

# William Woodville and vaccination

SIR — Two hundred years ago, on 14 May 1796, Edward Jenner (1749–1823) inoculated a boy called James Phipps with a 'lymph' derived from a cowpox (vaccinia) vesicle affecting a dairymaid, Sarah Nelmes<sup>1</sup>; more importantly, on 1 July, he took the adventurous (experimental) step of injecting him with smallpox 'matter', and Phipps did not develop variola (smallpox).

It is important however, to give due credit for widespread introduction of vaccination to William Woodville (1752–1805), Physician and Superintendent of the St Pancras Smallpox Hospital<sup>2</sup> in London, who had over many years taken a keen interest in all matters relating to smallpox prevention and treatment. (He had produced an impressive overview<sup>3</sup> in 1796.)

Jenner was better known (and had been elected a Fellow of the Royal Society) for his seminal paper "Observations on the Natural History of the Cuckoo"<sup>4</sup>. His subsequent cowpox manuscript had been rejected for publication by Sir Joseph Banks, the President of the Royal Society, and Sir Everard Home; Jenner published it in expanded form as a pamphlet<sup>5</sup>.

Woodville did not immediately attempt confirmation of Jenner's claim — initially because of adverse reaction from the medical profession, and later because Jenner's supply of cowpox 'lymph' had been lost<sup>6</sup>. Fortunately, he became aware of an outbreak of cowpox at Thomas Tanner's farm in Gray's Inn Lane in January 1799 (ref. 2); by comparison with coloured plates in Jenner's *Inquiry*<sup>5</sup>, Woodville (and several distinguished colleagues, including Banks) were able to satisfy themselves of the correct diagnosis. Woodville was thus able to vaccinate a large number of local residents, some of whom (almost certainly as a result of contamination of 'lymph' with variolous material) developed a generalized (vaccinal) rash. What was in fact the first large-scale clinical trial of vaccination confirmed Jenner's observation(s).

Woodville (at heart a scientist with a major interest in botany) was loth to admit contamination of his cowpox 'lymph'<sup>2</sup>.

Nevertheless, although, as a result, relations between him and Jenner became cool<sup>6</sup>, the two physicians continued to communicate, remained on reasonably good terms, and subsequently published as a joint pamphlet *A Comparative Statement of Facts and Observations Relative to the Cow-Pox*<sup>7</sup>. In a dedication to Jenner in a subsequent pamphlet, *Observations on the Cow-pox*, Woodville wrote<sup>8</sup>: "That the vaccine matter, with which the inoculations have been carried on in the Hospital, was contaminated with that of the Variolous... is a charge which I know to be unfounded..." He continued: "The performance of this task [that is, refutation] has, however, been very painful to me... which attaches to a man, for whom I have long entertained a friendly regard..." Woodville subsequently played a major role in the introduction of vaccination in France<sup>1,6</sup>; the technique was to be rapidly acclaimed internationally, although global eradication did not occur until October 1977.

Retrospectively, the fact that Woodville failed to receive due recognition for his role in the smallpox saga seems to have been largely because of his close association with George Pearson (1751–1828), a distinguished scientist who among other discoveries had recognized uric acid<sup>6</sup>. Pearson was exceedingly ambitious and ruthless; not only did he attempt to take personal credit for the demonstration of vaccination, but he did everything in his power to destroy Jenner's claim(s) for priority in its discovery. In fact, he also spoke (unsuccessfully) against the petition(s) to reward Jenner with parliamentary funds to the tune of £30,000 — a fortune indeed in 1800 (refs 1,6).

Woodville should therefore be accorded far greater credit for establishing vaccination on a large scale as a safe and effective protective measure against variola<sup>2</sup>. Had it not been for his initiative and industry, Jenner's *Inquiry* might well have been neglected and his two subsequent pamphlets (of 1799 and 1800) remained unwritten. Jenner's 'thorn in the flesh' was certainly not the academic figure Woodville, but Pearson.

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■ See also News and Views, page 26. □

## Overdue changes

SIR — As a former Soros Visiting Scholar, I have first-hand experience of the importance of Mr George Soros's support for Russian science (see *Nature* **378**, 432; 1995 & **380**, 18; 1996). The scholarship gave me timely encouragement, and eventually

enabled me to raise funding for a doctorate at Oxford. On my return to Russia, however, I found that my research institute was not prepared to recognize my new degree. (Ironically, the director of the institute was himself recently awarded a Soros Professorship Award.)

My experience underlines the extent to which, despite the positive effects, the Soros scholarships scheme has failed to bring about the necessary structural changes in Russian science. Instead, it perpetuates the Stalin-designed system which isolates the research institutions of the Russian (formerly Soviet) Academy of Sciences from the universities that do the teaching. The academy carried out research either to meet the needs of the government, or to demonstrate the generosity of the Communist Party. In contrast, the universities have been expected to meet the manpower needs of industry, agriculture, education — and, in some cases, the academy itself.

Recent political developments have caused the government to lose interest in research, primarily because investment in basic research does not produce short-term cash returns, while the results of such research end up in the public domain. Universities — whose students, as the main consumers of basic research, could benefit from receiving this knowledge directly from research scientists — have not been able to link up with the academy's research institutions because of the restrictions imposed by the Ministry of Higher Education. At the same time, the universities lack the means to carry out research effectively.

Some universities have admittedly hired leading research scientists. But this is because of a shortage of teachers rather than a deliberate policy. The general difficulty faced by universities in attracting leading researchers reduces their attraction to students, and thus their government subsidies and fees. Members of the Academy of Sciences appear to have convinced Soros that, by helping them as individuals, he is rescuing Russian science. But they have not been interested in the structural changes that are sorely needed.

Such changes are now long overdue. No country can afford to support as many research institutions as Russia without linking research and higher education, and attracting funds from both government and external sources. Russia needs research universities — not just isolated and xenophobic research institutions.

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8. Woodville, W. *Observations on the Cow-pox*, 43 (William Phillips, London, 1800).