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# Benjamin Jesty: new light in the dawn of vaccination

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Figure 1: **Benjamin Jesty.** William Say's engraving of the oil portrait by Michael W Sharp. The original painting was exhibited at Somerset House, the Vaccine Pock Institute, and George Pearson's home, before being given to the Jesty family.

Figure 2: **Upbury farmhouse—the home of Benjamin Jesty** Situated in Yetminster, Dorset. Medieval in origin, the house was reconstructed in the late 16th or early 17th century and is still a working farm.

"History is not what you thought. It is what you can remember".[1]

Our view of past events can be clouded by fallacious popular opinion, and attempts to revise the historical record can invoke controversy. The myth[2] of the origin of vaccination is an example of this situation. Conventional wisdom holds that Edward Jenner discovered vaccination when he transferred cowpox material from the hand of Sarah Nelmes to the arm of James Phipps on May 14, 1796. In fact, the procedure had been devised and used earlier by another person—Benjamin Jesty. Jenner is rightly celebrated as the scientist whose cautious investigations, published works, and prolific correspondence brought vaccination to the notice of the world. However, his endeavours generated much controversy. He was the victim of satiric ridicule in the popular press, and many eminent members of the medical profession were politically opposed to Jenner. Jenner's social circle, however, did include very influential friends. In 1802, the Pitt government awarded him £10,000. Another £20,000 followed in 1807. Before the first award, George Pearson brought evidence before the Commons of a previous act of vaccination done in Dorset by a farmer named Benjamin Jesty—22 years before Jenner's feat. Pearson had received communications[3] about Jesty from the Reverend Herman Drew of Abbots near Honiton, R Pulteney of Blandford, and W Dolling at Chettle. Unfortunately, Jesty's well documented case was weakened by his failure to petition in person,[4] and Pearson's inclusion of other claimants whose evidence could not be validated.

In the past two decades, there has been a growing recognition of Jesty as the first vaccinator.[5–10] Here, I establish the location of Jesty's experiment, show the importance of his endeavour, and discuss the implications for the historical record.

Benjamin Jesty (figure 1), a tenant farmer, lived in a substantial stone farmhouse named Upbury (figure 2), next to St Andrew's Church in the centre of Yetminster village, near Sherborne, UK. In 1774, he was aged 37 years and had been married for 4 years to Elizabeth, 35 years; they had two sons, Robert (3 years), Benjamin (2 years), and a baby daughter, Elizabeth. Benjamin Jesty was the epitome of many farmers at the time of George III. He was intelligent, prosperous, and a pillar of the local community. These were revolutionary days in the approach to farming. The enclosure system had led to the new crops such as potatoes being grown on a commercial scale.

Townshend introduced the idea of crop rotation. Seed quality had improved, and Jethro Tull had invented the seed drill. Cattle were now bred for the production of meat and leather, rather than just for dairy products, an endeavour assisted by the novel provision of winter fodder. Jesty thrived on innovation.

Smallpox was a constant threat, as the scourge of the so-called speckled monster ebbed and flowed throughout the 1700s.[11] Mechanisms were in place for the relief and "physick" of the local poor. Jesty was an overseer of the poor, and attended the Yetminster Vestry meetings. The practice of affording protection against infection by the deliberate induction of modified disease originated in China in the 10th century with the intranasal application (insufflation) of powdered smallpox scabs. A Turkish variolation derivative became known as "the inoculation". This procedure had been championed by the gentry since 1722, when Lady Mary Wortley Montagu returned to England from Constantinople, Turkey. However, this dangerous technique of seeding skin incisions with live smallpox material was not popular with the working classes (figure 3 of the Lancet paper, not included here, showed cowpox vaccination and smallpox lesions). Up to one in 50 recipients of inoculation died as a result of the procedure, and the process sometimes introduced the disease where it had not previously been active. However, faced with a smallpox epidemic that started in the autumn of 1771, the Yetminster Vestry decided that something should be done. An extract[12] from their minutes of Feb 9, 1772, proclaims:

> ". . . on Mature Consideration respecting the present danger the Poor of the said Parish are in who have not had the smallpox, and of the probability of the said Distemper spreading in the Parish in its natural course and for the purpose of preserving the lives of such as choose to receive our advice and will put themselves under the care and Direction of some Surgeon of Eminence in the practice of Innoculation, do hereby consent and agree that such of the Parish as think fit shall be Innoculated at the expense of our said Parish".

Henry Meech, surgeon and apothecary of Cerne Abbas was paid £10 15s 3d for inoculating ten villagers, who also received remuneration.[12] Benjamin Jesty would have known the local medical practitioners personally, and knew of their techniques.

Tales of people who avoided smallpox through their acquisition of cowpox were commonplace in farming communities. Dairymaids were noted for their unblemished complexions. Jesty had acquired cowpox while working with cattle as a young man. His notion that cowpox could prevent smallpox was strengthened through discussion with two of his dairymaids, Anne Notley and Mary Reade. Both had been infected with cowpox—a mild disease in human beings—as a result of occupational exposure. Neither woman had since contracted smallpox, even when nursing relatives who had the disease.

Smallpox was present in Jesty's locality again in 1774. Determined to find a safe way to protect his family, Jesty took his wife and two sons to a herd of cows that he knew had symptoms of cowpox. These cattle were owned by Mr Elford, and they were grazing near the hamlet of Chetnole. The family made their way to the site on foot. On reaching the herd, Jesty searched their udders for cowpox lesions. Using a stocking needle,[13] he transferred material from a lesion to his wife's arm, inserting it into her skin immediately below the elbow. He then repeated this procedure on the two boys, making a puncture just above the elbow in each case. Elizabeth soon developed a fever, and her arm became inflamed. Medical advice was sought and Elizabeth recovered in due course. Word of the event spread through Dorset and became well known in the medical, farming, and ecclesiastical communities. Jesty became an object of scorn and derision. He encountered abuse whenever he attended markets—in rural areas, people were often superstitious and treated anything unusual as abhorrent. The last execution for witchcraft had taken place only 62 years before Jesty's act. Despite the unwelcome attention, Jesty steadfastly continued with his parish duties.[14] The trio of vaccinees remained free of smallpox, even though they were exposed to epidemics of the disease. His two sons were variolated by Trowbridge[15] in 1789. Robert, then aged 18 years and Benjamin, 17 years, were unaffected by this challenge with smallpox inoculum.

The actual site of Jesty's vaccinations has not been recorded. In 2000, I went to Dorset, to establish the location of Elford's pastures (panel 1). I realised that, from Elford's pastures, I could barely see the tower of St Andrew's Church in distant Yetminster, from where the Jesty family had walked. The reality of distance walked brought a new perspective to the situation. What happened in this meadow in 1774 was not the result of a simple farmer's fleeting daydream—the act required inspiration, a firm resolve, and physical effort. The distance from Upbury to Elford's fields bears witness to Jesty's foresight and intellect. He must have had total confidence in the prophylactic efficacy of his magnificent act.[17]

In view of my new information about the location of Jesty's vaccination experiment, the circumstances of the event merit closer scrutiny. Certain of the notion that cowpox protected against smallpox, Jesty had the idea of substituting smallpox material with that of cowpox as an effective and safer form of inoculation. The project must have been discussed with his wife and at least one other person. Baby Elizabeth, being too young to be included, remained at home in the care of someone who understood and approved of what Jesty was doing. His dairymaid and relative, Anne Notley, was living with the family at the time. She would have been the ideal choice.

Jesty had to access the cowpox in Elford's herd. My investigations show that this required the family to walk a minimum of 7·4 km (4·6 miles) for the round trip. Any parent might identify with the logistics of walking such a distance with small children. Jesty's stocking needle was the type used for knitting knee-length stockings, worn with breeches by men in the 18th century. This type of needle tapered to a slim point, and would have been ideal for piercing skin. Medical practitioners of the time (including Jenner) preferred to use a lancet to open a broader incision. When inflammation

Panel 1: **In search of Elford's pastures: tracking down the site of Jesty's vaccination**

Figure 4: **Elford's pastures**

In June, 2000, I drove to Dorset to establish the precise location of Elford's pastures (figure 4 and figure 5) and Benjamin Jesty's first vaccination. I had a list[16] of field names associated with the Elford family in the eighteenth century, sourced by Nina Hayward of the Hundred of Yetminster Local History Society from the Yetminster Court Book: Shoness, Breach, Roundabout, Little Knowle, and Hanging Cliff. English field names are commonplace, and often have their derivations in medieval or Roman times. At the Dorset Archives Service, I used the Yetminster Court records of property bought and sold to confirm that four of the listed field names were associated with the farmer, William Elford, at the time of Jesty's vaccinations. The fields were indicated on the Chetnole Tithe Map 1840–41 ref T/CHN by name, or numerical entry coded in the apportionment. Several adjoining fields shared the same name. Most of the field boundaries are discernible on the current Ordnance Survey Explorer Map 117 (figure 6). All this pasturage is clustered at the southern extremity of Chetnole village, near a property named Foys, at a distance of 3·7 km (2·3 miles) from the home of Benjamin Jesty (grid references GR 594074 and GR 607072). William Elford's wife, Mary, is mentioned in connection with Foys in the Deeds of the Elford family (D/FFO 15/15-17). A relative who lived nearby in 1774 is entered as John Foy Elford. Elford's fields are set in a patchwork of hedgerows near the wooded slopes of Melbury Bubb and the aptly named River Wriggle. The topography is little changed since Jesty's day, with the exception of the railway line, linking Yeovil with Dorchester.

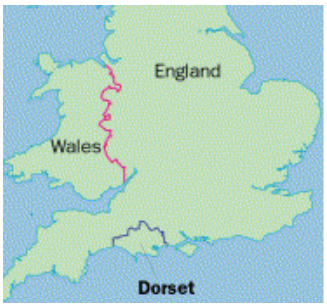


Figure 5: **Southern England, showing position of Dorset**

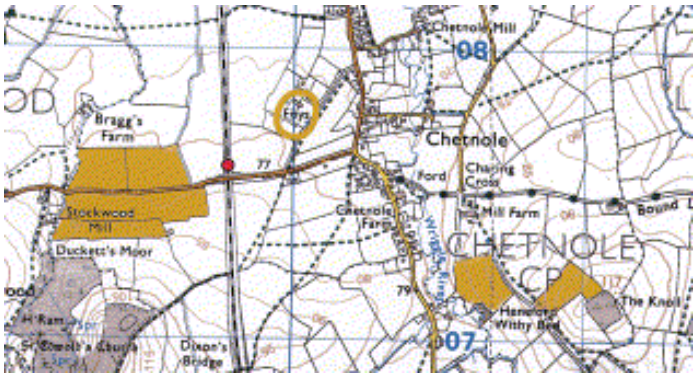


Figure 6: **Extract from the Ordnance Survey Explorer Map 117 showing part of Chetnole.** Land associated with William Elford in 1774 is shown in yellow. Reproduced with kind permission of Ordnance Survey. Crown copyright NC/03/43037.

complicated Elizabeth's vaccination, Jesty summoned medical help immediately. He was prepared to suffer the ignominy that would surely follow when people learned of what he had done.

Jesty and his family moved to Downshay Manor, near Worth Matravers, in 1797. Understandably, he made no attempt to seek publicity until hearing of the magnitude of Jenner's first award. An account of Jesty's vaccinations was then documented by Andrew Bell,[18] the Rector of Swanage. Bell, an enthusiastic vaccinator, felt that Jesty's efforts also merited reward. Unaware of George Pearson's previous petitions to the Pitt Government about the Dorset farmer, Bell prepared a paper dated August 1, 1803, proposing Jesty as the first vaccinator, and sent copies to the Original Vaccine Pock Institute (incorrectly quoted by Southey[18] as the "Jennerian Society") and the member of parliament, George Rose. Bell wrote to the Institute again in 1804, having learned of the earlier communications between Herman Drew and Pearson. Bell's support for Jesty continued, and on Sunday July 15, 1806, he preached the same sermon twice in honour of the man, "whose discovery of the efficacy of the cowpock against smallpox is so often forgotten by those who have heard of Dr Jenner".[19]

Panel 2: **Report from the Original Vaccine Pock Institute, 1805**

"That he was led to undertake this novel practice in 1774 to counteract the small-pox, at that time prevalent at Yetminster, where he then resided, from knowing the common opinion of the country ever since he was a boy (now 60 years ago) that persons who had gone through the cowpock naturally, ie by taking it from cows, were insusceptible of the small-pox; by himself being incapable of taking the small-pox, having gone through the cow-pock many years before; from knowing many individuals, who, after the cowpock, could not have the small-pox excited; from believing that the cow-pock was an affection free from danger; and from his opinion that, by the cow-pock inoculation, he should avoid ingrafting various diseases of the human constitution, such as "the Evil (scrofula), madnes, lues (syphilis), and many bad humours," as he called them."

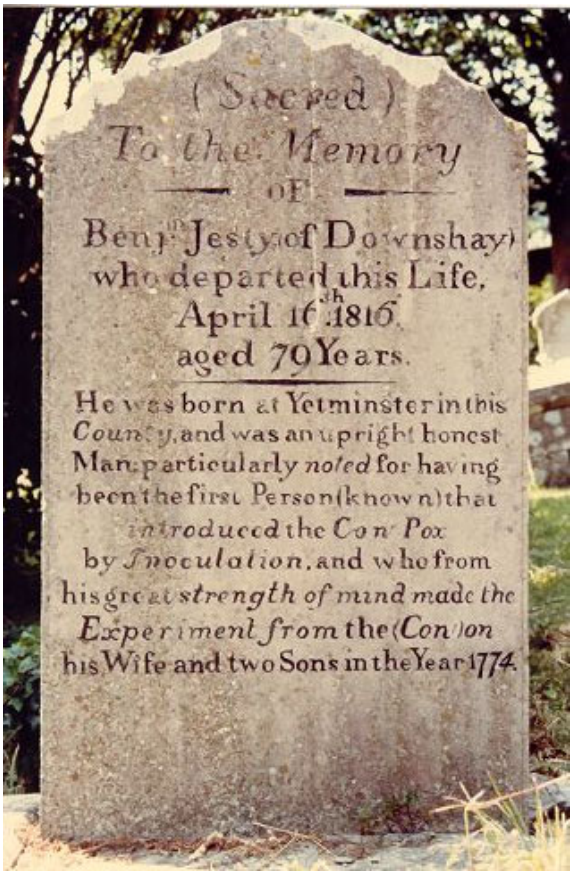


Figure 7: **Benjamin Jesty's headstone.** In the churchyard of St Nicholas of Myra at Worth Matravers, UK. (Not original article photo)

In 1805, Jesty accepted a formal invitation to attend the Original Vaccine Pock Institute in London. This visit was organised by Pearson, probably as a political slight against the Royal Jennerian Society. Jesty saw no reason to dress differently in London than he did in the country. Members of the Institute were much amused by his old-fashioned appearance. Robert, the oldest son (by then 28 years old) also made the trip to London and agreed to be inoculated with smallpox again to prove that he still had immunity. Although Benjamin Jesty's only experience of life was that of a farmer in a rural community, Jesty had based his experiment on a plausible hypothesis formed from his personal observations and experience—evident from the report of the officers of the Institute in 1805 (panel 2).[20]

Jesty also expressed his reasoning on safety to Bell as follows; "There is little risk in introducing into the human constitution matter from the cow as we already without danger eat the flesh and blood, drink the milk and cover ourselves with the skin of this innocuous animal".[18]

Why should it be inappropriate to equate the simplicity of Jesty's homespun logic with the rationale of Jenner's studied deduction? There is much common thinking in their approach, but Jesty did not have support from luminaries such as John Hunter, who was Jenner's mentor and friend. However, the practical applications of their respective ideas differed greatly. Jesty was convinced enough that he was prepared to attempt a true vaccination—ie, from the cow—on those he held most dear. Jenner ignored the potential risks of person-to-person transfer, but was careful to prove this technique on the children of other parents before immunising his own son, Robert. Jenner was mistaken in his belief that cowpox was derived from horses, and did not vaccinate directly with bovine cowpox until 1798. Both men were unable to explain how cowpox protected against smallpox. Jenner's publications and extensive correspondence encouraged widespread adoption of the vaccination technique. Jesty was unable to do the same because he did not have scientific training or professional credentials. Jenner saw the means to eliminate a pestilence. Jesty's only motivation was the wellbeing of his family, but his courageous initiative contrasts favourably with Jenner's protracted indecision. Jesty was not a member of the medical community, which should command our admiration, not our prejudice. We have dignified the doctor with greatness. Why dismiss the farmer as reckless?

There is no written evidence that Edward Jenner knew of Jesty's vaccinations, although he did have good contacts with medical practitioners in Dorset. Jenner was honoured by many nations. The Original Vaccine Pock Institute awarded Jesty a pair of gold mounted lancets, a testimonial scroll, fifteen guineas expenses, and arranged for his portrait (figure 1) to be painted by the artist Michael W Sharp. Jesty proved an impatient sitter, and could only be kept quiet by the artist's wife playing to him on the piano. Jesty died on April 16, 1816, 7 years before Jenner. His grave is close to the church of St Nicholas of Myra in Worth Matravers, near Swanage. Jesty published notice of his vaccinations posthumously, having written his own epitaph (figure 7).

Elizabeth displayed commendable integrity when she added the word "(known)" to the text on her husband's tombstone, but rumours of previous cowpox vaccinators remain unsubstantiated.

Today, vaccines and vaccination are topics that feature prominently in the media. The advent of DNA vaccines heralds a new approach in the treatment of disease. These exciting developments have a distinguished pedigree, but the archives of this branch of medicine are flawed. Jenner is worthy of his laurels, but I hope the evidence discussed here will add weight to the belief that Jesty was the earliest to devise and undertake a vaccination. That this historic event took place in a field is a fitting tribute to the folklore from which it sprang (figure 8, not included here, is a painting of a milkmaid's hand with a

cowpox lesion, while a farmer beside her passes a physician a lancet). The eradication of smallpox will always endure as Jenner's legacy,[21] but Benjamin Jesty of Yetminster, the first vaccinator, deserves a prominent place in the annals of medical history.

I thank the staff at the British Library, the Wellcome Library, the Dorchester Reference Library, the Dorset Archives Service, the Ordnance Survey, the Needle Museum at Redditch, Mrs Nina Hayward, and my wife Linda Pead, for their help in the preparation of this manuscript.

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***Note: This article was translated into this format by Jolyon Jesty for inclusion with the Jesty family tree. The family are greatly in Mr Pead's debt for his careful and exhaustive study confirming Benjamin's first vaccinations at Chetnole, Yetminster.***