Medical History, 1988, **32:** 231–252.

THE POLITICS OF PREVENTION: ANTI-VACCINATIONISM AND PUBLIC HEALTH IN NINETEENTH-CENTURY ENGLAND

by

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THE FRAMING OF THE LAW ON COMPULSORY VACCINATION AND THE ORGANIZATION OF OPPOSITION

The coming of compulsory health legislation in mid-nineteenth-century England was a political innovation that extended the powers of the state effectively for the first time over areas of traditional civil liberties in the name of public health. This development appears most strikingly in two fields of legislation. One instituted compulsory vaccination against smallpox, the other introduced a system of compulsory screening, isolation, and treatment for prostitutes suffering from venereal disease, initially in four garrison towns.[1] The Vaccination Acts and the Contagious Diseases Acts suspended what we might call the natural liberty of the individual to contract and spread infectious disease, in order to protect the health of the community as a whole.[2] Both sets of legislation were viewed as infractions of liberty by substantial bodies of Victorian opinion, which campaigned to repeal them.

These opponents expressed fundamental hostility to the principle of compulsion and a terror of medical tyranny. The repeal organizations—above all, the Anti-Compulsory Vaccination League and the National Association for the Repeal of the Contagious Diseases Acts—were motivated by different sets of social and scientific values.[3] Nevertheless, their activities jointly highlight some of the political conflicts produced by the creation of a public health service in the nineteenth century, issues with resonances for the state provision of health care up to the present day.

Compulsory vaccination was established by the Vaccination Act of 1853, following a report compiled by the Epidemiological Society on the state of vaccination since the

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Many thanks to Logie Barrow for extremely helpful comments on the first draft of this paper.

[1] W. M. Frazer, *History of English public health 1834–1939*, London, Baillière, Tindall & Cox, 1950, pp. 70–72, 106–112; P. McHugh, *Prostitution and Victorian social reform*, London, Croom Helm, 1981 and J. Walkowitz, *Prostitution and Victorian Society*, Cambridge University Press, 1980.

[2] See H. W. Rumsey, *Essays on state medicine*, London, Churchill, 1856, *passim*.

[3] See Donald R. Hopkins, *Princes and peasants. Smallpox in history*, University of Chicago Press, 1983; Pierre Darmon, *La longue traque de la variole. Les pionniers de la médecine préventive*, Paris, Librairie Académique Perrin, 1986; R. M. MacLeod, 'Law, medicine and public opinion: the resistance to compulsory health legislation, 1870–1907', *Public Law*, summer 1967, 106–128, 188–211; McHugh, op. cit., note 1 above, pp. 55ff.; Walkowitz, op. cit., note 1 above, pp. 91–147; R. Lambert, 'A Victorian national health service: state vaccination, 1858–71', *Hist. J.*, 1962, **5:** 1–18; Ann Beck, 'Issues in the anti-vaccination movement in England', *Med. Hist.*, 1960, **4:** 310–321. For recent discussion on the visual representation of anti-vaccinationism, see G. Prescott Nuding, 'A Victorian controversy: William Calder Marshall's statue of Edward Jenner', (unpublished paper).

passing of the first Vaccination Act in 1840. This Act had provided free vaccination for the poor, to be administered by the Poor Law Guardians; an extension of the Act in the same year outlawed inoculation.[4] The management of vaccination remained entirely the responsibility of the Poor Law authorities until 1858, when further legislation put powers of supervision jointly in the hands of local Guardians and the Medical Department of the Privy Council, where Sir John Simon was the Medical Officer.[5] Simon's own later account of the task faced by his department in the enforcement of vaccination tells the tale of a struggle to rectify mismanagement, which had resulted from haphazard administration under the Poor Law.

When first appointed to the General Board of Health in 1854, Simon had been acutely aware of the hostilities aroused by the existing system of vaccination. The fact that the legislation of 1853 gave compulsory powers meant that the public had a right to demand that the system should be of the highest quality. Hence Simon undertook a major inquiry during 1857, in which he "endeavoured to represent what was then the experience of the civilised world as to the use of vaccination, and as to the validity of reproaches against it".[6] The result was a massive documentation of data, published, together with a lengthy preface, as the *Papers relating to the history and practice of vaccination*. In 1893, he reflected upon what the *Papers* had demonstrated. Much of the "speculative pathological reasoning" of the preface he regretted, but overall he still found cause to "rejoice to have had the opportunity which that duty of 1857 afforded me, to collect and record so much conclusive evidence regarding Jenner's incomparable benefaction to mankind."[7]

Despite the "conclusive evidence" of benefit, Simon was realistic in his evaluation of the system when he took over its supervision at the Privy Council. He claimed that the Poor Law Board had control only over the contractual arrangements for vaccination, and was incapable of supervising the practice of vaccination or the quality of the lymph supply. This "secretarial" supervision resulted in the fact that "throughout the English system of public vaccination there were flagrant evidences of unskilfulness: evidences specially discreditable in the case of the country which had taught vaccination to the world, and all the more serious in their details in as much as our legislature in 1853 had made vaccination compulsory."[8]

Simon's answer to the problems of the system was *medical* management. The public Health Act of 1858 was intended, on the basis of the information provided by his 1857 papers, to "begin a better system", "not indeed removing from the Poor Law Board the formal control over vaccination contracts, but providing, as in aid of the Board, that, for all the medical requirements of the case, the medically-advised Lords of the Council

[4] Royston Lambert, *Sir John Simon 1816–1904 and English social administration*, London, Macgibbon & Kee, 1963, pp. 250–258; B. J. Stern, *Should we be vaccinated? A survey of the controversy in its historical and scientific aspects*, London, Harper, 1927, pp. 54–57.

[5] Lambert, op. cit., note 4 above, pp. 322–329.

[6] John Simon, *English sanitary institutions* London, Cassell, 1890, p. 262.

[7] Ibid., p. 263. For discussions of the claims of vaccination in the reduction of smallpox see Charles Creighton, *A history of epidemics in Britain*, 3rd ed., Cambridge University Press, 1894; Major Greenwood, *Epidemics and crowd diseases*, London, Williams & Norgate, 1935, pp. 226–244; William H. McNeill, *Plagues and peoples*, Oxford, Basil Blackwell, 1977, pp. 249–258; Peter Razzell, *The conquest of smallpox*, Firle, Sussex, Caliban Books, 1977.

[8] Simon, op. cit., note 6 above, p. 281.

should regulate and supervise the service."[9] When Simon took over the medical supervision of the system, new instructions were issued by the Medical Department designed to ensure an improved supply of lymph, with new rules for times and places for vaccination in the localities, and greater control over the stations providing supplies for the National Vaccine Establishment. Moreover, training was introduced for vaccinators, with special vaccine education stations being set up in conjunction with hospital medical schools.

Inspection of the system was undertaken by the most distinguished medical investigators and scientists of the day, Edward Seaton, Thomas Stevens, George Buchanan, and John Burdon-Sanderson, acting as inspectors for the Medical Department between 1860 and 1864.[10] Their reports provided the research upon which the new legislation of 1867 was founded. The Vaccination Act of 1867 rendered statutory the regulations instituted by the Privy Council, and further extended to an unprecedented degree state powers of compulsion. Under the 1853 Act, all infants had to be vaccinated within the first three months of life, in default of which parents were liable to a fine or imprisonment. The 1867 Act made it compulsory for children under the age of fourteen to be vaccinated, and encouraged the notification of default by doctors by providing financial inducements for compliance and penalties for failure.

Furthermore, a new post of Vaccination Officer was to be created for the local authority, to coordinate the whole machinery of notification and enforcement. He or the local registrar was to be responsible for presenting to the Board of Guardians a half-yearly list of defaulters. The Guardians were now ordered by Parliament to proceed against parents of unvaccinated children. A new clause in the Act changed the system of penalties for default. Under the 1853 Act, a defaulter could be required to pay only a single fine or to serve one term of imprisonment. Under the 1867 Act, continuous and cumulative penalties were introduced, so that a parent found guilty of default could be fined again and again, with the sentence increased on each occasion until the original default were removed.[11] According to Royston Lambert, Simon's biographer, the Chief Medical Officer found this last feature of the Act unpalatable (it was probably the work of the Council's vaccination expert, Edward Seaton).[12]

The law was further tightened in 1871 when the appointment of vaccination officers became compulsory for all local authorities. A smallpox epidemic raged throughout Europe in 1871. It reached London during the early part of the year and spread throughout the kingdom during 1871 and 1872.[13] It coincided with a House of Commons Select Committee set up in 1871 to investigate the efficacy of the compulsory system. Important evidence was provided for the Committee by the surgeon Jonathan Hutchinson, one of Simon's own medical inspectors, who gave an account of two sets of cases in which syphilis had been transmitted through

[9] Ibid.

[10] Ibid., pp. 282–288. For potted biographies of Seaton, Buchanan, and Stevenson see Simon, op. cit., note 6 above; and for Sanderson see Lady Burdon Sanderson, *Sir John Burdon Sanderson, a memoir*, Oxford, Clarendon Press, 1911. For discussion of some of their professional lives see D. Watkins, 'The English revolution in social medicine', University of London PhD Thesis, 1984.

[11] Lambert, op. cit., note 4 above, pp. 323–328, 391–394.

[12] Ibid., p. 393.

[13] Frazer, op. cit., note 1 above, pp. 111–112, 170–172; Lambert, op. cit., note 4 above, pp. 443–447.

arm-to-arm vaccination. This raised many fears concerning the possibility of transmitting additional diseases through this method, and from then on there was increased pressure upon Parliament to replace arm-to-arm vaccination with calf-lymph vaccination.[14] A parliamentary campaign was led by Dr Charles Cameron, Member of Parliament for Glasgow, and George Wyld and Thomas Wilson formed an Association for the Promotion of Calf-Lymph in the following year.[15] Calf-lymph vaccination did not, however, become standard practice until the 1890s.

In 1888, a bill was introduced into Parliament by Jacob Bright, Member of Parliament for Manchester, to repeal the Vaccination Acts, but was defeated. Instead, a Royal Commission was set up to investigate the grievances of the anti-vaccination lobby and the rival merits of the pro-vaccination argument.[16] The Commission sat for seven years, finally reporting in 1896. Many leading anti-vaccinationists gave evidence, including Dr Charles Creighton, Dr Edgar Crookshank, Alfred Russel Wallace, William Tebb, J. H. Biggs, and Alfred Wheeler.[17] Equally eminent pro-vaccinationists contributed, not least Sir John Simon, William Ogle, R. D. R. Sweeting, Richard Thorne-Thorne, and Dr Frederick Barry.[18] The Majority Report of the Commission supported the continuation of compulsory vaccination, together with recommendations for the introduction of revaccination and the use of calf-lymph.[19] A Minority Report, signed by Dr W. J. Collins, who helped subsidize the *Vaccination Inquirer*, and J. A. Picton, Member of Parliament for Leicester, denied the justification for compulsion and deplored the stringency of the law.[20] A new Vaccination Act was passed in 1898, relaxing the terms of compulsion by introducing the possibility of conscientious objection.[21] If parents facing prosecution for default could prove to a magistrate that they had defaulted out of genuine disbelief in the prophylactic power of vaccination and out of fixed objection to the introduction of infectious material into the blood of their child, they could be absolved. It fell to the magistrates' court to distinguish between conscientious objection and mere neglect.[22]

[14] Simon, op. cit., note 2 above, pp. 310–312.

[15] The "Calph-Lymphers" were denounced and ridiculed throughout the anti-vaccinationist literature. See the editions of the *Vaccination Inquirer* throughout the 1880s and '90s.

[16] Stern, op. cit., note 4 above, p. 85.

[17] For discussion of Wheeler and Tebb see MacLeod, op. cit., note 3 above; and for biographical accounts of these and other leading members of the anti-vaccination movement see William White, *The story of a great delusion*, London, Allen, 1885, pp. 540ff.

[18] Stern, op. cit., note 4 above, p.85.

[19] Frazer, op. cit., note 1 above, pp. 170–172.

[20] Collins was the son of W. J. Collins, who gave evidence to the 1871 Select Committee and had denounced vaccination in 1863 after being a public vaccinator for St Pancras for twenty years. The two Collins comprised one of the numerous father-and-son teams involved in the anti-vaccination movement. Stern points out that there were dynasties of Gibbs, Tebbs, and Nichols as well as Collins: see Stern, op. cit., note 4 above, p. 135; and White, op. cit., note 17 above, pp. 542–543. See also MacLeod, op. cit., note 3 above, pp. 190, 198–199. The elder Collins was also an author of books on evolution. See W. F. Bynum, 'Darwin and the doctors: evolution, diathesis and germs in nineteenth-century Britain', *Gesnerus*, 1983, **40:** 43–53. For contemporary discussion of the Final Report and the Minority Report and the role of Picton see *Public Health*, 1895–6, **8:** 397–398; and ibid., 1897–98, **10:** 99–100.

[21] A. Wohl, *Endangered lives. Public health in Victorian Britain*, London, Methuen, 1984, pp. 134–135; Frazer, op. cit., note 1 above, p. 171.

[22] For discussions of the experience of the workings of the Act in practice see Alfred Ashby, 'The duties of Medical Officers of Health in relation to smallpox in view of the altered law of vaccination', *Public Health*,

Resistance to compulsory vaccination had occurred from the outset. John Gibbs, a hydropathic operator who owned an establishment in Barking, published a pamphlet in 1854 called *Our medical liberties,* and forwarded extracts from it in protest to the General Board of Health in 1856.[23] His cousin, Richard Gibbs, helped to found the Anti-Compulsory Vaccination League in 1867 after the extension of the law.[24] Provincial associations became the focus of activity during the 1870s. Isaac Pitman's brother, Henry, for example, tried to popularize the cause with working-class parents from 1869 in Manchester. During the early 1870s, several Boards of Guardians refused to implement the law. The most notable events took place at Keighley, and resulted in the imprisonment of recalcitrant Guardians who had been inspired by the "martyrdom" tactics advocated by the Rev. William Hume-Rothery and his wife Mary, the founders of the National Anti-Compulsory Vaccination League at Cheltenham in 1874. In 1880, William Tebb established the London Society for the Abolition of Compulsory Vaccination, and began a journal, the *Vaccination Inquirer,* in 1879. Its first editor was William White; on his death in 1885, he was succeeded by Alfred Milnes. The London Society was the focus of activity during the '80s and early '90s in lobbying parliamentary support. The local organizations of the movement gravitated towards the metropolitan leadership, and in 1896, Tebb amalgamated the provincial and London organizations into one National Anti-Vaccination League.[25]

Roy MacLeod has characterized the anti-vaccination movement as an example of civil disobedience in Victorian society.[26] He has described the development of provincial societies as representing the more "extremist" philosophies which made local gains but lost the parliamentary battle. These were superseded by William Tebb's London Society for the Abolition of Compulsory Vaccination, which regrouped while in retreat, modified the cause's aims, and concentrated its energies on parliamentary lobbying. There was not always, according to MacLeod, an easy fit between the provincial and metropolitan organization of anti-vaccinationism. Its northern, working-class advocates were not readily persuaded by southern, middle-class intellectuals with their advocacy of "natural healing" and spiritualism. But ultimately, MacLeod claims, victory was achieved by the Tebb vanguard, in dislodging "the network of Government control" through revealing "its functional errors" with regard to compulsory vaccination. Triumph was the result of "widespread agitation, dissemination of information, education", accomplished by "a comparatively small but fanatically earnest section of the population"; therein the anti-vaccinationist movement, MacLeod suggests, "spectacularly exhibits the methods of a late Victorian movement in organising public opinion in favour of better quality and more responsible preventive care".[27]

Our purpose here is not to re-examine the anti-vaccination movement as a typical political pressure group of the Victorian period nor to add to MacLeod's skilful

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1898–99, **11:** 460–469; J. Wright Mason, 'Smallpox in Hull and the experiences of the working of the Vaccination Act, 1898', ibid., 1899–1900, **12:** 265–272.

[23] White, op. cit., note 17 above, pp. 501–509; Stern, op. cit., note 4 above, pp. 62–69.

[24] Ibid.; Lambert, op. cit., note 4 above, pp. 392–393, 445; Wohl, op. cit., note 21 above, pp. 132–133.

[25] Stern, op. cit., note 4 above, pp. 78–83.

[26] MacLeod, op. cit., note 3 above, p. 211.

[27] Ibid, pp. 116–128, 190–197, 207, 210.

account of the politics of pluralism—though we would suggest that the actual size of the anti-vaccination movement, and the extent of its popular appeal, still remain to be fully documented, at least outside its own records. Stuart Fraser, for example, does not view the strength of the movement's influence in Leicester in quite the same light as MacLeod.[28] And the question of its triumph is not straightforward, since the previous successes of vaccination had reduced the incidence of smallpox to a level that made it a less urgent public health issue by the time compulsory legislation was modified in 1898.

Rather, our aim is to document the ideological interface between anti-vaccinationism and public health. Both the anti-vaccinationists and the public health service held philosophies of the prevention of disease. We intend to draw out the dimensions of preventive ideology as it was expressed in the conflict between these two protagonists over vaccination. We do not wish to comment on MacLeod's opinion that anti-vaccinationism was a plea for "better quality and more responsible preventive care". Instead, we shall allow both sides of the ideological interface to articulate their concepts of "responsible" prevention within the historical conflict in which they were engaged. Members of the nineteenth-century public health service, who considered *themselves* to be the embattled vanguard of preventive medicine, certainly did not perceive the concessions gained by anti-vaccinationism as bringing about more responsible preventive care, but rather viewed them as a major obstacle to preventive medicine.[29] What we shall examine in the remainder of this paper are the strategic encounters of anti-vaccinationism with the views of the public health service on the prevention of smallpox.

THE IDEOLOGY OF ANTI-VACCINATIONISM

Ideologically, MacLeod considers the anti-vaccination movement to be part of a wider public distrust of scientific medicine and "new science" and a cherishing of "natural" methods of treatment and "sanitary" methods of prevention. (In his argument, sanitarianism is identified with the well-known figures of the early sanitary movement, Florence Nightingale and Edwin Chadwick, and with their championing of the atmospheric aetiology of disease.) MacLeod also claims that one source of scientific opposition to vaccination arose from anti-contagionists, who contended that the removal of "filth" was the road to prevention, and who denied theories of the specificity of disease.[30]

To what extent this model holds true for the anti-vaccinationist movement overall and for its ideology is not clear. Charles Creighton, one of the movement's most ardent and distinguished spokesmen, is certainly a model example of an anti-vaccinationist who grounded his rejection of the prophylactic method in an anti-contagionist theory of disease propagation. Creighton published his *History of epidemics* in 1881, while still a complete believer in the atmospheric theory of disease causation.[31] He was a

[28] See Stuart M. F. Fraser, 'Leicester and smallpox: the Leicester method', *Med. Hist.*, 1980, **24:** 315–332.

[29] See, for example, the discussions of vaccination in 'Council Minutes', *Society of Medical Officers of Health* 1889–1907, and discussions of compulsory vaccination in *Public Health* throughout the 1890s and beyond the 1907 amendment to the Vaccination Acts.

[30] MacLeod, op. cit., note 3 above, pp. 108–109.

[31] Greenwood, op. cit., note 7 above, pp. 245–273.

prominent member of the London Society and a frequent contributor to the *Inquirer*. Simon has often been characterized as Jenner's main champion during the nineteenth century, and Creighton could by contrast be seen as the leading iconoclast of Jenner's life and work. In his *Natural history of cow pox and vaccinal syphilis,*[32] Creighton argued that vaccination was a foul poisoning of the blood with contaminated material, which could provide no protection from a disease caused by effluvia arising from decaying organic matter. In *Jenner and his vaccination,*[33] Creighton described Jenner as little better than a criminal and money-grabber who had duped Parliament and the scientific and medical worlds into believing in his mythical method.[34]

However, Edgar M. Crookshank, an equally eminent critic of vaccination, certainly did not subscribe to anti-contagionism, being a proponent of the specific aetiology of disease. The first Professor of Bacteriology at King's College London,[35] Crookshank attempted to demonstrate the failure of Jennerian vaccination to reduce the epidemic level of smallpox. In his huge, two-volume study, *Vaccination, its history and pathology,* he questioned the origin of Jenner's lymph, and tried to show that the allegedly prophylactic material had itself been the source of a separate disease, vaccinia, and was responsible for the secondary transmission of syphilis.[36] Thus anti-vaccination did not draw solely upon one single scientific paradigm for its explanations of the failure of vaccination. A re-examination of the rhetoric of the vaccination debate highlights the complex matrix of values and beliefs at the heart of the politics of compulsory prevention of infectious disease.

The inoculators of the eighteenth century had met with a certain degree of religious opposition, which deplored man's interference with the ways of Providence.[37] In the 1850s, John Gibbs combined similar religious arguments with the teaching of his mentor, Vincent Priessnitz (1799–1851), who believed that smallpox should be encouraged because it "relieves the system of humours that ought to be carried out of it, and is a healthy process".[38] Gibbs also subscribed to the displacement theories of Dr Watt from Glasgow, who had suggested that removing smallpox from the community

[32] C. Creighton, *Natural history of cowpox and vaccinal syphilis,* London, Cassell, 1887.

[33] C. Creighton, *Jenner and vaccination,* London, Swan Sonnenschein, 1889.

[34] Creighton, op. cit., note 7 above, pp. 560–567.

[35] See H. W. Lyle, *King's and King's men,* London, Oxford University Press, 1935, pp. 179–181. For discussion of Crookshank's bacteriology department and its role in the development of public health education see Watkins, op. cit., note 10 above; and for its importance to the development of biochemistry see N. Morgan, 'The development of biochemistry in England through botany and the brewing industry', University of London PhD thesis, 1982.

[36] Edgar M. Crookshank, *The history and pathology of vaccination,* 2 vols, London, H. K. Lewis, 1889.

[37] Genevieve Miller, *The adoption of inoculation for smallpox in England and France,* Philadelphia, University of Pennsylvania Press, 1957, pp. 101–133; Hopkins, op. cit., note 3 above, pp. 40–77. For general discussion of inoculation in the eighteenth century see *History of inoculation and vaccination* (XVII International Congress of Medicine, London, 1913), London, Burroughs Wellcome, 1913, pp. 39–50; and for some specific issues see Derrick Baxby, 'A death from inoculated smallpox in the English royal family', *Med. Hist.*, 1984, **28:** 303–307; David Van Zwanenberg, 'The Suttons and the business of inoculation', ibid., 1978, **22:** 71–82.

[38] John Gibbs quoted by Stern, op. cit., note 4 above, p. 63. For discussion of the philosophy of Priessnitz and the reception of hydropathy in England see R. Price, 'Hydropathy in England 1840–70', *Med. Hist.*, 1981, **25:** 269–280; P. S. Brown, 'Social context and medical theory in the demarcation of nineteenth-century boundaries', in W. F. Bynum and Roy Porter (editors), *Medical fringe and medical orthodoxy,* London, Croom Helm, 1986, pp. 216–233. For the life of Vincent Priessnitz see Richard Metcalfe, *Life of Priessnitz founder of hydropathy,* London, Metcalfe's London Hydro, 1898.

simply redistributed mortality amongst other diseases, maintaining a regular, almost fixed level of disease in general.[39] Gibbs thus argued that vaccination was responsible for an increase in mortality due to measles, whooping-cough, scarlatina, and consumption.[40]

After the 1867 Act, the focus of the anti-vaccination campaign shifted to the issue of compulsion.[41] The movement recruited parents who had suffered prosecution as a result of their genuine conviction that vaccination endangered their children's health. But if prosecuted parents formed the rank-and-file, the movement also had the support of numerous luminaries and intellectuals. The sociologist Herbert Spencer used vaccination to exemplify his belief in the folly of expanding the role of the state.[42] Alfred Russel Wallace gave evidence to the Royal Commission in 1889, denouncing the insidious growth of the power of the medical profession[43]—a view later reiterated by George Bernard Shaw.[44] Sir Isaac Pitman was President of the London Society for the Abolition of Compulsory Vaccination, encouraging the audiences at his speeches to take notes in phonetic shorthand.[45] Creighton remained an active member, and was a star turn at annual general meetings of the League.

Creighton always encouraged his fellow members to concentrate their efforts upon Parliament itself, avoiding becoming distracted by local government politics. Without the conversion of Members of Parliament, their cause, he believed, would never make headway.[46] He did, however, put his shoulder to the wheel and graced Gloucester with his presence in 1897, when the anti-vaccination cause had reached its lowest ebb there after the "conversion" of the city to vaccination during the 1895-96 smallpox epidemic.[47] Crookshank remained an ally but not a very visible one. For philosophical eminence the League depended upon F. W. Newman, Emeritus Professor of Latin at University College London.[48] Newman's ringing credo was frequently repeated in the editorials of the *Inquirer*, and sometimes used as the epigraph to an issue: "Against the body of a healthy man Parliament has no right of assault, whatever under pretence of the Public Health; nor any the more against the body of a healthy infant. To forbid perfect health is a tyrannical wickedness, just as much as to forbid chastity or sobriety. No lawgiver can have the right. The law is an unendurable usurpation, and creates the right of resistance."[49]

[39] Robert Watt, *Treatise on chincough, with inquiry into the relative mortality of the diseases of children in Glasgow*, Glasgow, 1913. Watt is also discussed by Creighton, op. cit., note 7 above, pp. 583, 597–600, 629.

[40] White, op. cit., note 17 above, pp. 504–509.

[41] Ibid., 580f; MacLeod, op. cit., note 3 above, pp. 116ff.

[42] Herbert Spencer, *Social statistics*, New York, 1871, pp. 212–213, 263, 285. See also the *Third Report of the Royal Commission on Vaccination*, London, HMSO, 1890, p. 114.

[43] See Alfred Russel Wallace, *Vaccination a delusion, its enforcement a crime*, London, Swan Sonnenschein, 1898; and *Third Report*, op. cit., note 42 above, p. 36.

[44] See the 'Preface' to G. B. Shaw, *The doctor's dilemma*, London, Constable, 1913; 1st ed., 1906.

[45] See *Vaccination Inquirer*, 1896–7, **18:** 183–184.

[46] See Creighton's contributions to the Manchester Conference of the National Anti-Vaccination League in 1897, in *Vaccination Inquirer*, 1897–8, **19:** 111–112.

[47] Ibid., pp. 18, 37–39.

[48] Ibid., pp. 102–103. For discussion and extensive quotation from Newman on his beliefs in anti-vaccinationism see White, op. cit. note 17 above, pp. 544–550.

[49] See, for example, April-June editions of the *Vaccination Inquirer*, 1894–5, **16.** It was used especially for important editions such as 1 June 1896, when the *Inquirer* announced "Our new position" within the

Anti-vaccinationist literature proliferated during the 1870s and '80s. A succession of journals appeared, beginning with Henry Pitman's *Anti-Vaccinator*, which ran for eighteen issues in 1869, before it was incorporated into the journal he had already edited for ten years, the *Co-operator*.[50] Pitman restarted the *Anti-Vaccinator and Health Review* in 1872 with funds from a Leeds councillor, John Pickering, but it lost money and folded in 1874. Subsequently, the Rev. William Hume-Rotherby and his wife Mary (daughter of the radical Member of Parliament, Joseph Hume), who had revived the flagging fortunes of the movement in 1874 by founding the National Anti-Compulsory Vaccination League, started an *Occasional Circular* which they later incorporated into the *National Anti-Compulsory Vaccination Reporter*.[51] William Tebb then established the *Vaccination Inquirer* in 1879, a year before he founded the London Society for the Abolition of Compulsory Vaccination.[52] The *Inquirer* became the voice of the movement.

Individual members of the movement also became prolific authors throughout the 1870s and '80s. Certain minor publications were widely dispersed, including an open letter called *Current fallacies about vaccination*, by P. A. Taylor, Member of Parliament for Leicester, who, alongside Jacob Bright and Charles Hopwood, became one of a number of parliamentary spokesmen for the movement. Two hundred thousand copies were circulated in 1883.[53] Amongst other anti-vaccinationist authors were Alexander Wheeler, A. Milne, Thomas Baker, Charles T. Pearce, George Shaw Lefevre, J. J. Garth Wilkinson, W. J. Collins, and William White. Their books repeatedly demonstrated the fallacies of Jenner's discovery, and often mounted statistical arguments against vaccination. They provided practical advice for those wishing to resist the vaccination laws.[54] Many of these authors were central figures in the movement at different stages in its development, contributing to and reporting for *The Vaccination Inquirer*. A collection of extracts was published as a series of fourteen *Vaccination tracts*, begun in 1872 by William Young, secretary of the London Society, and completed in 1879 by Garth Wilkinson.[55]

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movement after the National Anti-Vaccination League superseded the London Society and took over the journal.

[50] See White, op. cit., note 17 above, p. 544; MacLeod, op. cit., note 3 above, pp. 116–117.

[51] White, op. cit., note 17 above, pp. 578–580; MacLeod, op. cit., note 3 above, pp. 122–124.

[52] White, op. cit., note 17 above, p. 580. MacLeod claims that White himself had been publishing it privately in 1879, and Tebb, together with W. J. Collins and Garth Wilkinson, arranged to subsidize the journal in October 1880 (op. cit., note 3 above, p. 190).

[53] Stern, op. cit., note 4 above, p. 78.

[54] For a selection of texts see: P. A. Taylor, *Speeches of Mr P. A. Taylor and Mr C. H. Hopwood on vaccination . . . from 1883*, London, E. W. Allen, 1883; Alexander Wheeler, *Vaccination opposed to science and a disgrace to English law*, London, E. W. Allen, 1879; John Pickering, *Which? Sanitation and sanitary remedies or vaccination and drug treatment*, London, E. W. Allen, 1892; William Young, *The Vaccination Acts. Powers and duties of magistrates and guardians*, London, E. W. Allen, 1889; Ursula Mellor Bright, *An evil law unfairly enforced*, London, Allen & Young, 1886; C. T. Pearce, *Vital statistics showing the increase of smallpox, erysipelas . . . in connection with the extension of vaccination*, London, [the author], 1877; *idem*, *Vaccination its source and effects*, London, Baillière, 1869; W. J. Collins, *Ought vaccination to be enforced?*, London, reprinted from the *Students' Journal* of St Bartholomew's Hospital, 1882; William Tebb, *Brief story of fourteen years' struggle for parental emancipation from vaccination tyranny*, London, E. W. Allen, 1894; A. Milnes, *The theory and practice of vaccino-syphilis*, London, E. W. Allen, 1891.

[55] Published in a single volume with a preface and supplement, *Vaccination tracts*, London, William Young, 1879.

A wide range of interests was shared by the core of vaccinationist authors and activists. William White, Garth Wilkinson, and Isaac Pitman were already co-believers in the Swedenborgian New Church. White also shared the Pitman brothers' preoccupation with phonetic English and a universal language. Garth Wilkinson was the leading homoeopath of his day, and Charles Pearce, too, was a renowned member of the English Association.[56] F. W. Newman, Peter Alfred Taylor, Jacob Bright, and G. Shaw Lefevre were sympathizers with the feminist movement, the last three speaking with J. S. Mill in the debate on the bill to reform married women's property rights in 1868.[57] Jacob Bright and F. W. Newman both took a stand against the Contagious Diseases Acts, and must have been gratified that Josephine Butler joined the Committee of the Mothers' Anti-Compulsory Vaccination League.[58] William Tebb, together with W. R. Hadwen (see below), was concerned with the issue of premature burial.[59] John Pickering practised hydropathy, as had the founder of the movement, John Gibbs.[60] William Job Collins (Jun.) had a broad professional life outside ophthalmology, and was president of numerous organizations as diverse as the National Peace Congress and the Sanitary Institute.[61]

But if spiritualism, homoeopathy, natural healing, and hydropathy created an "alternative medical" ethos for anti-vaccinationism, an equally strong undercurrent of its ideology lay in a radical liberal perception of the State. In *The coming revolution*, F. W. Newman asserted that modern government had placed the "goddess of EXPEDIENCY" above a philosophy of justice. Justice had been left without a champion, since not only collectivist Toryism, but Benthamites, Liberals, and Radicals as well, all subscribed to the doctrine of expediency.[62] Sanitarianism had led Parliament further down this road than any other political issue, resulting in treatment of the effects of insanitary environments and of vice, rather than prevention of their causes.[63] Newman laid the blame at the door of an overworked Parliament; excessive

[56] For the most recent and detailed discussion of Garth Wilkinson see Logie Barrow, 'An imponderable liberator: J. J. Garth Wilkinson', in Roger Cooter (editor), *Alternatives: essays in the social history of irregular medicine*, London, Macmillan, 1988. For Pearce see C. T. Pearce, *Diarrhoea and cholera: their homeopathic treatment and prevention*, Northampton, Clifton, 1853.

[57] See Francis W. Newman, *A lecture on women's suffrage*, Bristol, the Athenaeum, 1869; Jacob Bright, *The speeches of Mr. Jacob Bright M.P., Robert Lowe M.P., Mr J. S. Mill M.P., and Mr G. Shaw Lefevre M.P., in the debate on the second reading of the Bill to Amend the Law with Respect to the Property of Married Women*, Manchester, A. Ireland, 1868.

[58] Francis W. Newman, *The theory and results of the Contagious Diseases Acts of 1864, 1866, 1869*, Bristol, 1870; Jacob Bright, *The Contagious Diseases Acts. Speech delivered in the House of Commons, July 20, 1870*, Manchester, Ireland, 1870. For listing of the Committee and Officers of the Mothers' Anti-Vaccination League see An Anti-Vaccinator (pseud.), *A New Year's gift to the Lord Provost, Magistrates and Town Council of the City of Glasgow 1st January 1874*, Glasgow, Thompson, 1874, pp. 50–51.

[59] William Tebb and E. Perry Vollum, *Premature burial and how it may be prevented*, 2nd ed., edited by W. R. Hadwen, London, Swan Sonnenschein, 1905. See Beatrice E. Kidd and M. Edith Richards, *Hadwen of Gloucester. Man, medico, martyr*, London, Murray, 1933, pp. 146–147.

[60] See John Pickering, *The smallpox epidemic in Gloucester from April 20th–June 5th 1896 and the water cure*, London, E. W. Allen, 1896.

[61] See W. J. Collins, *Armaments and policy* (Presidential address read 29 June 1909 at the National Peace Congress held at Cardiff), Westminster, National Council of Peace Societies, 1909; *J. R. Sanitary Inst.* 1906, 10.

[62] Francis W. Newman, *The coming revolution*, Nottingham, Bailey & Smith, 1882, p. 3.

[63] Ibid., p. 5.

business extended into the midnight hours, when sparsely attended chambers passed "stealthy and secretive legislation", designed by a clique of intriguers, notable medical conspirators, to accomplish their despotic ends. First, they achieved "in 1848 . . . their compulsory Act for polluting our rivers"; then, they legalized moral pollution by licensing "service men's sensuality" with the grossly unjust Contagious Diseases Acts; and finally, they brought in "a compulsory pollution of our veins".[64]

Newman's moral indignation at the presumptuous paternalism of the expedient State had been clearly expressed in the literature of the 1870s in both John Pickering's journal and the Hume-Rotherys' analyses. In his *Vaccination and the vaccination laws: a physical curse and a class tyranny,* William Hume-Rothery pointed out, in tones redolent of Mill, that an overprotective State undermined individual responsibility, "and it is only by the voluntary and judicious exercise of their own powers that the people can progress; it is clear so far as the State does for them . . . the duties which are within their own sphere and competence, to that extent it limits and retards their development".[65] On this basis, he suggested, "if even vaccination were the greatest blessing in existence it would not be the duty of the State to enforce it", for each must be free to choose for himself.[66] And "as to their children: If good parents may not do what they conscientiously believe is best for them . . . then there would be an end to civil and religious liberty."

A key text in the anti-vaccination literature was written by the first editor of the *Vaccination Inquirer,* William White.[67] His 'Story of a great delusion' was serialized in "matter-of-fact chapters" in the first issues of the *Inquirer,* and published as a separate volume in 1885. A careful examination of White's text is made here because it summarizes the quintessential elements of anti-vaccinationism. He was labelled by later editors of the *Inquirer* as the "historian" of the movement, and his text clearly fulfils the role of an intellectual biography of anti-vaccinationism. White's text runs the gamut of doctrines used by the anti-vaccinators in the 1870s and '80s. It mainly comprises a critical history of inoculation, vaccination, and the vaccination laws. It contains the familiar scathing attack on Jenner and his supporters, and is highly critical of eighteenth-century inoculators such as Lady Mary Wortley Montagu's surgeon Charles Maitland and Cotton Mather.[68] Interestingly, White acknowledged the debt

[64] Ibid., pp. 5–11.

[65] Rev. William Hume-Rothery, *Vaccination and the vaccination laws: a physical curse and a class-tyranny,* Manchester, Tulley, 1872, p. 15.

[66] Ibid.

[67] William White was a bookseller from Glasgow who became a prominent Swedenborgian, as was his fellow anti-vaccinator J. J. Garth Wilkinson. White was appointed as the Swedenborg Society's manager in 1854, and its official publisher after some degree of controversy during 1863. He wrote a biography of Swedenborg, which went into numerous editions and was also published in America. Apart from other spiritualist tracts, he also wrote about the need for phonetic spelling and supported the case for the invention of a universal language. Besides the *Great delusion* he wrote a number of separate volumes on anti-vaccinationism. See William White, *Swedenborg: his life and writings,* London, [the author], 1856, reprinted from the *Phonetic Journal,* Bath, Isaac Pitman, 1856; *idem, The universal language. An argument for a reformed orthography as a means of aiding the universal diffusion of the English language,* London, Frederick Pitman, 1854, Bath, Isaac Pitman, 1854, Glasgow, [the author], 1854; *idem, Reasons for the phonetic representation of the English language,* reprinted from the *Phonetic Journal,* Bath, Isaac Pitman, 1870; *idem, Sir Lyon Playfair taken to pieces and disposed of: likewise Sir Charles Dilke,* London, E. W. Allen, 1884.

[68] White, op. cit., note 17 above, pp. 1–196.

owed by the anti-vaccination movement to those inoculators who had registered their protests during the early days of the new method. Yet he also distances his own movement from them: "Whilst we have no reason to identify ourselves with that resistance, we have to recognize the service rendered by the variolators in observing the results of vaccination—the persistency with which they traced and exposed its failure to prevent smallpox and the injuries and deaths it caused."[69] The hypocrisy of the inoculators' philosophy—which professed "immeasurable horror at the profanation to humanity by injection with bovine disease" while actually safeguarding their own financial interests—was also pointed out by White. Money, he believed, was generally at the root of all the evils of both the inoculators and the vaccinators. Most clearly, it was the driving force behind Jenner himself.[70]

White's account of Jenner emphasized a distinction which, he claimed, Jenner himself recognized, between ordinary cowpox and cowpox derived from horsegrease. White claimed that Jenner used this latter disease category, at first to distance himself from the milkmaids' claims to immunity (which, he alleged, had been proved false), but later had dropped it in order to avoid public horror at the filthy origin of his vaccine.[71] Jenner's tactical use of scientific explanations of his prophylactic was simply part of his overall strategy of gaining wealth and fame. "He wanted money. He saw how the wind was blowing. He said not another word about horsegrease cowpox; and as the public were eager at any price to escape from the nuisance of smallpox inoculation, and disposed to substitute cowpox as a harmless substitute, why then he resolved to go in for cowpox, and pose as its discoverer and promoter."[72]

White gloated over the demonstrable failure of single vaccination to provide lifelong protection, and scoffed at the introduction of re-vaccination. The latter (he claimed) was absurd, since smallpox had its chief incidence "among the young, in whom it cannot be pretended that the influence of primary vaccination is exhausted". A similar logic was used to dismiss the historical case for vaccination as a whole. White claimed that there was as yet no statistical proof of increased protection from either contracting or dying from smallpox, because: "to make a fair comparison between the vaccinated and unvaccinated, it would be necessary to compare class with class, physique with physique, age with age. In other words, the subjects of smallpox should be constitutionally equal, their difference being limited to vaccination present or vaccination absent."[73] This basic principle was taken up extensively by numerous authors in the *Vaccination Inquirer,* who compiled their own alternative analysis of rates of smallpox incidence and mortality to prove the case against the increased likelihood of the unvaccinated to catch, and (more clearly) to die of the disease. White also introduced a favoured plank of the anti-vaccination argument with regard to

[69] Ibid., p. xiii.

[70] Ibid., pp. 177–196.

[71] Ibid., pp. 109–134, 152–158, 170–180. For current discussion of the Jenner vaccine, see Derrick Baxby, *Jenner's smallpox vaccine. The riddle of vaccinia virus and its origin,* London, Heinemann, 1981. For a case history concerning cowpox derived from horsegrease, see John M. T. Ford, *A medical student at St Thomas's Hospital, 1801–1802. The Weekes family letters,* (*Medical History,* Supplement No. 7), London, Wellcome Institute for the History of Medicine, 1987, pp. 112–113.

[72] White, op. cit., note 17 above, p. xv.

[73] Ibid., p. xxxv.

death rates, by claiming deliberate duplicity on the part of the medical profession in the registration of deaths. He contested that "over and over again it has been proved that vaccinated patients dead of smallpox have been registered as unvaccinated, their death being taken as evidence of the absence of the saving rite". As a counter-attack, White attempted to mount a statistical argument demonstrating that vaccinia itself was an epidemic disease, induced by the practice of vaccination and carrying with it a high fatality rate.[74]

This form of statistical warfare against pro-vaccinationism was deployed by other authors such as Alfred Milnes to justify the cause for "sanitation" in place of "vaccination". White, however, took a different tack, condemning the sanitarians for spending money under "the novel persuasion" that sickness could be prevented rather than cured. The sanitarians had created a public mood that allowed medical "place-hunters" and unscrupulous gold-diggers to exploit the public purse for such spurious but profitable practices as vaccination.[75] Those elements of the medical profession that lent their support to vaccination, White claimed, were "chiefly confined to those who represent the trade element of the profession—men who would defend any abuse, however flagrant, if established and lucrative". They were, in his view, the true descendants of the money-grabbing Jenner. Many medical men, White believed, truly doubted the wisdom of vaccination, but they "excuse their acquiescence in the delusion (after the manner of ecclesiastics) by the exigencies of professional loyalty; and by the supposition that the harm of the practice is exaggerated, whilst it serves for the consolation of the vulgar."[76] This was a house built on sand, which (White believed) would crumble easily in the conflict with the anti-vaccination cause because "The fortifications are undermined; the bulwarks are rotten through and through". Instead, "we place our confidence in the omnipotent favour of the truth", in which he was convinced that the anti-vaccinators held a monopoly.

White described the earliest objections made to vaccination by opponents of the method such as William Cobbett. In his *Advice to a father,* Cobbett had stated that he always objected to the cowpox scheme from its first mention "merely on the score of its beastliness".[77] But, as White showed in his analysis of Cobbett's case, the fundamental foe was parliamentary regulation itself.

> I like not this never-ending recurrence to Acts of Parliament. Something must be left, and something ought to be left, to the sense and reason and morality and religion of the people. There are a set of well-meaning men in this country, who would pass laws for the regulating and restraining of every feeling of the human breast and every motion of the human frame; they would bind us down . . . as the Lilliputians did Gulliver . . . . But I trust Sir, that Parliament . . . never will . . . pass laws for taking out of a man's hands the management of his household, the choice of his physician, and the care of the health of his children; for under this domiciliary thraldom, to talk of the liberty of the country would be the most cruel mockery.[78]

White attempted to demonstrate that the spirit of Cobbett's philosophy remained at the heart of the subsequent resistance to the vaccination laws, which had realized

[74] Ibid., pp. 464–500.
[75] Ibid. p. xlviii.
[76] Ibid., p. xlix.
[77] *Vaccination tracts,* op. cit., note 55 above, Tract 3, p. 6.
[78] White, op. cit., note 17 above, pp. 306–307.

Cobbett's fears of the emergence of "a measure to be adopted in no country where the people are not vassals or slaves".

Against this background of distrust of the medical profession and of its capacity to dupe Parliament and the public, the *Vaccination Inquirer* levelled its attack against the principle of compulsion in respect of laws relating to the health of the individual. The first issue of the journal clearly stated that the aims of the organization were to combat medical despotism in its worst forms, the Compulsory Vaccination Acts.[79] Comparison was made of the general support of liberty to the Contagious Diseases Acts, but this was done to any great extent only in the first editorial, and little future reference was made to it or to the National Association for Abolition.[80]

The *Inquirer* claimed to serve both the aims of those believing vaccination to be entirely injurious and the cause of those unconcerned about its efficacy, but implacably hostile to compulsion. The movement sought to end what it saw as the persecution of parents and the sinister oppression of the people by Parliament.[81] The journal claimed that the movement had sympathizers amongst those who believed that the current state of the law—especially its cumulative penalties—was iniquitous and required modification. It claimed this was indeed the view of the Gladstone administration.[82] To infuse children's blood was (it believed) an atrocity; to recommend such action was enough to "lay low the credit of any medical man"; but "to command it is a gross usurpation in a legislative body".

From the beginning, the *Inquirer* pressed the case for a conscience clause as a first step towards the abolition of compulsion. The opening editorial used the example of conscientious objection to religious education in schools to illustrate the case for conscientious objection to vaccination. Another parallel lay in the Quakers' objection to bearing arms.[83]

The whole tenor of the *Inquirer* was from the outset anti-medicine and anti-science. Even the notion of "scientific research" was dismissed essentially as quackery, whereby the "unknown" sought to achieve fame with their "fleeting hypotheses . . . as ludicrous as anything that Swift imagined in the University of Laputa".[84] The journal enthusiastically welcomed, however, scientists and medical men who became converted, such as Wallace and Crookshank. It drew upon regular medicine most heavily in its discussions on vaccino-syphilis, where Jonathan Hutchinson and Crookshank were heavily cited. Anti-vaccinationism took what was useful and left the rest—a procedure exemplified in the use made of Hutchinson's work by Alfred Milnes, the second editor of the *Inquirer*.[85] He acknowledged the value of the case-studies that demonstrated the transmission of syphilis through vaccination, but chose to ignore

[79] *Vaccination Inquirer*, 1879–80, **1**: 1.

[80] For discussion of the overlap between the membership of radical and fringe societies see Mary Ann Elston, 'Women and anti-vivisection in Victorian England', in N. Rupke (editor), *Vivisection in historical perspective*, London, Croom Helm, 1987, pp. 259–294.

[81] *Vaccination Inquirer*, 1897–8, **19**: 46–47.

[82] Ibid., 1879–80, **1**: 1, 2.

[83] Ibid., pp. 7–8.

[84] Ibid., p. 6.

[85] See Alfred Milnes, *Theory and practice of vaccino-syphilis*, London, Allen, 1891, which reprints the editorial discussion of Hutchinson's work published in the *Inquirer* during 1891.

Hutchinson's conclusion that this possibility could be eliminated through the use of calf-lymph. There was a constant onslaught against all developments of the germ theory of disease, in line with the tradition established in the 1870s by John Pickering.[86] In the bacteriological era, the attacks were directed mainly at Pasteur—though the successes of Pasteur and Koch through the '80s were met with increasingly cautious criticism.

The papers of Dr William J. Collins argued the case against the germ theory more fully in terms of its inconsistencies in theory and experimental proof, noting that there were many factors in disease inoculation not yet fully understood. Collins suggested, for example, that Pasteur had two basic propositions regarding disease. The first was that "pure air in respect of the oxygen it contains is capable of attenuating and destroying the *materies morbi* of some and perhaps all of the virulent zymotic diseases". The second was that inoculation confers absolute resistance to infection. Collins suggest that the former proposition was built on rock and the latter on sand. The first justified universal sanitation and the latter universal vaccination. The former remained uncontested and the second was still to be proven.[87]

DISEASE PREVENTION: THE IDEOLOGICAL INTERFACE BETWEEN ANTI-VACCINATIONISM AND PUBLIC HEALTH

The *Inquirer* was anything but single-minded in its approach to the scientific basis to vaccination and the prevention of infectious disease. Sanitarianism, for example, was often confusingly represented in the *Inquirer;* sometimes it was seen as a system of environmentally-based structural engineering on the one hand, and as a system of isolation and notification on the other.[88] Yet amongst contemporary hygienists and practitioners of preventive medicine, such as Medical Officers of Health, a fundamental difference was drawn between the two. Sanitary enginering was a generalized approach to the elimination of disease through public hygiene. The original sanitarians based their approach on a belief in the atmospheric theory of disease causation. They attacked filth and disease in general instead of dealing with specific diseases in particular. Notification and isolation, by contrast, formed a method of preventing specific diseases transmitted through social contact. It was always based upon a contagious or germ theory of disease, and during the 1890s, agitation for compulsory notification was supported by bacteriological aetiology.[89]

The *Inquirer* consistently derided the public health service, and did battle with individual Medical Officers of Health, such as J. C. McVail, M.O.H. for Stirling, who completed a penetrating analysis of the Jennerian vaccine material and a statistical account of the effects of vaccination and sanitation in reducing smallpox in Glasgow.[90]

[86] See the *Anti-Vaccinator and Public Health Journal,* 1872, **1:** 65–66.

[87] *Vaccination Inquirer,* 1880–81, **2:** 5–6; 1882–3, **4:** 46–47.

[88] 'Vaccination versus sanitation', ibid., pp. 108–109; see also William Tebb, *Sanitation not vaccination the true protection against smallpox,* Westminster, London Society for the Abolition of Compulsory Vaccination, 1882.

[89] For discussion of the contemporary "preventive ideal" amongst the broad preventive community and its relation to scientific theories of disease see Watkins, op. cit., note 10 above, pp. 320ff.

[90] J. C. McVail, 'Cowpox and smallpox: Jenner, Woodville and Pearson', *Br. med. J.,* 1896, **i:** 1271–1276; *idem,* 'Vaccination or sanitation?', *Public Health,* 1895–6, **8:** 266–270. See 'McVail unveiled', *Vaccination Inquirer,* 1893–4, **15:** 170–172; 1894–5, **16:** 20–22, 38–40.

Francis Bond, M.O.H. for Gloucester Rural District, promoted the Jennerian Society to combat the propaganda of the League throughout the 1890s, and was another with whom the *Inquirer* was locked in controversy.[91] But the journal revealed an overall contradiction within anti-vaccinationism as to the issue of compulsion itself. The most striking instance of this was the support the whole movement gave to the experimental method for preventing smallpox established in Leicester during the 1870s.

William Johnston, M.O.H. for Leicester, developed a method aimed at preventing smallpox which deployed the existing hospital services together with a system of compulsory notification to isolate smallpox victims and their contacts. Diffusion of the disease was drastically reduced, and any major outbreak was prevented till 1892. During that year, an M.O.H., Joseph Priestley, misdiagnosed a case of smallpox as chickenpox, leading to an outbreak beginning in the local hospital and running rapidly throughout the community. Johnston and Priestley were both supporters of vaccination, but the local sanitary authority became antagonistic to a policy of prophylaxis. Priestley's attempts to reintroduce it during the 1892–93 epidemic failed, but the community fared tolerably without it, as the result of the efficient working of the notification and isolation systems. The Anti-Vaccination League had founded a branch in Leicester in 1869, and the movement encouraged default against the law. After 1878, default expanded rapidly, and by 1895, there were three thousand parents awaiting prosecution. The League held a large demonstration in Leicester in that year, and in 1886, the new Board of Guardians was composed entirely of members elected on an anti-vaccinationist programme.[92]

The historian of the Leicester method, Stuart Fraser, has claimed that the unpopularity of vaccination in Leicester was not the result of successful propaganda from the League, but rather marks the achievement of an alternative method of prevention. The inhabitants, he argues, viewed the hazards associated with vaccination as outweighing its value, in the light of the alternative means of prevention, via isolation. The method, as Fraser has pointed out, was one which unified the existing health facilities in Leicester on the basis of a theory about the contagiousness of smallpox.[93] The Leicester method incorporated the "new germ theories"[94] in the same way as the broader movement pressing for national compulsory notification was legitimated by M.O.H.s through the bacteriological explanation of the disease process. The support given to the Leicester method by the Anti-Vaccination League thus implicitly acknowledged the germ theory of disease. It confused sanitation based on atmospheric theories with preventive medicine based upon bacteriology.

[91] See the reports of the 'Controversy in *The Times*' between Bond, Hadwen, and Tebb in the *Vaccination Inquirer*, 1898–99, **20:** 91–96, 105–107.

[92] Fraser, op. cit., note 28 above. For further discussion of Leicester, see Dale-L. Ross, 'Leicester and the anti-vaccination movement, 1853–1889', *Leicester Archaeological and Historical Soc., Trans.*, 1967–8, **43:** 35–45.

[93] Fraser, op. cit., note 28 above, pp. 323–332.

[94] Ibid., p. 332. Fraser comments on William Johnston, the author of the "Leicester Method": "It is uncertain where Johnston gained his earlier experience and interest in epidemic diseases, but it is certain that he represented the newer generation of doctors believing in "germs" and prepared to apply the new scientific techniques to medicine and public health, so ousting the older generation of doctors, including his predecessor Dr. Crane, who still believed in miasmatic theories."

On the one hand, the *Inquirer* claimed that in Leicester, the money extracted in fines from defaulting would be better spent to "secure pure air in their rooms, cleanliness in their habits, and good drainage in their houses, the neglect of which was after all the real cause of smallpox and all similar diseases."[95] On the other hand, the anti-vaccinationists accepted that smallpox was carried by contagion, and that the isolation system thus provided the community with complete immunity from this disease. The *Inquirer* stated, in 1882, that in Leicester: "with such precautions as the authorities are able to take, it is next to impossible that an outbreak could ever occur."[96]

The original sanitarians of the Chadwickian era were opposed to policies of quarantine, precisely because they believed that disease was propagated by indiscriminate miasmata in the atmosphere.[97] The anti-vaccinationist movement was proud of Leicester as its capital city during the 1880s, thanks to its quarantine system—and this despite the fact that it claimed to represent true sanitarian principles, contending that the real way to prevent the spread of smallpox lay in efficient sewerage and drainage engineering.

Some of these contradictions in the philosophy of the anti-vaccinationists with regard to disease prevention became even more evident during the Gloucester epidemic of 1895–96.

In 1894, the *Inquirer* claimed that Gloucester—"Jenner's own Gloucester"—was then "the least vaccinated city in the country, its percentage of default, according to the latest Local Government Board Report, amounting in 1890 to 83.2%". Indeed, the resistance to vaccination in Gloucester was recorded by a "pro-vaccinationist" member of the Board of Guardians, John Simpson Calvertt. On 1 April 1895, he noted that at a meeting of the Board "17 voted for Compulsory vaccination, 11 against, and 5 Neutral!!!". He also recorded that, "Vaccination been neglected at Gloucester for some years, Small pox very virulent—quite a Plague-smitten Town—shunned by all who can evade going to the place for any purpose—quite an object lesson for the Country."[98]

The *Inquirer* took Dr Francis Bond, the M.O.H. for the rural combined district of Gloucestershire, to task on this occasion for his assertion that smallpox was a contagious disease, passed via the inhaled infectious material flaking off from the dried pustules of a sufferer. Bond had written a public address to a major anti-vaccinator in the city of Gloucester, Mr George Newman, a member of the Board of Guardians, in which he denounced the theory that sanitation alone would prevent smallpox diffusion; for, argued Bond, it was not a filth disease. The reply of the *Inquirer* was that this type of "muddle-headed old error" was to them as sanitarians "the worst evil of the Jennerian superstition".[99] The "sanitationist" view was that: "Of course sanitation will not avail a man who comes into contact with the infection of smallpox. But the availing of sanitation is precisely this—that it shall prevent him coming into contact

[95] *Vaccination Inquirer*, 1879–80, **1:** 56.
[96] Ibid., 1882–3, **4:** 80.
[97] Margaret Pelling, *Cholera, fever and English medicine 1825–65*, Oxford University Press, 1978, pp. 26–30, 74–75.
[98] Celia Miller (editor), *Rain and ruin. The diary of an Oxfordshire farmer, John Simpson Calvertt, 1875–1900*, London, Alan Sutton, 1983, p. 227.
[99] *Vaccination Inquirer*, 1894–5, **16:** 17.

with it."[100] According to its own logic, the anti-vaccination movement in Gloucester must have had considerable faith in the efficiency of the sanitary system of the city, for the *Inquirer* proudly noted that although there had been three cases of smallpox notified in the city in 1893, no epidemic had resulted. With the introduction of the "inflammable material" into the city, it should, they suggested, have been decimated, according to the logic of the doctors' argument. The fact that no diffusion had occurred proved "clearly that the doctors can't learn logic".

But their own argument regarding Gloucester became entirely contradictory once the epidemic of 1895-96 broke out. In 1894, the *Inquirer* was proud to announce that a largely unvaccinated city had suffered three smallpox cases without diffusion taking place. In the same article, it had argued with Dr. Bond that diffusion depended upon insanitary conditions, and that prevention rested upon environmental cleanliness. Implicitly then, it can be taken that the anti-vaccinationists believed that the prevention of smallpox in Gloucester had been the result of good sanitation.[101]

The *Inquirer* did not report any news of the Gloucester epidemic until March 1896.[102] By this time, the city had been in the throes of smallpox since June 1895. In March 1896, it was reaching its highest levels, with 150 new cases a week being notified. The peak came during April and May, when new cases reached almost 300 a week.[103] The report in the *Inquirer* claimed that the medical profession had exaggerated the panic in Gloucester, and later their "on the spot" champion declared that this panic was entirely artificial and unnecessary.[104] Indeed, the epidemic had made anti-vaccinators sick of the sound of the name itself, and complained that they heard of "nothing but Gloucester, Gloucester, all the time".[105]

The main voice of the anti-vaccination movement in Gloucester was Walter R. Hadwen. During the 1870s and '80s, he was working as a "chemist" in Highbridge and was prosecuted for refusing to have his children vaccinated.[106] Hadwen became medically qualified and moved to Gloucester. He subsequently provided the *Inquirer* with a number of articles on the "physician's view of vaccination".[107] At the height of the epidemic, he held a public meeting in the city, and conducted a highly publicized controversy with Francis Bond in the *Citizen*, a local newspaper edited by a member of the League, Lieutenant General A. Phelps. The other main local support for the anti-vaccination movement was Mr George Newman, secretary of the Gloucester branch of the League, and a member of the city council from 1896.

Hadwen based the defence of the anti-vaccination cause in Gloucester on an attack on the "insanitary standards" of the city. Diffusion, he claimed, was entirely the result of filthy sewers and drains in the southern part of the city where the epidemic had started and to which it had been confined.[108] Newman took a similar line, and the

[100] Ibid., p. 18.
[101] Ibid., pp. 17–18.
[102] Ibid., 1895–6, **17:** 161–162.
[103] *Public Health*, 1896–7, **9:** 214.
[104] *Vaccination Inquirer*, 1896–97, **18:** 151.
[105] Ibid.
[106] Kidd and Richards, op. cit., note 59 above, pp. 82–85.
[107] *Vaccination Inquirer*, 1895–6, **17:** 150–153.
[108] Kidd and Richards, op. cit., note 59 above, pp. 98–118.

anti-vaccinationists did battle with the public health authorities in a propaganda war waged in the local newspapers. Hadwen had long been a subscriber to the theory that systematic sanitation would reduce smallpox.[109] The *Inquirer* mounted a strong defence of anti-vaccinationism against the implications of the epidemic, echoing the Hadwen line, but often confusing its theory of environmental sanitation with the practice of isolation from contagion. "Gloucester has long been known as an insanitary city; and our good friend Mr Newman, so long ago as the autumn of 1891, in giving evidence before Commission, pointed out that the city had no efficient system of isolation, and in fact a totally insufficient hospital provision. Thus the present outbreak is just the natural consequence of the neglect of real sanitary precautions."[110] The journal lamented the "exasperating success" that the medical profession had had in working up a panic, especially when it had led to some notorious desertions from the anti-vaccinationist ranks, when well-known Gloucester League members had come forward for voluntary vaccination.[111] The *Inquirer* supported Lieutenant General A. Phelps, the editor of the *Citizen* and a later president of the National League, in his publications in *The Times,* which placed the responsibility for the outbreak squarely upon the allegedly inadequate sewage system in the southern half of the city.[112] Phelps had used his newspaper to publicize claims that Gloucester had long been the victim of an "intolerable stench" arising from the sewer manholes. Hadwen claimed to have traced the development of the epidemic directly along the line of sanitary defect, with the incidence occurring "from manhole to manhole."[113]

The high death rate experienced during the epidemic (as the city's M.O.H. pointed out, the attack had been shorter but many more times severe than any previously experienced in Gloucester) was the result, so Dr Hadwen and the *Inquirer* claimed, of inadequate hospital accommodation. Hadwen argued that horrific conditions existed at the isolation hospital, where children were packed "two, three, or even four in a bed": "Not a drop of water was applied to their bodies, nor was oil allowed for their faces nor antiseptic lotion for their eyes. The offensive linen was thrown in a heap in an adjoining room and left for weeks; vermin crawled over the beds, the hands of the children were unprotected, and nurses and patients have described to me the horrible sight which the bleeding faces of some of the little sufferers presented."[114] Hadwen believed that this disgraceful state of affairs was corrected only when a Dr. Brooke arrived from London and put matters to rights, employing "a treatment consistent

[109] *Vaccination Inquirer,* 1895–6, **17:** 139–43, 153.

[110] Ibid., 1896–7, **18:** 1.

[111] Hadwen himself was accused of having his children vaccinated at Cheltenham. His biographers attempt to demonstrate this as a false slander, and mention that a certain "notable anti-vaccinationist of Gloucester, a newspaper proprietor" was indeed vaccinated. General Phelps owned the *Citizen,* but they do not refer to him specifically. John Campbell, M.O.H. for Gloucester, also implicates Phelps as the newspaper proprietor and chairman of the local branch of the League who was vaccinated during the epidemic. See *Public Health,* 1896–7, **9:** 214. Hadwen was beset by ethical controversies. He was accused of unprofessional advertising by the British Medical Association and debarred from membership. He also initiated and won a case for libel, in which he claimed that it had been falsely alleged that he had wrongly certified a child who died of smallpox as dying of a disease of the brain. See Kidd and Richards, op. cit., note 59 above, pp. 163–176, 180–183.

[112] Vaccination Inquirer, 1896–7, **18:** 19.

[113] Ibid., p. 152.

[114] Ibid., p. 151.

with the advanced medical ideas of modern times". Hadwen was himself, however, a supporter of heterodox therapeutics, being an advocate of the hydropathic ideas of John Pickering, his colleague from the League, who operated in the district using nurses who (Hadwen claimed) remained unvaccinated and unaffected by smallpox.[115] In reality, all of Pickering's nurses save one were unvaccinated but all contracted smallpox.[116]

The object lesson of the Gloucester epidemic was, Hadwen claimed, that smallpox was a "filth disease"; and the *Inquirer* agreed with him. At the end of the epidemic, the journal considered the most appropriate action should be an inquiry into hospital administration to answer cases concerning the high fatality rate.[117]

John Campbell, the M.O.H. for the city of Gloucester, wrote his reply to the anti-vaccinationist view in his annual report for 1896, and later published a history of the epidemic in *Public Health* in March 1897.[118] Francis Bond, the county M.O.H., had engaged in a propaganda war, alongside his colleague David S. Davies, M.O.H. for Bristol, throughout 1895–96, and was at the centre of the public health activity during the epidemic. Campbell claimed that Gloucester had had a history of efficient sanitation since 1875, with a demonstrable reduction in mortality from zymotic diseases being achieved steadily up to the date of the epidemic. He also pointed out that the area in which the smallpox was confined was in one of the newest parts of the city, least densely populated at 31.4 people per acre. The older and more densely populated areas with up to 64.3 people per acre had escaped the epidemic entirely. The southern part of the city was inhabited largely by young people in semi-detached villas with an efficient sewer system and healthy surroundings. The epidemic was contained within this area, Campbell claimed, through efficient immediate removal of all cases from other areas in the town and through the rapid conversion to vaccination, which happened within the first months of the outbreak.[119] He traced the origin to two unnotified cases: the children of a travelling salesman living in Midland Road. The public health authorities had found out about these cases only because the family had sent one daughter away to Scotland while still convalescing, and had had the house disinfected. The epidemic spread outwards as a result of contacts with the household, before the authorities had knowledge of it. Campbell complained of slowness of action by the sanitary committee, which allowed the epidemic to spread. Eventually, house-to-house vaccinators were employed, additional hospital accommodation provided, and disinfecting machinery purchased. The epidemic was thus severe, but (owing to the extensive vaccination campaign) short-lived.[120]

There were no cases amongst children vaccinated in infancy, under the age of seven. Predominantly, the smallpox victims were over ten years old—those who had been vaccinated in infancy but not revaccinated subsequently. There were 881 cases which had not been vaccinated at all. There were only twenty-three cases amongst under-tens

[115] Ibid., 1897–8, **19:** 113. See Pickering's own account, op. cit., note 54 above.
[116] *Public Health*, 1896–7, **9:** 216.
[117] *Vaccination Inquirer*, 1896–7, **18:** 78.
[118] *Public Health*, 1896–7, **19:** 210–218.
[119] Ibid., pp. 211–212.
[120] Ibid., pp. 213–218.

who had been vaccinated, and none amongst vaccinated under-sevens. There were 687 cases amongst unvaccinated under-tens. Amongst the under-tens there were 287 deaths, none of them from vaccinated children. The adult deaths occurred either amongst people who had not been sufficiently revaccinated, or who formed cases of alcoholism or syphilis.[121] The statistics at Gloucester, Campbell claimed and the Society of Medical Officers of Health concurred, made a strong case against the anti-vaccinationists.[122]

The epidemic occurred just as the Royal Commission on Vaccination was about to deliver its report. The anti-vaccination lobby had fought for its case throughout the seven years of its investigations. Alfred Milnes, the second editor of the *Inquirer*—White's successor—offered an extensive re-interpretation of the Gloucester case, in which he was opposed by Francis Bond's reports.[123] The League achieved the conscience clause in the new Vaccination Act of 1898 that they had demanded for so long. This was deplored by the public health profession, which saw it as the first stage in dismantling compulsory vaccination.[124] The new law, however, proved extremely difficult to implement, and prosecutions for default continued. Medical Officers of Health grumbled about the difficulties of working the new law and their new responsibilities with regard to the supply of calf-lymph. The removal of default prosecutions from the magistrates court under the amendment act of 1907 further reduced the power of compulsion; and this, together with the great diminution of smallpox incidence, led to defaulting rates rising generally. By far the majority of the community throughout the kingdom remained vaccinated in the latter half of the nineteenth century and it is unknown how many defaults resulted from negligence rather than conscience.

SUMMARY

In 1891, London witnessed Elie Metchnikoff and Emile Behring, together with his partner Kitasato, fiercely arguing out their theories of immunity, when it played host to the International Congress of Hygiene and Demography.[125] By this date, an intellectual community existed in England which had grasped the bacteriological baton in its definition of "preventive medicine". Medical Officers of Health were a prominent faction within this intellectual community, and they accorded the virtues of vaccination a new legitimate authority. The entire ideological spectrum of preventive medicine during this period has been discussed elsewhere,[126] but it was a composite of medical, biological, and socio-economic theories bound up in a revised environmental philosophy of prophylaxis.

[121] Ibid., 1896–7, **9:** 216–217.

[122] Ibid., 1897–8, **10:** 100.

[123] *Public Health* reprinted extracts from a broad statistical analysis of the relation of vaccination to smallpox deaths up to 1887 which Milnes had also presented before the Royal Statistical Society during 1896, together with extensive criticism of his methods and extrapolations. See *Public Health*, 1896–7, **9:** 319–326.

[124] Ibid., 1897–8, **10:** 231–232, 340.

[125] Watkins, op. cit., note 10 above, pp. 381–394.

[126] D. Porter and R. Porter, 'What was social medicine? A historiographical essay', *Historical Sociology*, 1987, **1:** 90–106, D. Porter, 'Public health and the town planning movement: preventive medicine and

The ideology of prevention, within anti-vaccinationism, was neither single-minded nor, necessarily, internally consistent. It did, however, advertise itself as keeping faith in one particular theory of environmental prevention, which echoed the Chadwickian notion of the "sanitary idea". The ideologues of preventive medicine saw the Chadwickian "idea" as outmoded and at best "only a first approximation of the truth",[127] and one which had been superseded by the specific aetiology of disease. The ideological interface between anti-vaccinationism and public health in the late-nineteenth century was, to some extent, caught up in this revisionist programme of preventive medicine to redefine the epistemological boundaries of environmentalism and the professional standards of its practical application.

The anti-compulsory vaccination movement won a compromise in the parliamentary battle, but the extent to which it did so, thanks to sustained popular success in convincing the wider political nation, is still obscure. The extent and character of its support remain unclear, beyond the well-known figures who were prominently active. The ease with which anti-vaccination centres such as Gloucester became converted to the opposite faith in the face of an epidemic indicates a certain shallowness in the hold which the ideologies of the League possessed over ordinary parents.[128] But by the time it had won a parliamentary battle, it had already lost the ideological war over the prevention of infectious diseases. The paradigm of preventive medicine developed on numerous fronts, but all of them left the simple atmospheric and "dirt" theories of the Chadwickian era behind them.

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corporate politics' (unpublished paper delivered at the 'History of Medical Geography' conference, Wellcome Institute, London, 25 September 1987).

[127] A. Newsholme, 'Some conditions of social efficiency in relation to local administration', *J. r. Inst. publ. Health,* 1910, **18:** 529–50.

[128] Parallel developments occurred also in Essex. See J. R. Smith, *The speckled monster,* Chelmsford, Essex Record Office, 1987.