

‘A devastating want of knowledge’: Doctors, vets and the 1924 foot and mouth disease controversy

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Between 1922 and 1924, Britain experienced two extensive epidemics of foot and mouth disease (FMD), a highly contagious disease of cloven-footed animals. Endemic FMD had been eliminated from the nation 40 years previously, under a series of legislative measures designed to prevent the importation and domestic spread of infection. During the intervening years, FMD had re-invaded occasionally from abroad, but outbreaks were quickly stamped out. Under the direction of the Chief Veterinary Officer (CVO) of the Ministry of Agriculture and Fisheries (MAF),² diseased livestock and their contacts were slaughtered, local markets cancelled and livestock movements halted. In January 1922, early FMD outbreaks evaded notice, and infection spread rapidly throughout the nation. It took eight months to eliminate the disease, by which time 56,000 livestock had been slaughtered in response to 1,140 outbreaks, costing the nation £1.25m in compensation. One year later, a second epidemic took hold. Between August 1923 and May 1924, nearly 300,000 livestock lost their lives as a result of 2,691 outbreaks. Compensation costs mounted to £3.3m. Cheshire, which experienced 1,700 outbreaks, bore the brunt of this epidemic. The county lost 51,031 dairy cattle, amounting to one third of the Cheshire herd. In the worst affected areas, up to 60 per cent of farms were emptied of livestock.³

Both epidemics prompted widespread questioning of MAF’s FMD control policy, while the devastation in Cheshire inspired calls for scientific research into the disease, with the aim of discovering a vaccine or serum. Members of the medical profession played a leading role in the debates of 1923-4, and helped to shape public and political opinion. The target of their criticisms was CVO Stewart Stockman, who was responsible for formulating and implementing control policy. They expressed their views publicly, in press correspondence and speeches to farmers meetings, in private discussions with medical colleagues and politicians, and also via the medium of medical journals. Supported by veterinary leaders, prominent agriculturalists and officials of the Ministry of Agriculture, Stockman fought back. The ensuing battle over FMD research and control forms the subject of this paper. After briefly describing the impact of the epidemics, I trace the course of the dispute, its leading participants, and the issues arising. I go on to analyse the root causes of the controversy. I argue that veterinary / medical differences of opinion over FMD were informed by their distinct experiences of and approaches to disease; by veterinary ambitions to close the status gap which separated them from the medical profession; and by a long-standing territorial dispute over the field of animal disease research. The 1923-4 FMD epidemic therefore provides an important window onto the previously unexplored subject

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² A. Woods, ‘The Construction of an Animal Plague: Foot and Mouth Disease in Nineteenth Century Britain’, *Social History of Medicine* 17 (2004), 23-39.

³ *Annual Report of Proceedings under the Diseases of Animals Acts, Report of the CVO, 1922 and 1923*; A. Woods, ‘A County under Siege: Foot and Mouth Disease in Cheshire, 1923-4’, *Cheshire History* 45 (2005-6), 83-98.

of veterinary / medical activities, relationships and ambitions during the first quarter of the twentieth century.

I

By the turn of the twentieth century FMD was generally regarded as an extremely severe disease. Although rarely fatal, reports suggested that affected animals suffered chronic, costly reductions in meat and milk production. The highly contagious nature of FMD meant that unless checked, large-scale losses would occur. Moreover, the presence of FMD in Britain affected the export of valuable pedigree stock to FMD-free nations such as Canada, the USA, New Zealand and Australia. These markets absorbed only a few hundred British pedigree beasts each year. However, many exporters were politically influential landowners who saw the foreign demand for their animals as a matter of national pride. Maintaining Britain's freedom from FMD was therefore a major preoccupation of the veterinary and agricultural authorities.

FMD control methods dated from the later nineteenth century. A series of Acts, passed between 1869 and 1892 enabled the government's Veterinary Department to ban livestock imports from infected nations, isolate diseased animals and their contacts, and to restrict livestock movements and cancel markets within the vicinity of disease outbreaks. In 1892, slaughter was introduced as an alternative to isolation. At first it was applied only occasionally, at the CVO's discretion. However, under Stewart Stockman, (CVO 1905-26), slaughter became the default option, from which only pedigree stock were exempt. Stockman argued that because the isolation policy allowed infected animals to continue manufacturing the FMD virus, slaughter was a more effective method of preventing disease spread. Also, in speeding up the process of FMD elimination, it minimised the impact of international trading restrictions..

Livestock owners were required to notify MAF upon suspicion of FMD. A member of Stockman's veterinary inspectorate then visited the farm to confirm the disease, and arrange the valuation, slaughter and disposal of affected and contact stock. Most livestock were burned. Labourers dug a pit and filled it wood and coal; horses dragged the dead animals to the pyre for cremation; the premises were then thoroughly disinfected. Officials mapped out a fifteen-mile radius infected area, centred upon the infected premises, within which all livestock movements and markets were prohibited. They liaised with the local authorities to ensure that boundaries were policed, and over a six to eight week period, gradually modified movement restrictions and reduced the size of the infected area. Owners were permitted to leave infected premises, but were expected to disinfect themselves, and visitors were restricted.⁴ These measures were first devised in 1866-7, when Britain experienced a devastating epidemic of the highly contagious and fatal cattle plague (rinderpest). Thereafter, they became part of the standard government response to foreign contagious livestock diseases.⁵

⁴ Above three paragraphs drawn from *Annual report of proceedings under the Diseases of Animals Acts, 1923*, pp. 31-4; Memo of official evidence to 1922 committee of enquiry, National Archives (NA) MAF 35/160; E. Whetham, 'The trade in pedigree livestock 1850-1910', *Agricultural History Review*, 27 (1979), 47-50; A. Woods. *The Construction of an Animal Plague*, 31-9.

⁵ Anon, *Animal Health, a Centenary* (HMSO, London, 1965); J. Fisher, 'The Economic Effects of Cattle Disease in Britain and its Containment, 1850-1900', *Agricultural History*, 52 (1980), 278-94; M. Worboys, 'Germ Theories of Disease and British Veterinary Medicine, 1860-1890', *Medical History*, 6 (1991), 308-327; J. Fisher, 'To Kill or not to Kill: The Eradication of Contagious Bovine Pleuro-Pneumonia in Western Europe', *Medical History* 47 (2003), 314-31.

The policy response to FMD disrupted businesses and social lives, while farmers who lost their stock found themselves confined to empty farms, their life's work destroyed. These impacts attracted little attention during the 1900s and 1910s, when FMD invaded rarely and was quickly stamped out. The situation changed dramatically during 1922-4, when Britain suffered two of the worst epidemics in over 40 years. The sheer weight of infection and the small numbers of MAF veterinary inspectors available (just 59 at the start of the 1922 epidemic) led to a rapid breakdown in official disease control machinery. A backlog of cases developed, contributing to the further spread of infection, and a rapidly increasing death toll. It was within this context that criticisms of MAF's policy emerged. Complaints poured into Stockman's Veterinary Department, while press reports and correspondence highlighted the progress of FMD and the resulting devastation. The controversy died away when the first epidemic ended, only to return the following year as the disease took hold once more. The most serious challenge to the slaughter occurred in Cheshire, where widespread opposition to Stockman's stance forced him to negotiate control policy with a committee of local farmers. The epidemic also inspired calls for research into FMD, with the aim of discovering an alternative control measure.⁶ By the end of 1923, the future of the slaughter policy hung in the balance, while the initiation of FMD research appeared increasingly likely.

II

Several doctors played important roles in this controversy. In Cheshire, local medical officials participated in, and lent authority to the anti-slaughter campaign. They included Dr Meredith Young, County Medical Officer of Health who had written upon smallpox; Dr T H Peyton, the tuberculosis officer for the county; and WH Grace, honorary pathologist to Chester Royal Infirmary.⁷ Speaking at farmers meetings and in correspondence to the national and local press, they drew on their experiences of managing human contagious diseases to argue that 'intelligent isolation' and nursing should replace slaughter. They also advocated research into alternative control measures.⁸ Young suggested that the medical and veterinary professions join forces to devise a 'really scientific' means of disease control. He emphasized the need to isolate and culture the disease agent, and to follow up continental reports of blood and serum immunization.⁹ Peyton was more outspoken, claiming that the use of slaughter was a 'policy of delay, obstruction and ineptitude' that indicated 'the appalling ignorance of those who are endeavouring to cope with a situation which they don't understand.'¹⁰ He went on to suggest a regime of treatment for infected animals, and recommended the placing of animals inside individual wire cages to protect them from infection conveyed by birds.¹¹

Stockman rejected these suggestions, claiming that the scientific knowledge held by medical men formed an inadequate basis for disease control policy, which should rest on

⁶ *Report of the 1922 Departmental Committee on FMD*, PP 1923, Cmd 1784, vol ii, 579; *Report of the 1924 Departmental Committee on FMD*, PP 1924-25, Cmd 2350, vol xiii, 225; Evidence to the committees of enquiry, NA PRO MAF 35/159, 35/160, 35/162, 35/165; A. Woods, 'A County under Siege'.

⁷ Obituary, Meredith Young, *Lancet*, 19.5.34, i, 91-92; Obituary, Walter Grace, *Lancet*, 21.2.53, 399-400

⁸ 'A medical view', *Cheshire Observer*, 5.1.24, p9 col c; Drs Peyton, Young and Grace, correspondence to *Times*, 7.1.24, p.18 col c.

⁹ Dr M. Young, correspondence to *Crewe Chronicle*, 5.1.24, p7.

¹⁰ 'A medical view', *Cheshire Observer*, 5.1.24, p9 col c.

¹¹ 'Stop the slaughter? Great meeting at Crewe', *Cheshire Observer*, 22.12.22. p8 col.a.

veterinary experiences of FMD in the field. Supported by Ministry of Agriculture officials and National Farmers' Union leader, Harry German, he continued to assert the supremacy of the slaughter policy.¹² Members of the veterinary profession ridiculed Peyton's recommendations and dismissed an offer of medical assistance in FMD prevention and cure made by Sir William Joynson-Hicks, Minister of Health and President of the Royal Society of Medicine.¹³ Doctors countered by highlighting the many similarities between FMD and other human diseases, and claimed that their knowledge of the latter permitted them to authoritatively pronounce upon the former.¹⁴ In properties such as filter passing, the agent of FMD was akin to that causing flu and measles.¹⁵ In its clinical symptoms, FMD it was closer to mild chicken pox or the children's ailment, impetigo contagiosa, which Peyton had experienced in his role as health inspector of schools and controlled by means of isolation and personal hygiene.¹⁶ In its contagious nature, FMD resembled smallpox, and should therefore be managed within isolation hospitals, which could be temporarily erected within infected areas.¹⁷

Another outspoken Cheshire doctor was Sir William Hodgson, who had founded Crewe Isolation Hospital.¹⁸ He was also chair of the Cheshire County Diseases of Animals sub-committee. This body oversaw the execution of FMD control policy at a local level, and appointed inspectors (usually policemen) to patrol the boundaries of infected farms and issue licences for the movement of stock within infected areas.¹⁹ Hodgson branded existing disease controls 'an administration of despotism and tyranny which are not in consonance with the ethics of the British people', and demanded 'a new and enlightened policy based on the light of experience and scientific information.'²⁰ He was a strong supporter of FMD research, and attempted, without success, to obtain experimental material from the county's infected dairy herds. This he intended to convey to Professor Beattie, who held the chair of bacteriology at Liverpool University, and was bacteriologist to the city of Liverpool.²¹ When MAF officials refused to provide suitable material, Beattie turned to the city meat inspector, who agreed to preserve the lymph nodes from potentially-infected cows that had been in contact with diseased animals. Rats fed on this tissue displayed characteristic FMD lesions at post mortem. Beattie concluded that rats were possible wildlife reservoirs of disease and could therefore act as models for research within the laboratory models. His results also suggested that consumption of meat from FMD-infected animals could induce disease, a finding that had far-reaching implications for FMD control and prevention.

¹² Ibid; Sir A. Griffith-Boscawen, correspondence to *Times*, 3/1/24, p11 col e; H. German, correspondence to *Times*, 4.1.24, p6 col a.

¹³ 'Ministry of Health statement', *Times*, 14/12/23, p4 col f; Editorial, 'The vet profession and FMD', *Veterinary Record*, 22.12.23, p931-32; H.A. Reid FRCVS, correspondence to *Times*, 14.1.24, p14 col.b.

¹⁴ Dr H. Turner, MOH, correspondence to *Crewe Chronicle*, 19.1.24, p7 col d.

¹⁵ Editorial, 'FMD', *Lancet*, 12.1.24, i, p83-85.

¹⁶ T.H. Peyton, correspondence to *British Medical Journal*, 2.2.24, p215.

¹⁷ Dr Burton, Cheshire MOH, correspondence to *Cheshire Observer*, 15.12.23, p12 col b; Dr W.G. King, correspondence to *Lancet*, 29.12.23, ii, p1420-21; Dr J.S. Thomson, correspondence to *Crewe Chronicle*, 29.12.23, p7 col b.

¹⁸ Obituary, Sir William Hodgson, *Lancet*, 2.3.40, p432.

¹⁹ F Floud, *The Ministry of Agriculture and Fisheries*, (GP Putnams, London, 1927), pp.17-18, Memo of official evidence to 1922 Departmental Committee, NA PRO MAF 35/160

²⁰ Hodgson evidence to 1924 committee of enquiry, NA PRO MAF 35/164.

²¹ Obituary, Prof. J. Beattie, *Lancet*, 22.10.55, ii, 880-881.

Beattie communicated his findings to the *Lancet*, and simultaneously stated his desire to investigate actual cases of disease, located in nearby Cheshire.²² The conditions under which he had been forced to operate in order to experiment upon FMD led the medical press to criticise the Ministry's 'medieval' attitude to FMD control and its 'devastating want of knowledge.'²³ The *British Medical Journal* highlighted the lack of independent scientific input into policy, while the *Lancet* advocated immediate attempts to isolate and culture the FMD agent as the preliminary to vaccine production.²⁴ Stockman was infuriated by doctors' intervention in what he regarded as a purely veterinary and agricultural affair. In a speech to the National Veterinary Medical Association, he complained,

'Some of the things that have come from some members of the medical profession in a public position are most inconsiderate and almost insulting...I am in no sense closed to good suggestions but, as often happens, the wrong men run to print when the lime-light is on...the majority know too much to speak, the minority know too little to be silent.'²⁵

The veterinary profession quickly rallied to his defence. One prominent member, JB Brittlebank, professed his hope that 'the profession will remain loyal to itself. We cannot condemn too severely the interference of outsiders.'²⁶ Sir Frederick Hobday, editor of the *Veterinary Journal*, condemned those 'old ladies, clergymen, fossils of various kinds, and even members of the medical profession' who thought they knew the veterinarian's job.²⁷ The editor of the *Veterinary Record* referred specifically to doctors when he spoke of the 'folly and stupidity of which men may be capable when they write about subjects of which they have little or no understanding.'²⁸

Stockman also resented the extent to which medical views influenced public opinion, and lent support to the Cheshire battle against the slaughter policy.²⁹ He attempted – without success – to persuade the subsequent departmental committee of enquiry into the epidemic to criticize doctors' actions in its report. Referring specifically to Cheshire medical officials, he told the committee,

'The trouble created by these official people, people of standing, was enormous during the fight. We had meeting after meeting to stop the riot...I feel we ought to tackle the men whom we think impeded our efforts...I think it was perfectly disgraceful that they should have been allowed to do that. I make that protest

²² J.M. Beattie and D. Peden, 'FMD in rats', *Lancet*, 2.2.24, i, 221-222.

²³ Editorial, 'Investigation into FMD', *Lancet*, 8.3.24, i, 504-505.

²⁴ Editorial, *Lancet*, 12.1.24, i, 83-85; Editorial, 'FMD', *BMJ*, 19.1.24, i, 121-22; Editorial, 'Investigation into FMD', *Lancet*, 8.3.24, i, 504-505.

²⁵ 'Sir Stewart Stockman on the FMD problem', *Veterinary Record*, 19.1.24, 35.

²⁶ *Ibid.*

²⁷ Editorial, *Veterinary Journal*, 2.24, 56-7.

²⁸ Editorial, *Veterinary Record*, 19.1.24, 49.

²⁹ 'Stop the slaughter? Great meeting at Crewe', *Cheshire Observer*, 22.12.22. p8 col.a; 'The policy of slaughter', *Times*, 2.1.24, p7 col a; 'Research: leading article', *Times* 29.1.24, p13 col.c; 'Need of further research', *Times*, 11.2.24, p18 col.b; Editorial, *Veterinary Journal*, 3.24, p93.

because at the time I felt it a heavy obstacle to success although I set my teeth and stuck it out.’³⁰

Despite the mounting pressure for FMD research, Stockman refused to give way. As Director of the MAF Veterinary Laboratory, he was well placed to control research activities, especially as the only other veterinary research laboratory in Britain (at the Royal Veterinary College, London) was headed by his father-in-law, Sir John McFadyean. For many years prior to the 1922-24 epidemics Stockman had resisted calls for research on the grounds that the highly contagious FMD could easily escape the laboratory, an event that had already occurred in Germany and France. He also claimed that the presence of FMD within a British laboratory would compromise the ‘FMD-free’ status needed to export livestock to disease-free nations, an argument which won over leading agriculturalists and livestock exporters.³¹ Stockman had attempted to overcome these difficulties by commissioning research outside mainland Britain, but met with little success. In 1914, he appointed a committee to carry out enquiries in India. Work was abandoned following the discovery that local cattle exhibited high levels of natural immunity to FMD and showed only mild clinical signs.³² In 1920, he formed another committee to oversee experiments carried out on board a warship, HMS Dalia, moored off the coast of Harwich. Limited equipment, stringent disease control regulations hampered progress, and the project was brought to an early close in 1921.³³

During the 1923-4 epidemic, Stockman and his supporters reiterated earlier arguments about the potential danger and trade costs of carrying out FMD research on mainland Britain. They highlighted the fact that researchers on the continent – who had been working on FMD since the turn of the century – had failed to culture the virus or develop an effective vaccine, suggesting that further British research was unlikely to make progress. Even if experiments did succeed in discovering an alternative method of FMD control, this was unlikely to surpass the benefits offered by the slaughter policy. While slaughter had, on numerous occasions, succeeded in eliminating FMD from Britain, vaccines, which worked by giving animals a mild case of disease, would actually encourage FMD spread. In any case, enquiries were unnecessary because veterinarians gained sufficient insights from experiencing FMD in the field and observing experiments that went on ‘before our eyes, in nature.’³⁴

During December 1923, as the crisis in Cheshire deepened, the government became increasingly concerned by the rising death toll and compensation bill. An emergency Cabinet Committee met to consider the situation. In the light of MAF’s continuing support for the slaughter, it agreed to maintain the policy. However, it was not impressed by Stockman’s stance on FMD research. ‘Gravely exercised at the ghastly waste caused by the disease’,³⁵ it appointed a sub-committee to consider further steps against FMD. Members decided to ask Walter Morley

³⁰ Stockman verbatim evidence to 1924 committee of enquiry, NA PRO MAF 35/165, p16-17.

³¹ Stockman evidence, *Report and evidence to the 1912 Departmental Committee on FMD*, PP 1912-13, Cmd 6222, vol. xxix, 1.

³² *Report of the Departmental Committee appointed by the President of the Board of Agriculture to enquire into FMD*. PP 1914, cd 7270, vol. xii, 139.

³³ FMD scientific committee of investigation, 1920-1, NA PRO MAF 35/216.

³⁴ Sir Arthur Griffith-Boscawen, correspondence to *Times*, 3.1.24, p11 col e; R. Muir, correspondence to *Times*, 14.1.24, p14 col a-b; Stockman correspondence to Leishman, 7.1.24, NA PRO MAF 35/217; Stockman verbatim evidence to 1924 committee of enquiry, NA PRO MAF 35/165.

³⁵ Fletcher to Sherrington, 22.2.24, NA PRO FD 1/1346.

Fletcher, secretary to the Medical Research Council (MRC), to recommend an eminent human pathologist who could provide independent advice upon the subject.³⁶

Fletcher was an extremely influential and very outspoken member of the medical community.³⁷ He was convinced that medical research was crucial for the advancement of the nation, and thought enquiries into FMD long overdue. He claimed that ‘backwardness’ in veterinary pathology was impeding the development of human medicine, and railed against the stranglehold which Stockman and his father-in-law, McFadyean, exerted over veterinary research. In a letter to MRC colleague, Lord Mildmay, Fletcher complained that the Ministry of Agriculture had been ‘singularly ill-advised’ upon FMD, and that successive Ministers had proved ignorant of the value of scientific investigations.³⁸ He recommended that the Cabinet sub-committee consult Sir William Leishman, a highly respected bacteriologist and director-general of the Army Medical Services. Leishman was a close colleague of Fletcher’s and could be relied upon to echo the latter’s views on FMD research. He was prominent in the MRC, and had headed several of its committees upon research into filterable viruses.³⁹ Stockman was not consulted upon Leishman’s involvement, and when finally informed, concurred ‘with some reluctance.’⁴⁰ Stockman’s subsequent correspondence to Lord Ernle provides additional evidence of his dissatisfaction:

‘I am always willing to consult and collaborate with any good man inside or outside the department, but...it is very difficult to sometimes get men who do not understand the problem in all its practical bearings to see that many of their suggestions, when based upon purely abstract principles, maybe of very little use, in fact they may be a waste of time.’⁴¹

In correspondence with Leishman, Stockman emphasized ‘the enormous differences between epizootology [the study of animal disease epidemics] in practice and epidemiology [the study of infectious human diseases].’ He also reiterated his view that vaccines and serums were not suitable methods of FMD control as they could only control, not eradicate disease.⁴² Whilst acknowledging the validity of Stockman’s arguments, Leishman nevertheless decided that the lack of precise knowledge on the nature and spread of infection was seriously impeding efforts to contain the disease, and that research was needed to ‘fill in the blanks.’ He criticized the view that FMD was a problem insoluble by scientific enquiry, claiming that this attitude had barred progress. Organised investigations should begin immediately at a number of sites, under a committee made up of experts in veterinary science, medicine, bacteriology, immunology and

³⁶ Cabinet Committee meetings 1923-24, NA PRO MAF 35/217.

³⁷ Fletcher studied physiology at Cambridge and after completing his medical degree at St Bartholomew’s Hospital, returned to Cambridge as Trinity College Fellow, undertaking laboratory investigations alongside administrative work. In 1914, he was appointed secretary to the newly formed Medical Research Committee and until his death in 1933, acted as spokesman to the MRC, framing its research policy and controlling the distribution of extensive state funds for medical research. Sir W.M. Fletcher, 1873-1933, *Royal Society Obituary Notices of Fellows* 1 (1932-35), 153-63.

³⁸ Fletcher to Mildmay, 1.4.24, NA PRO FD 1/1346.

³⁹ Sir William Leishman, Oxford Dictionary of National Biography,

<http://www.oxforddnb.com/view/article/34488?docPos=4>

⁴⁰ Fletcher to Sherrington, 22.2.24, NA PRO FD 1/1346.

⁴¹ Stockman to Ernle, 7.1.24, NA PRO MAF 35/217.

⁴² Stockman to Leishman, 7.1.24, NA PRO MAF 35/217.

epidemiology. Close liaison with MRC virus experts was necessary, and both medical and veterinary experts should participate in disease investigations.⁴³

In response, Stockman repeated his conviction that research was unlikely to discover practically useful information, and emphasised that although he was willing to collaborate with the MRC, FMD was an agricultural problem and therefore MAF must take charge of investigations. He proposed a predominantly veterinary committee, and recommended that research take place at his own and McFadyean's labs, and at a MAF-controlled field station.⁴⁴ These protests had little effect. On 28 February 1924, the Minister of Agriculture, Sir Robert Sanders announced his intention to create an FMD research committee (FMDRC) made up of veterinary and medical experts, to carry out research at a number of veterinary and medical laboratories. Its terms of reference were 'to initiate, direct and conduct investigations into FMD, either in this country or elsewhere, with the view of discovering means whereby the invasions of disease may be rendered less harmful to agriculture.'⁴⁵

The first chair of the FMDRC was prominent medical physiologist and MRC member, Charles Sherrington. Fletcher immediately wrote to inform him of the 'significant facts' about his struggle to implement veterinary research. He emphasised the need to find the right men to sit on 'our side' of the committee, and the importance of gathering the appropriate expertise in terms of researchers with experience in viruses, while pointing out that such men were likely to resent working under vets.⁴⁶ In the event, Sherrington resigned due to ill health and Leishman took over as chair until he died in June 1926, on the same day as Stuart Stockman.

III

Differences of opinion over FMD were informed by broader contrasts between veterinary and medical experiences of and responses to disease. Veterinary and medical professional roles differed in accordance with the contrasting demands of animal owners and human patients. Respective systems of professional education both reflected and perpetuated the resulting dissimilarities in disease investigation and control. Another important factor informing attitudes towards FMD was the desire for enhanced personal and professional status. For leading veterinarians, the route to professional advancement lay in preserving the profession's exclusive right to research and advise upon animal diseases. However, members of the medical profession also perceived significant benefits from these activities. As I will show, these contrasting outlooks and goals had created substantial friction between the professions during the decade leading up to the 1923-24 epidemic, and shaped the debate over FMD research and control.

By the 1920s, laboratory medicine was regarded as an integral component of the medical field.⁴⁷ Starting in the 1870s, laboratory research had identified many of the germs responsible for feared infectious diseases, and developed serums, vaccines and anti-toxins for their control. By the 1910s, medical schools attached to British universities offered both scientific training and opportunities for employment in medical research. General hospitals increasingly incorporated laboratories for the diagnosis and investigation of disease and the preparation of therapies,

⁴³ Leishman report, NA PRO MAF 35/217.

⁴⁴ Stockman response, 8.2.24, NA PRO MAF 35/217.

⁴⁵ 'FMD', *Times*, 29.2.24, p7 col c.

⁴⁶ Fletcher to Sherrington, 22.2.24, NA PRO FD 1/1346.

⁴⁷ C. Lawrence, 'Still Incommunicable: clinical holists and medical knowledge in inter-war Britain', in C. Lawrence and G. Weisz (eds), *Greater than the parts: Holism in biomedicine, 1920-50* (Oxford: Oxford University Press, 1998).

indicating the perceived importance of medical science to clinical practice. Local Authorities also employed medical scientists in public health laboratories for disease diagnosis, whilst privately funded research institutes such as the Brown and the Lister offered facilities for original investigations. The 1911 National Insurance Act generated substantial funds for medical research, which were distributed by the newly formed Medical Research Committee, and the application of the fruits of this research during the First World War considerably enhanced the reputation of the field. In 1920, the MRC was reconstituted as a Council, and placed under the Privy Council where it was largely independent of political concerns. It went on to erect a London research laboratory, the National Institute of Medical Research (NIMR), which became an important site for medical research.⁴⁸

By contrast, the practice and products of laboratory research had made few inroads into the veterinary field. Most members of the profession viewed research as a marginal activity that had little relevance to the empirical management of animal disease.⁴⁹ Consequently, veterinary education provided little in the way of scientific training. With the exception of Liverpool veterinary school, which was attached to the University, veterinary educational establishments were privately owned and dependent on fees for their survival. Overworked teachers – who had no time to indulge in research – met the demands of the marketplace by providing an empirical training oriented towards general practice.⁵⁰ There were no veterinary equivalents to human hospitals and no private veterinary research institutions. Although the Development Commission – founded by the government in 1909 to fund agricultural research in Britain – provided support for investigations into animal pathology,⁵¹ in practice financing was almost entirely directed towards Stockman's and McFadyean's laboratories, which employed only a handful of staff. As CVO, Stockman intermittently appointed departmental research committees to study specific diseases such as swine fever and contagious abortion, but these were usually small and chaired by McFadyean.⁵² This 'closed shop' meant that the only openings for British veterinarians wanting to perform research lay in India and the colonies.

⁴⁸ H. Chick, M. Hume, M. MacFarlane, *War on disease - a history of the Lister Institute* (London: Andre Deutsch, 1971); W.D. Foster, *Pathology as a profession in Great Britain and the early history of the Royal College of Pathologists* (London: RCP, 1983), chps 1 and 2; C. Booth, 'Clinical Research and the MRC', in C. Booth (ed.), *Doctors in science and society* (London: Memoir Club, 1987); J. Austoker, 'Walter Morley Fletcher and the Origins of a Basic Biomedical Research Policy' in J. Austoker and L. Bryder (eds), *Historical Perspectives on the Role of the Medical Research Council* (Oxford University Press, Oxford, 1989), pp. 23-34; K. Vernon, 'Pus, sewage, beer and milk: microbiology in Britain, 1870-1940', *History of Science* xxviii (1990), 289-325; C. Booth, 'Clinical Research', in W. Bynum and R. Porter (eds), *Companion Encyclopaedia to the History of Medicine* (London: Routledge, 1993); S. Sturdy and R. Cooter, 'Science, scientific management and the transformation of medicine in Britain, c1870-1950', *History of Science* xxxvi (1998), 421-466.

⁴⁹ The emergence of a late nineteenth century distinction between veterinary and medical concepts of disease is described in M. Worboys, 'Germ theories of disease and British veterinary medicine, 1860-1900', *Medical History*, 35 (1991), 308-327.

⁵⁰ A. Kraft, 'Breaking with tradition: the reform of British veterinary education 1900-20', *History of Education* 33 (2004), 317-36.

⁵¹ R. Olby, 'Social imperialism and state support for agricultural research in Edwardian Britain', *Annals of Science* 48 (1991), 509-26; K. Vernon, 'Science for the farmer? Agricultural research in England, 1909-1936', *Twentieth Century British History* 83 (1997), 310-33.

⁵² *Annual Report of Proceedings under the Diseases of Animals Acts, Report of the CVO, 1880-1920*, passim.

The veterinary profession as a whole had little incentive to seek out laboratory products with which to manage contagious animal diseases, as it already possessed a cheap and effective system, comprising slaughter and livestock movement restrictions. By the early twentieth century, these measures had succeeded in stamping out several important diseases, including cattle plague, bovine pleuro-pneumonia, sheep pox and glanders. Such achievements raised the confidence of the profession and were used in support of its claims for higher status. The stamping-out system also encouraged veterinarians to regard contagious disease as a geographical problem, located within infected 'places,' 'areas' or 'nations.' They viewed vaccines and serums as inefficient and unnecessary, as they could only control and not eliminate germs, so preventing the attainment of 'national disease freedom.' Vaccines could even enhance disease spread because they induced immunity by initiating a mild case of (infectious) disease, while serum provided only unreliable, short-lived resistance.⁵³

In the use of isolation hospitals, doctors also attempted to contain contagious human diseases within a particular locality. Generally, however, medical attitudes to contagious disease control were very different to those of veterinary surgeons. Slaughter was unthinkable and it was therefore necessary to treat the diseased, using laboratories to identify the cause of illness, or to produce serum or anti-toxin to limit the severity of symptoms. There was no analogous concept to 'national disease freedom' and therefore the vaccination of healthy humans was considered an appropriate and effective means of disease control. The medical approach to infectious disease informed the profession's criticisms of Stockman's slaughter policy and its calls for research into serums and vaccines. Schooled in a very different line of thinking, veterinary leaders retaliated. They argued that medical men lacked practical experience of FMD, were ignorant of the differences between human and animal diseases, and failed to realise that because animals were bred for slaughter, stamping out was not a moral or sentimental issue. Stockman wrote, 'I see it commonly reported that doctors do not kill their patients to prevent the spread of disease. That sort of remark is too irrelevant and childish to call for serious comment.'⁵⁴ In another bid for authority, leading veterinarians cited their profession's record in contagious disease elimination, whilst highlighting the fact that doctors had yet to eliminate a single human infectious disease from Britain. Moreover, scientists' efforts to find a cure for or culture the agents of measles and flu – which like FMD were caused by invisible 'filterable viruses' – had proved wholly unsuccessful.⁵⁵

Despite his vehement rejection of calls for FMD research, Stockman was not entirely opposed to laboratory enquiry. While veterinary traditions of disease management meant that he was considerably more circumspect than doctors about the prospects of research, his earlier discussions on the subject reveal an enthusiasm for experimentation,⁵⁶ which he hoped would

⁵³ *Report and evidence to the 1912 Departmental Committee on FMD*, PP 1912-13; Evidence, Appendices, and Index to *Report of the Departmental Committee appointed to inquire into the requirements of the Public Services with regard to officers possessing veterinary qualifications*, PP 1912-13, Cmd 6652, vol xlvi, p267; 1913 Development Commission Committee, NA D4/91; 1920-22 DC Advisory Committee, NA FD 1/4364.

⁵⁴ Stockman to Leishman 7.1.24, NA PRO MAF 35/217.

⁵⁵ *Ibid*; Editorial, 'The vet profession and FMD', *Veterinary Record* 22.12.23, 931-32; R.D., correspondence to *Times*. 8.1.24, p8 col c; H.A. Reid FRCVS, correspondence to *Times*, 14.1.24, p14 col b.

⁵⁶ Stockman evidence to *Report of the 1912 Departmental Committee on FMD*, PP 1912-13.

give rise to ‘other effective, but less costly methods of prevention.’⁵⁷ Similarly, reports of his laboratory’s activities illustrate his considerable interest in laboratory-based disease diagnosis and enquiry.⁵⁸ Other factors were therefore involved in his rejection of research during the 1923-24 epidemic, most importantly his desire to defend veterinary territory from medical encroachment.

Since the 1910s, members of the medical profession had been concerned with expanding research into animal disease. Medical interest in this subject arose for various reasons. There were many links between human and animal disease: some germs were pathogenic to both, or directly transferable between them, while discoveries in the field of tropical medicine revealed that healthy animals could act as reservoirs of human infection. Doctors also argued that disease was a universal problem that transcended species barriers, as revealed by the many investigations into human disease that utilised animal models. As their duties expanded to include slaughter house and dairy inspection, Medical Officers of Health became interested in human diseases spread via meat and milk. Doctors were also attracted to this field by the availability of funding under the Development Commission – a body established in 1909 to dispense government money for agricultural research in Britain.⁵⁹

Stockman was well aware of medical interest in animal disease and was determined to prevent doctors taking over what he viewed as essentially veterinary territory. In 1923, there were approximately 3400 vets on the UK register. Most were the sons of farmers, farriers or vets. Their social status, economic income and prospects were far inferior to those of doctors. Motorised transport was increasingly replacing the horse, the traditional focus of veterinary medicine, and the profession’s failure to establish a new niche within food safety and the limited possibilities within agricultural and small animal practice caused considerable concern.⁶⁰ Stockman and McFadyean believed that the profession’s future depended upon preserving its autonomy. As leaders of the veterinary educational and research establishments, and council members of the profession’s governing body, the Royal College of Veterinary Surgeons, they were well-placed to achieve this goal. They strongly resisted attempts to incorporate veterinary education within the universities, on the grounds that this would undermine their independence, and rejected medical suggestions for collaboration in joint, laboratory-based enquiries. They also diverted considerable effort into ensuring that all research into animal disease was carried out by veterinarians located at their laboratories, rather than at universities or medical research institutes, where medical scientists could take charge of investigations.⁶¹

In the decade leading up to the 1923-24 epidemic, Stockman and McFadyean engaged in many vitriolic disputes with doctors critical of their refusal to grant access to the field of animal

⁵⁷ Stockman memo, 26.1.20, p6. NA PRO MAF 35/216.

⁵⁸ *Annual Report of Proceedings under the Diseases of Animals Acts, Reports of the CVO, 1905-1924*, passim.

⁵⁹ R Olby, ‘Social imperialism and state support for agricultural research in Edwardian Britain,’ *Annals of Science* 48 (1991), 509-26; K Vernon, ‘Science for the farmer? Agricultural research in England, 1909-1936,’ *20th Century British History* 83 (1997), 310-33.

⁶⁰ H. Gray, ‘The future of the profession’, *Veterinary Record*, 8.10.21, p799-812; A. Hardy, ‘Professional advantage and public health: British veterinarians and state veterinary services, 1865-1939’, *20th Century British History* 2003 (14), 9-12.

⁶¹ 1913 Development Commission Committee, NA PRO D4/91; 1920-22 DC Advisory Committee, NA PRO FD 1/4364; J. McFadyean and Sir G. Adami, exchanges of correspondence in *Times*, June-Jul 1920, passim; I. Pattison, *John McFadyean* (London: JA Allen, 1981), pp.199-201.

disease. Dr Fred Twort of the Brown Institute blamed them for the Development Commission's decision to withdraw funding from his promising investigations into Johne's, a TB-like cattle disease. Other leading doctors attacked the quality of their research into swine fever, while the *Times* published much correspondence upon the need to reform veterinary research and education.⁶²

Dr George Adami, medical pathologist and vice-chancellor of Liverpool University ridiculed McFadyean's fear that medical scientists would take over the veterinary field, claiming, 'surely a broad-minded man, enthusiastic for the advancement of his science, would welcome and support every movement for increased study and research in his subject.'⁶³ Frustrated by the Medical Research Council's inability to fund animal disease research, Fletcher and Leishman attempted to persuade fellow members of the 1922 Development Commission committee on research into diseases of animals to back the formation of an independent Veterinary Research Council.⁶⁴ These efforts failed, however, leading Fletcher to complain to a colleague

'I have long been doing everything I can to get proper government support for research into animal diseases. You may not know perhaps of the most incredible obstacles that are put in the way of these two purposes by the present vested interests of the vet world and their ramifications in the Board of Agriculture.'⁶⁵

On another occasion, he condemned

'the jealousy of particular leaders of the veterinary profession who, without being at all distinguished in science themselves, have been intensely jealous of the encroachment by human pathologists or medical men upon what they consider their own field.'⁶⁶

IV

From the viewpoint of medical scientists, the 1923-24 FMD epidemic highlighted the ongoing dearth of research into animal disease, and offered a new opportunity to bypass veterinary 'gatekeepers.' Stockman's authority was already under attack as suffering farmers rebelled against the slaughter policy. By adding their voices to this campaign, and simultaneously calling for the initiation of FMD research, doctors made his position increasingly untenable. Resentful of the medical profession's greater influence over public and political opinion, and keen to protect veterinary territory from encroachment, Stockman and his colleagues fought back. While he managed to maintain the slaughter policy – largely on account of a timely drop in FMD incidence in Cheshire during the first week of January⁶⁷ – the government swept his objections

⁶² 'Animal diseases - demand for research', *Times*, 4.5.14, p5 col a; F. Twort, correspondence to *Telegraph*, reported in *Veterinary News* 13 (1917), p266-67; C. Allbutt and G. Adami, correspondence to *Times*, June-Jul 1920, passim; Lord Willoughby de Broke, correspondence to *Times*, 16.5.21, p4 col c; A. Heinneman, correspondence to *Times*, 15.1.23, p6 col d.

⁶³ G. Adami, correspondence to *Times*, 5.7.20, p10 col c.

⁶⁴ 1920-22 DC Advisory Committee, NA PRO FD 1/4364.

⁶⁵ Fletcher to Dr Lazarus Barlow, 1.22, NA PRO FD 1/4364.

⁶⁶ Fletcher to Mildmay, 1.4.24, NA PRO FD 1/1346.

⁶⁷ A. Woods, 'A county under siege'.

to research aside. By the end of 1924, scientific enquiries had begun. Work was planned at various institutions, including Stockman's laboratory, the Lister Institute, the MRC's National Institute for Medical Research, and a new field station located at Pirbright, and medical scientists were well represented on the committee appointed to oversee research. The medical profession thereby gained a much sought-after foothold in animal disease research. The disintegration of the Stockman-McFadyean power axis following the former's death in 1926 and the latter's retirement in 1927 enabled the field of animal disease research to be opened up further, though veterinarians remained extremely sensitive to medical encroachment.⁶⁸

However, it is important not to over-state the medical profession's victory. It is impossible to know whether officials were truly convinced by medical opinions about the desirability and prospects of FMD research, or whether they simply viewed this activity as a politically convenient solution to the crisis. For in helping to convince a critical public that officials were aware of their concerns and actively encouraging the search for new control methods, FMD research reduced hostility to, and so aided the maintenance of the slaughter policy. The subsequent committee of enquiry into the epidemic voiced support for the slaughter, so vindicating Stockman's actions. On this matter, therefore, medical criticisms did not bear fruit.

Moreover, the reality of FMD research was very different from the vision propagated by doctors during the 1923-4 epidemics. MAF's overall control over FMD research meant that enquiries were largely directed towards fulfilling existing policy goals, while the CVO's permanent seat on the FMDRC allowed Stockman's successors to organise work in accordance with their professional priorities and ambitions. Most scientists selected to perform FMD research had a veterinary background. With the exception of Beattie, who was permitted temporarily – though without funding or encouragement – to continue his FMD experiments, all independent requests to investigate the disease were rejected on the grounds of disease security. Scientists were forbidden to publish their results without the Minister's permission, and officials reserved the right to request certain investigations that would potentially assist the control of disease in the field. Until WWII, work was largely directed towards epidemiological enquiries that would help to prevent FMD importation, while vaccine research – which MAF deemed unnecessary given the existence of the slaughter policy – received little attention.⁶⁹ That these features did not attract comment was largely due to the absence of serious FMD threats. In 1951-2, when Britain once more suffered a major epidemic, debates over FMD research and control re-emerged, this time fuelled by MAF's refusal to apply newly-discovered FMD vaccines in place of slaughter.⁷⁰

⁶⁸ Other new initiatives included the establishment of an Institute of Comparative Pathology at Cambridge University, which undertook MRC-funded research into tuberculosis, and NIMR's research into dog distemper, which was funded by subscriptions to *The Field* magazine. J.R.M. Innes, 'Institute of Animal Pathology, Cambridge University' (unpublished manuscript in possession of Sherwin Hall); E.M. Tansey, 'Protection against dog distemper and dogs protection bills: the MRC and anti-vivisectionist protect, 1911-33', *Medical History* 38 (1994), 1-26.

⁶⁹ Paragraph drawn from FMDRC papers and committee meeting reports, 1924-39, held at the Institute for Animal Health, Pirbright.

⁷⁰ A. Woods, *A Manufactured Plague: Foot and Mouth Disease in Britain, 1839-2001* (London: Earthscan, 2004), ch 6.