from Jenner to Ingen Housz. Only ten days, at the very most, after posting his first two missives to Ingen Housz together, Jenner sent what is really only a note containing one simple message. We reproduce the actual letter from Van der Pas who has told us that he saw it in Holland and made a copy of it.⁶⁴

The Fifth Letter: Letter Three from Jenner to Ingen Housz

Cheltenham
7th November 1798

Dear Sir,

Since I did myself the honour of writing to you last, I have received some authentic information respecting one of the cases you communicated to me, which it would be wrong to withhold from you.

About a month ago the Rev.^d Mr. Leigh of Adlestrop in this county mentioned to me the case of the son of one of his Tenants, who having had the cow pox was after wards affected with the small pox. Very soon after this Mr. Leigh call'd upon me to inform me that he had been led into an error; for on making a more minute Inquiry into the matter he found the fact to be the reverse of what was first represented to him, the boy having first had the small pox & afterwards the cow pox. I have written to Mr. Leigh to know the name of the Person in question & find it to be Beman. Mr. Leighs words are "he thinks that it was some time after & not before the small pox by inoculation that he had the cow pox. So that this case does not at all clash with your hypothesis."

As the misrepresentation of this case has made an improper impression on the minds of others, is it not a proof of my assertion in a former letter, that those who take up this important Inquiry, should proceed with the utmost vigilance and circumspection.

Ere long I hope to be honor'd with a letter from you, informing me whether you approve of my proposal relative to the manner of laying the intended Appendix before the public.

I remain Dear Sir,
with the greatest deference,
your obed. & obliged humble serv't
Edw. Jenner

This must have shaken the Dutch physician. It reveals that his second contradictory case history, obtained via Warren Hastings, was almost certainly dud. In fact, Ingen Housz appears to have learned his lesson and determined not to trust any more third hand information. He must have written to Farmer Beman personally (although no such letter has ever been published) for Van der Pas reproduces a reply, presumably a copy, from Beman to Ingen Housz (undated). Van der Pas has informed us that he saw, also, this original in Holland in the early 1950s.⁶⁵ From this letter we learn the exact clinical details of the case. Beman's son, Thomas, had been variolated in the autumn of 1787. The procedure had been successful for he had fully recovered despite "one Hundred pustules". It had been the

⁶⁴ Van Der Pas, *op. cit.*, note 3 above, pp. 217–18; personal communication.

⁶⁵ Van Der Pas, personal communication.

following summer—in August 1788—that the boy had suffered cowpox, developing sparse but typical vesicles on the fingers and back of one hand. We do not know when Ingen Housz received this direct and embarrassing evidence but it must have been after 20 December 1798 for it was on this day that he sent his next, his third, letter to Jenner (see sixth letter, below). This contains references to the Beman case but in terms couched only in the details given by Jenner in his short note (our fifth letter, above). However, there had been important relevant events shortly before 20 December.

Sometime in late November or early December, Jenner must have written to his friend Thomas Paytherus, a fellow surgeon-apothecary who had worked in Ross-on-Wye and was now practising in London.⁶⁶ We do not have the letter itself but its contents must have included a plea for Paytherus to call on Ingen Housz and represent Jenner's respects and views. Ingen Housz returned to London on Thursday 13 December 1798, having been a guest of the Rucker family, London merchants whose rural retreat was West Hill House on Wandsworth Common.⁶⁷ Paytherus made an appointment to see Ingen Housz in his London rooms at 35 Marylebone Street for the morning of the 14th, writing a full report to Jenner later that day.⁶⁸ Paytherus summarizes his view of the situation in chilling prose—"a more formidable opponent", "would not hear a word in defence of your opinion" and so on. The imperial physician related to Paytherus that he had been seeking other relevant case histories from among his physician friends at the Royal Society and that he already had several reports indicating that although cowpox did "in many instances" render patients immune to smallpox, it "was not with certainty . . . in all cases". And this, as the letter clearly conveys, was the verdict of Ingen Housz at that precise time. Paytherus also informed Jenner, however, that the Dutch Physician "spoke very handsomely of you" and "desires that you will not be in haste to publish a second time on the cow-pox, but wait until you have collected a sufficient number of facts, and to secure your ground as you advance"—advice that is corroborated by the contents of our next letter.

The Sixth Letter: Letter Three from Ingen Housz to Jenner

Our other significant discovery at Breda was a further unpublished letter in the true sequence between Ingen Housz and Jenner.⁶⁹ In fact the document is clearly a copy, perhaps a draft, retained by its author, Ingen Housz. This, presumably, explains why it eventually found its way to the Netherlands and survived, albeit within the archive of another family. It is in three folios, approximately A4 size, written in ink (with pencilled additions and corrections in Ingen Housz's own hand) on extremely flimsy paper. The ink has burnt through the paper in places. The two top sheets have been torn through vertically at some stage and then re-united with transparent adhesive tape. Although the repair is a skilful one, it is the reason that the occasional word is illegible. We publish the letter here in full.

⁶⁶ Fisher, *op. cit.*, note 19 above, p. 66.

⁶⁷ Jan Ingen Housz, letter to Lady Caroline Fox, 3 Jan. 1799, BM Add MSS 51967, fols. 64,65.

⁶⁸ Baron, *op. cit.*, note 2 above, p. 298.

⁶⁹ Jan Ingen Housz, letter to Edward Jenner, 20 Dec. 1798, Gemeentearchief, Breda IV, (Van Hal), 5, 38.

The Ingen Housz–Jenner Correspondence Revisited

To Doctor Jenner Dec. 20th [in pencil]

to Doctor Jenner at Cheltenham

Dear Sir,

Since I received your two letters I resided chiefly in the country, making a part of very respectable families, whose agreeable company engaged my mind and my time, so as not to allow me to pursue my favoured studies. When I happened to come to town for one or two days, I never had the good luck to hit on Dr. Pearson.⁷⁰ At last however I met him: but, as he is allways in great hurry our conversation was short and I did not chuse to communicate to him your letters, being not desired by you to doe so. Besides this reason for not complying immediately with your desires to receive a speedy answer I had several others, of which one was my observing your eagerness bordering to an impatience to publish the intended appendix of which you sent me a copy; and which I thought it imprudent to lay before the public eye, such as I found it. Therefore, sir, I thought to doe you a real service to leave you for some time to your own reflexions, till your mind, probably some what agitated by my letters (as I thought your appendix indicated clearly) should be becalmed by farther reflexions and manly reconceiled to such a degree of reduction of your unlimited assertion, as my first letter, could scarce, as I thought, miss to induce you to adopt immediately: as the case stated in that letter was as plain as (it is) [added in pencil] incontrovertible I could not expect, that you should attempt to involve it in farfetched suppositions and binding phrases, so as to make it appear, if possible, of being no force whatever to weaken your unlimited doctrine, that the cow-pox well characterised constitutes a person in perfect security against an attack of the small pox; and I have still confidence enough in your good sense to expect that after the agitation of your mind will be becalmed, you will find it prudent not to lay before the public any such commentary upon the fact: as I am afrayed such an attempt may turn out to your disadvantage, and that in more than one respect. As to the content of my second letter, I could not attest that fact myself, as I can the first fact: but my authority was fairly stated: and if Mr. Hastings and the Revd. Mr. Leich had been led into an error, my second letter must be considered as if it never had been written. I must however not step over this point, without informing you, Sir, that none of the gentlemen, to whom I communicated your ltrre dated Nov. 7, were of opinion, that the expression of Farmer Beman, that he thought it was some time after and not before the small pox, that the lad had the cow-pox, is a (prime?) negative of his former positive assertion of his son having had the small pox a year or two after the cow-pox; which positive assertion I here suppose had come from the farmer himself or from his son. They all thought it very unlikely that the father should use the very (words or?) phrase I think or a similar one implying some doubt or uncertainty in his recollection (instead?) of saying, I am quite sur, if he did not doubt himself what was truth and such a doubt can not but appear very unaccountable to a man of common sense. (Some even thought it somewhat suspicious) [added in pencil].

As my only intention in communicating to you my first letter was to point out to you in a private way, what I thought was an error in your work, to give you a fair oportunity to correct it yourself, before an other would doe it publickly and I thought you would make this partial retraction with honour, the more readily as the patient Henry Stiles, Mr. Alsup and myself are still existing, and as I did not found a single person, nor even a common milk women, nay not even yourself, Sir, who did not openly acknowledge that to make a person invulnerable from the small pox, it is required that the cow-pox should afflict with a certain degree of severity. Now, Sir, who will be a propre

⁷⁰ George Pearson, MD, FRS (1751–1828) was a physican at St George's Hospital and was to take up, enthusiastically, the introduction of

vaccination in London (see Fisher, op. cit., note 19 above, p. 86).

judge of that accurate degree of severity required? Is it the hideousness of the ulcers, /2/ the fever, the pain under the sores, or all together? Certainly not, as Henry Stiles suffered all those symptoms and proved not to be invulnerable.

The case of the young woman stated in Dr Pearson's pamphlet, page 28, is undoubtedly an other example of the small pox after the cow-pox. She got it from a child labouring under the small pox. She had a fever and about 50 pustules which disappeared, it is say'd, in a few days. Way [= why] is it not say'd to make it clear, that they disappeared without suppuration? But this is easily to be added in a second edition. You will not doubt, that I can, with such concern, see all these as reasons to disguise in a kind of mist all facts not coinciding with the certain infallibility of the doctrine. But I am afraid that all those endeavours will (produce?) of little avail, with what ever degree of obstinacy this infallibility may be maintained for a time.

I perceive clearly that it would be vain to attempt to convince you of the fallibility of the doctrine and, besides, I would find it impossible to answer fully the appendix you did me the honour to write me in the form of a long letter, without composing a whole pamphlet book. Instead of that I will take the liberty to point out some few articles, which I think the most objectionable. The doctrine of the only true and saving cow-pox being only originated from the horses greasy heels did seem to me, at the first inspection of your work to be incredible, and seemingly repugnant to the common known laws of animal economy. If this extraordinary doctrine was founded, nothing would be easier that to banish for ever this naisty disease from the country: to this effect I would advise, that the first dirty scoundrel who should ~~should~~ milk a cow with unhallowed hands, that is to say, to touch a cow after having dressed a horse's food [= foot], without washing his hands, should be stripped, tarred and feathered, and conducted through the parish by the infected milk maids. One of such a funny example would doe the business I am confident. The almost endless distinctions of the different stages of the matter of the horse's feet required [last word in pencil], and of the medling state of fermentation of this matter on the cows udders and of its nice degree of perfection in all its necessary qualities and specific properties, is too perplex to satisfy an intelligent reader, and can only serve as a nostrum to refute with ease any case of small pox after the cow-pox, by putting, at pleasure, a negative to the cow-pox or by distinguish it away by arguments. The supposed putrefactive fermentation from milk hanging at the hand of Henry Stiles is too far fetched and reather unphilosophical, as cow's milk is not subject to putrefaction but to acid fermentation which would check the gratuitly supposed putrefaction in the ulcers of the cow be milked. What you may say about the small pox matter, received on threads and supposed gratuitously to undergo a putrid fermentation, which destroys its energy so as to grow a spurious kind of small pox, is in my opinion, totally erroneous: and I think, that what you say in the appendix in support of this assertion, makes it still worth [= worse]. The inoculator, who had suggested you this article, had certainly not a true knowledge of the subject. When your friend, Mr Paytherus brought me your last letter, I sent a note to Dr Gartshore,⁷¹ who I knew had been a few days ago in Wiltshire, by which I begged to know, what he might have heard there about the cow-pox. I shewed your friend my note with Dr Gartshore's answers written under it (it repeated inadvertently). His answer was, that Dr Pulteney, at whose house Dr Gartshore was at Blanford, was informed by several inoculators, that they had seen several people seized with the natural small pox notwithstanding they had before laboured as under the cow-pox. /3/ After all this, recieve, if you please, my last friendly advise; which is, that you should not be too much in hurry in publishing either my letter or your apendix, though revised, corrected, enlarged, without calmly considering your arguments and expressions.

You will easily believe, Sir, that being in every respect a stranger to you, it would not be but the very favourable opinion I have conceived of your talents and character, that induced me to give

⁷¹ Dr Maxwell Garthshore, MD, FRS (1732–1812) biographical account of him in *Annals of Philosophy*, 1817, **10**: 3.
knew Ingen Housz well and wrote an early

The Ingen Housz–Jenner Correspondence Revisited

myself the trouble of writing so much on a subject, with which I have no concern but in consideration of the public good: which subject however, though it should not turn out to the good of the public, may become, in the hands of others, a lucrative job to be chairfully divided between the printers and the authors in which division I have a right to claim my share, if I should expose to the public eye my own reflexions, of which I have the honour to communicate some few to you for your own exclusive perusal in as friendly a way as I can and which you may employ to your own views in full liberty and in what ever way you may find best for your purpose, without given your self any farther trouble in writing to me.

Dr Pearson desired me to give him in writing, what I communicated him by words, to swell up with it a second edition which his hungry printer has a craving desire to prepare with all possible dispatch. L'appetit vient en mangeant;⁷² but as Dr Pearson might, by his great hurry and innate liveliness, I fear, make upon such communications some commentary, which would perhaps not meet with your own and my approbation, I declined the proposition, out of mere prudence.

Wishing you a good success in your laudable endeavour to promote usefull knowledge, not locking out of sight the old proverbe Ekhaldi bradiou⁷³ I have the honour to subscribe myself, with great esteem,

Dear Sir your humble obedient servant
Wansworth Dec. 20th. 1798

J Ingen Housz

Ingen Housz has taken a great deal of trouble with this letter, easily the longest in the sequence. The sections most immediately relevant to the contention between the two men are interspersed between references to Dr Pearson, the first in rather disparaging terms. Pearson obviously hopes to include details of the dispute between Ingen Housz and Jenner in a second edition of his own pamphlet on vaccination⁷⁴ but Ingen Housz refuses to sanction this. Several parts of the letter also imply that Ingen Housz is now in possession of a draft of Jenner's proposed follow-up paper, his "Appendix" and that he is very unhappy with it. In any case, he says, he would find it impossible to "answer fully . . . without composing a whole book". The bulk of the letter, a series of technical points being finely contested, is best itemized.

(a) Ingen Housz is still disappointed that Jenner refuses to reconsider his thesis in the face of the Stiles case. In fact he is surprised that Jenner attempts to explain the contradiction (smallpox after the cowpox) by alleging that Henry Stiles could not have had the "true" cowpox.

(b) Ingen Housz retracts his criticism of Jenner based on the Beman case—"my second letter must be considered as if it had never been written".

(c) Ingen Housz now reveals that he has learned from many sources that "to make a person invulnerable from the small pox, it is required that the cow-pox should afflict with a certain degree of severity". He challenges Jenner, quite reasonably, on this point—"Now, Sir, who will be a prope judge of that accurate degree of severity required?"

(d) Ingen Housz is able to accuse Jenner of sophistry—"I can . . . see all these as reasons to disguise in a kind of mist all facts not coinciding with the certain infallibility of the doctrine".

⁷² "Eating only increases the appetite"; a quotation attributed to Rabelais (1492–1553).

⁷³ Greek—"make haste slowly".

⁷⁴ G Pearson, *An inquiry concerning the history of the cowpox: principally with a view to supersede and extinguish the smallpox*, London, J Johnson, 1798.

(e) The proposition that cowpox originates in horse “Grease” is still exercising Ingen Housz. Now, though, rather than a flat denial of this possibility, he suggests how this phenomenon could be extinguished. His recommendation makes for amusing reading but would actually be good preventative husbandry.

(f) Ingen Housz then rehearses several technical points that all relate to how preserved cowpox matter might be attenuated of its power or adulterated. Here again, he suggests, are uncertain processes and outcomes that allow Jenner to squirm his way out of check when confronted by case histories that confound his hypothesis.

After all this, however, the letter ends perfectly amicably—“receive, if you please, my last friendly advise” and we should note the use of the word “last”. This, together with a later phrase, “without given your self any farther trouble in writing to me” suggests to us that Ingen Housz was calling a halt to the correspondence. And, in the end, Ingen Housz seems very well-disposed towards his younger colleague, the quotation in Greek—“make haste slowly”—being both positive and avuncular.

Discussion

Previous commentators have been as exercised by the tone of this correspondence as by its content. A re-examination of why and how Jenner’s hypotheses were first challenged—by Ingen Housz—therefore appears overdue, especially now that we have some newly discovered letters. In essence Ingen Housz and Jenner only contest the central tenet of the *Inquiry*—that infection with cowpox confers protection against smallpox. Although Jenner holds to his thesis, doggedly and, we now know, justifiably, he has to acknowledge the philosophical rectitude of Ingen Housz. His challenging case histories are flawed but highlight Jenner’s failure to define his terms sufficiently. To use modern parlance, Ingen Housz accuses Jenner of moving the goalposts. That Jenner’s definitions were seriously inadequate is certainly the view of Baxby.⁷⁵ Perhaps it is not insignificant that his original and somewhat vague distinction between “true” and “spurious” cowpox appears only as a footnote in the *Inquiry*. Jenner must have regretted this shortcoming and seen its looming significance. It certainly seems that his “Appendix”, first published as *Further observations on the variolae vaccinae, or Cow Pox*,⁷⁶ on 5 April 1799, is largely the result of Ingen Housz’s challenge. It is a belated attempt to distinguish “true” cowpox from what Jenner classifies as four varieties of “spurious” disease. On the other hand, we think it is clear that Ingen Housz came to see, albeit slowly, that Jenner was articulating a real and worthwhile phenomenon.

The perfect scientific paper has never been written. Jenner’s dissertation remains extremely valuable, and rightly so, because it contains the kernel of an immensely important and valid concept—that exposure to one infective agent, by natural contagion or by inoculation, could confer protection against a different aetiology. Ingen Housz was only the first of several detracting correspondents, according to Baron.⁷⁷ These seem to have been ignored by Jenner’s biographers, as have the inherent faults of the *Inquiry*. The “spin”, most

⁷⁵ Baxby, op. cit., note 34 above, p. 305.

⁷⁶ E Jenner, *Further observations on the variolae vaccinae, or cow pox*, London, Sampson Low, 1799.

⁷⁷ Baron, op. cit., note 2 above, p. 301.

commonly, is that modest, well-meaning and brilliant Jenner was harangued by an arrogant and blinkered Ingen Housz. And so, almost inevitably, we come to the purported attitudes of the two men.

The imbroglia has not just been seen as “old dog” against “young Turk”. Ingen Housz writes, according to Baron with “a degree of pomp and authority” and that he became “rude and truly imperious”, and showed an “increasing obstinacy”.⁷⁸ Over a century later Dorothy Fisk is even more agitated and prejudicial. Ingen Housz, she asserts, surrounded the Stiles case history with “compliments” so that it became a “bomb in a bouquet” and that the next letter was bereft of all bouquets, simply “pompous and dictatorial”.⁷⁹ And even Fisher, in the latest Jenner biography of 1991, persists in the view that the correspondence was “oddly bad-tempered”.⁸⁰ This interpretation is, we suggest, less justified now that more of the correspondence has come to light. Van der Pas, at least, contested the view that Ingen Housz was arrogant and obstinate.⁸¹ This, he says, conflicted with opinions, recorded elsewhere, of his benign and tolerant personality. The first Marquis of Lansdowne wrote, for instance, that “he always believed Bentham⁸² to be the most good-natured man in the world till he had made an acquaintance with Ingenhousz”.⁸³ But these blandishments might be just as biased for, although he may have been mild-mannered in social intercourse, there is good evidence that the Dutchman could be stubborn and persistent in scientific disputes. For example, he doggedly fought his corner after discoveries of his own had been claimed by others such as Joseph Priestley⁸⁴ and Jean Senebier.⁸⁵ At the same time he appears to have adopted, late in his life, the advice given to him by his own scientific mentor, Benjamin Franklin; that public altercation between scientists served no purpose however justified the private debate.⁸⁶

On the other hand Jenner would have needed to have been a saint to see the criticisms of his opponent as helpful. We get a flavour of his private reactions in letters to his friends, for instance to the Frampton-on-Severn wine merchant, Edward Gardner,⁸⁷ in whom Jenner often confided: “This very man, Ingenhousz, knows no more of the real nature of the cowpox than Master Selwyn does of Greek . . . ’Tis no use to shoot straws at an eagle”.⁸⁸ “Letting-off steam” is a healthy human reaction in the right context and probably explains, together with the unfettered views of their intermediary, Paytherus, the unsupportable allegations of confrontation and personal animosity that supposedly grew up between the antagonists. But perhaps all this is an irrelevance anyway.

History shows that Jenner was, finally, very fortunate. He had the genius first to perceive and then to demonstrate a vital phenomenon that kindled a whole new branch of medical science—immunology. But the *Inquiry* nearly buried itself because it failed to specify how

⁷⁸ *Ibid.*, pp. 290, 295.

⁷⁹ D Fisk, *Dr. Jenner of Berkeley*, London, Heinemann, 1959, p. 147.

⁸⁰ Fisher, *op. cit.*, note 19 above, p. 83.

⁸¹ Van Der Pas, *op. cit.*, note 3 above, p. 207.

⁸² See note 13 above.

⁸³ E Fitzmaurice, *Life of William, Earl of Shelburne, afterwards first Marquess of Lansdowne*, 3 vols, London, Macmillan, 1875–1876, vol. 3, p. 447.

⁸⁴ H Gest, ‘Bicentenary homage to Dr. Jan Ingen Housz, MD (1730–1799), pioneer of photosynthesis

research’, *Photosynthesis Research*, 2000, **63**: 183–90, pp. 186–7.

⁸⁵ H Reed, ‘Jan Ingenhousz: plant physiologist’, *Chronica Botanica*, 1949, **11**: 285–396, on p. 300.

⁸⁶ B Oberg (ed.), *The papers of Benjamin Franklin*, New Haven, Yale University Press, 1999, vol. 35, p. 550.

⁸⁷ Fisher, *op. cit.*, note 19 above, p. 30.

⁸⁸ Baron, *op. cit.*, note 2 above, p. 296.

cowpox was correctly diagnosed and when and how serum should be taken for inoculation purposes. The resulting confusions could easily have aborted the uptake of vaccination. We might give Jenner high marks for inspiration, middling marks for experimentation, but poor marks for exposition. Despite this appraisal we concur with the most authoritative view—that of the World Health Organisation—that “the publication of the *Inquiry* . . . constituted a watershed in the control of smallpox”.⁸⁹ But the implicit warnings of Ingen Housz were also to be realized and Jenner was fortunate to see his new inoculation technique survive its inept introduction by his contemporaries.⁹⁰ Vaccination did, eventually, succeed in the battle against smallpox and Jenner’s prediction, in his third publication that this “scourge” would, one day, be eliminated did come true.⁹¹ The last known case of smallpox was diagnosed in a young man in Somalia on 26 October 1977 although it is alarming to learn that stocks of the virus have been deep-frozen by certain governments “for research purposes”.⁹²

We conclude where we began—at the personal level. On Thursday 19 September 1799 the front page of the *Bath Chronicle* carried, top of centre column, an advertisement for “improved inoculation” in which Mr Henry Jenner, Surgeon, of Berkeley in Gloucestershire, announced that he would be attending the White Lion Inn, weekly, “for the purpose of inoculating . . . in the milder way . . . those who wish to escape the Small-Pox”.⁹³ Henry Jenner was Edward’s nephew, assistant, and erstwhile apprentice.⁹⁴ Here was Jenner’s success in action. But on an inside page of the very same newspaper we find a brief and more poignant notice: “Saturday, died at Bowood-park, Dr. Ingenhousz, physician to his Imperial Majesty, and member of several learned societies”. The Ingen Housz–Jenner correspondence was most certainly at an end.

⁸⁹F Fenner, D Henderson, I Arita, Z Ježek and I D Ladnyi, *Smallpox and its eradication*, Geneva, World Health Organisation, 1988, p. 264.

⁹⁰Matter taken during a cowpox outbreak in north London in January 1799 was used to begin vaccinations in the capital but many recipients developed rashes consistent with smallpox. Jenner’s over-enthusiastic and careless acolytes, usually variolators, had somehow mixed the serum with that from their smallpox cases. The result could have been a

disastrous smallpox epidemic and, for the future of vaccination, terminal. See D Baxby, *Vaccination: Jenner’s legacy*, Berkeley, Jenner Educational Trust, 1994, p. 18.

⁹¹E Jenner, *The origin of vaccine inoculation*, London, Shury, 1801, p. 8.

⁹²Fenner, *et al.*, *op. cit.*, note 89 above, p. 1062.

⁹³Bath Library, The Podium, Bath.

⁹⁴Fisher, *op. cit.*, note 19 above, p. 60.