The Glasgow case: meat, disease and regulation, 1889-1924[1]

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Abstract

Contemporary estimates indicate that a substantial proportion of the indigenous beef consumed in Britain in the late nineteenth and early twentieth centuries came from tuberculous animals. If properly cooked, this meat presented less of a risk to human health than infected raw milk, but concerns were nevertheless expressed by many public health professionals, especially in the 1880s and 1890s. This paper looks at the interests of the various parties in the debate about diseased meat that evolved between 1889 and 1924. It investigates the solutions proposed and comments on the nature of central government policy-making.

Much depended on a notorious case in 1889 in Glasgow. The local authority there successfully prosecuted a butcher and a meat wholesaler for displaying diseased meat illegally, and thereby created a precedent, placing the responsibility for quality at the feet of particular actors in the food system. This unleashed a heated debate between the local state and the meat trade but it also created friction between farmers and butchers. The National Federation of Meat Traders wished to shift blame for unfit meat to the producers and discussed the possibility of requiring a warranty from their suppliers. Finding a negotiated compromise between the various parties proved to be difficult and finally, in 1924, the government felt the need to impose its own solution in the form of the Public Health (Meat) Regulations.

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'Quality', 'trust' and 'local' are concepts that have loomed large in recent work on agriculture and food systems. In their positive senses, they are seen as providing means of adding value in farming regions dominated by economically and environmentally challenged productivist agriculture.[2] It is pleasing to note a particular emphasis by scholars upon the contested aspects of quality that have arisen from the variety of recent food scares;[3] but more worrying is a blindness in this literature to similar issues in earlier phases of the capitalist food economy.[4]

Arguably the theoretical depth of the food networks literature would be improved by reference to historical case studies of the knowledge and understandings of quality and of the evolving working relationships between the various actors that constituted trust. In essence this paper is such a case study, concerning the politics of meat in the period 1889-1924 and the impact that one court case had upon the application of a particular and, as it transpired, an ephemeral, scientific consensus on the seizure of diseased carcases as unfit for human consumption.

It is my contention that the institutional links between actors in the meat system, from graziers, cattle dealers and butchers, to local regulators and central legislators, are best understood in terms of the evolution of negotiated compromises and imposed sets of rules. The boundaries of negotiating power were especially fluid in the second half of the nineteenth century, a time of a rapidly expanding and structurally shifting cattle and meat economy. Railway transport, imports of chilled and frozen meat, were destabilising traditional relationships, creating new opportunities, and producing a complexity and scale of operations that was difficult for the state to absorb and accommodate. The legal and administrative frameworks that were in place proved to be inadequate to deal with the challenges, when they came, of epizootics such as cattle plague, foot and mouth, and pleuro-pneumonia.

The so-called 'Glasgow case' in 1889 was symptomatic of the early sparring that took place between certain health-conscious local authorities and a profit-orientated butchery trade that paid little or no attention to disease. This involved the Glasgow local authority successfully prosecuting a butcher and a meat wholesaler for illegally displaying diseased meat. They thereby created a precedent for attaching responsibility for quality to particular actors in the food system. As a result, the *Lancet* enthusiastically, if somewhat prematurely, pronounced the sale of tuberculous meat to be 'now illegal…even where disease is limited in distribution and the carcase otherwise apparently sound'.[5] The *Meat Trades Journal* pronounced this case to be 'momentous in the extreme', and the *Sanitary Record* saw it as 'almost impossible to overestimate the importance of the decision given in Glasgow'.[6]

A heated debate was unleashed between the local state and the meat trade but the judgement also created friction between farmers and butchers. The latter wished to shift blame for unfit meat to the producers and discussed the possibility of requiring a warranty from their suppliers. Later, in 1908, the fledgling National Farmers' Union drew the initial impetus for its foundation from this breakdown in trust and from the perceived need to protect the interests of small-scale cattle farmers from an onslaught by the middlemen.

The paper ends in 1924, the date of the Public Health (Meat) Regulations, which imposed quality standards and provided a foundation for a new conventional relationship between the various parties that lasted for forty years. The civil society of food producers, mainly in the form of a vast 'countryside alliance' of clubs, societies and campaigning groups, had been able to mobilise its social capital of contacts and fellow travellers, that inevitably drew in many rural MPs and various elements in Whitehall, to support the cause of the livestock farmer against having to give warranty of disease-free condition for fat animals being sold into a market or slaughterhouse. This had left the meat trade somewhat disadvantaged but they in their turn had fought and won a battle in Parliament to water down

disease inspection regimes and to provide for financial compensation when meat had to be condemned.

The Glasgow case with its associated discourse of trust, responsibility and regulation is a sub-set of a wider debate in late nineteenth and early twentieth centuries that encompassed worries about the adulteration of foodstuffs and also the deterioration in food quality and healthiness that was said by some hygienists to have arisen from the success of agro-industry, with its increasingly intensive farming, linked to processing and manufacturing.[7] Writers such as Terry Marsden and Laurent Thévenot provide theoretical justifications indicating that food systems crystallising out of the conventions outlined in the present paper may be understood to have common features that deserve detailed treatment.[8] This is because the period under review saw the birth and early evolution of elements of present-day food systems.

I

Q. 'I understand you first examined the carcase of the bullock?

A. Yes.

Q. Tell us what you found.

A. On the left side of the bullock the disease was pretty well defined and very red all over the lining of the animal, about six inches by eight, all rosy red nodules…'.

This was Peter Fyfe, Glasgow Sanitary Inspector (SI) under questioning by Comrie Thomson, counsel for the local authority at the trial of Hugh Couper and Charles Moore for the illegal possession of diseased meat for sale as human food.[9] The case was brought under Section 26 of the Public Health (Scotland) Act, 1867, and was regarded by all concerned as a test case of both the will and the ability of the local state to impose the highest standards of meat inspection indicated as appropriate by current science.

The background was an extraordinary prevalence of diseased meat in the markets of large cities and a nonchalance about it bordering on complacency among most actors in the food chain. Ten years earlier, in 1879, 80 per cent of the portions of meat sold in London were said to have been from tubercular animals, and in 1881 90 per cent of beasts inspected at the Metropolitan Cattle Market were estimated to have the disease.[10] In 1889, Dr George Goldie, Medical Officer of Health (MOH) for Leeds, confirmed these worst fears when he claimed that 'I have no doubt that my town is largely fed on tuberculous meat'.[11]

There are two points to bear in mind, however, before we accept such data at face value. First, the London slaughter figures refer to dairy cows rather than to cattle generally, and the likelihood of their infection was greatly heightened by the confined and intensive conditions in which they were often kept.[12] For Britain as a whole, more representative data were gathered in 1892 when those animals suspected of suffering from a separate disease, pleuro-pneumonia, were slaughtered.[13] Of these, 22.3 per cent of cows and nearly 15 per cent of other cattle were found incidentally upon inspection to be tuberculous.[14] Second, there were regional variations of disease incidence, with cities such as London, Liverpool and Manchester suffering to a much greater extent than other parts of the country.[15] In Glasgow, for instance, 20 per cent of the 3,000 cows slaughtered between 1887 and 1889 had tuberculosis, but the figure for beef cattle in general was much lower, at 0.45 per cent.[16]

Amongst the general public, there was a suspicion that livestock owners and butchers were well aware of the problem but preferred concealment to remedial action. In the opinion of the Chief Veterinary Inspector for Manchester, 'it is perfectly easy to pass on to the public meat for consumption which is diseased'.[17] The problem was focused especially in small country slaughterhouses where 'tubered' meat was trimmed of all the visible evidence, for instance 'stripped' of the serous membranes, which often displayed tell-tale signs such as tuberculous nodules or 'grapes', before being sent on to poor city neighbourhoods for use in sausages.[18]

The Public Health Acts, 1867 in Scotland and 1875 in England and Wales with an Amendment Act in 1890, allowed for the seizure of unsound meat and animals but the powers were sparingly used. The definition of 'disease' used in the period under review was that of the 1878 Contagious Diseases (Animals) Act (CDA), which did not include tuberculosis. The responsibility for ensuring sound meat was left to the butcher, with spot checks arranged by the MOsH, and this led to much annoyance in the meat trade when the stricter MOsH arranged for confiscations of diseased meat.[19] Slaughtermen and butchers saw MOsH as ill-informed and it is certainly true that most of them were unfamiliar with the detail of meat inspection, and that all were hampered by the lack of textbooks for reference purposes.[20] Yet Ministers refused to acknowledge this as a problem. It was Walter Long, Tory MP and President of the Local Government Board (LGB), for instance, who in 1904 declared that: 'the training which every registered practitioner must have received as a student is sufficient to render him competent to detect tuberculosis in a carcase'.[21]

Some cities employed specialist meat inspectors but on the whole these officials were modestly educated and many were even less *au fait* with disease symptoms than their employers.[22] It was not until 1899 that the Royal Sanitary Institute introduced a formal examination for meat inspectors, so very few were properly qualified at the turn of the century.[23] A return of meat inspectors in 1896 (Table 1) showed 191 employed by the London Boroughs and the City but only 26 in ten other English towns and cities and 31 in five Scottish urban areas. In Glasgow, policemen acted as inspectors until 1898 when they were replaced by qualified vets, and this professionalization of meat inspection was a trend that was found increasingly across Scotland generally and also on the continent.[24] Another survey in England in 1904 showed that, of 206 meat inspectors, only two were vets.[25] Those listed in London were mostly SIs, whereas in the provinces they were Inspectors of Nuisances (IoNs). Cities such as Liverpool and Manchester relied on former butchers, and the continuing absence of formal

qualifications such as meat inspection certificates in the return suggests that most local authorities were still looking for 'practical' rather than professional skills.

< Table 1 here >

The situation in provincial England and Wales indicated in Table 1 was significantly behind that in other advanced countries, such as Belgium, France, Germany and Denmark, and it was certainly no match for the United States' meat inspection programme established in 1891 and formalized in the Federal Meat Inspection Act of 1906.[26] There is justification therefore in Ostertag's arch comment that 'England, which is otherwise so well organized with regard to public sanitation and called the cradle of hygiene, is entirely without a regulated system of meat inspection'.[27] Part of the explanation for this may lie in the rivalry between the MOsH, who wished to retain their control over all aspects of public health inspection, and the veterinary surgeons, who, although they had all of the necessary practical experience to find evidence of disease in meat, were politically weak and lacked social status. The MOsH did not consider vets to be competent to deal with matters affecting the public health.[28] But in reality their own administrative response was also inadequate because both they and their SIs/IoNs had a wide range of duties, and food was certainly not their top priority.[29]

In policy terms, an extensive debate about tuberculous meat and milk in the 1880s had little practical impact. This is evidenced particularly in the inability of lobbyists to have tuberculosis treated on a par with rinderpest, where a draconian policy of slaughter and movement restrictions had been tried, or pleuro-pneumonia, where restrictions on imported livestock were enforced with increasing stringency over time.[30] The point here is that threats to the profitability of this important industry had more impact on the minds of policy-makers than the, to them, more nebulous threat to human health.

The Privy Council did have discussions with the Irish government in 1883 about cattle tuberculosis, although there is no evidence that imported stores were any more infected than home-bred animals. In the same year the National Veterinary Association passed a

resolution in favour of scheduling tuberculosis under the CDA of 1878, and further approaches to the Privy Council on this issue came in 1884 from the Yorkshire Confederation of Butchers' Associations and in 1885 from the town council of Hull.[31] Progress seemed possible in 1887 when Lord Cranbrook (President of the Council) and Lord Lothian (the Secretary of State for Scotland) met with the Police Commissioners of Paisley, one of the most progressive local authorities with regard to animal disease, in order to discuss the possibility of Orders in Council to allow the seizure of diseased carcases.[32] Action did not follow immediately but the Departmental Committee (DC), which had already been planned to look at the problem of pleuro-pneumonia in cattle, was instructed to extend its brief to include tuberculosis.[33] The 1888 report of this DC was a milestone in two ways.[34] Evidence was collected for the first time on the tuberculosis threat via the food supply and, second, the committee recommended the scheduling of tuberculosis under the CDA.[35] Had this been approved by the government, it would have meant the compulsory slaughter of animals, with farmers getting 75 per cent compensation for the loss of value.

The Board of Agriculture, which was created in 1889, ignored the DC's recommendation to schedule tuberculosis under the CDA for six stated reasons:[36]

- The problem of detecting tuberculosis in live animals;
- Other diseases could be mistaken for tuberculosis;
- The threat to valuable pedigree herds if slaughter was indiscriminate;
- The valuation of cattle would be contentious;
- Imported animals would have to be inspected, adding greatly to the burden of administration;
- Insufficient evidence that stockowners were willing to bear the loss and inconvenience of mass slaughter.

It seems certain that the potentially massive cost of compensation was the real inhibiting factor.[37] The Veterinary Department of the Privy Council Office in their Annual Report for

1888 had also favoured compensation, and this issue of slaughter and who should pay for it actually became a major item in agricultural politics at the turn of the century.[38] We will return to it later.

II

The discussion so far should be set in its international scientific context. Robert Koch's discovery of the tubercle bacillus in 1881 was the stimulus for much debate and experimentation in Europe in the decade that followed. Gradually sentiment solidified that both infected milk and diseased meat could be responsible for the human version of the disease. A number of important International Congresses (Table 2) highlighted the problem of bovine tuberculosis in particular. At the International Veterinary Congress in Brussels (1883), for instance, there was a campaign by Bouley, following the work of Toussaint, to encourage the seizure of any whole carcase that contained even a small portion of diseased meat, and this became a widely sanctioned policy, which was then re-endorsed at Paris (1888, 1889), and London (1891).[39] At Paris in July 1888 Chauveau was President of the Congress for the Study of Tuberculosis in Man and Animals and he seems to have been determined that a full airing should be given to the work of Villemin, Cornil and others on tuberculosis as a cross-species zoonosis.[40] He achieved an overwhelming consensus, confirmed by a vote with only three dissenters, in favour of a resolution that 'there is reason to pursue, by every means, including the compensation of those interested, the general application of the principle of seizure and destruction of the entire flesh of tuberculous animals, whatever may be the gravity of the specific lesions found in these animals'. The following year, also in Paris, Chauveau and Nocard convened the 5th International Congress of Veterinary Medicine, with 635 delegates, only four of whom disagreed with the collective statement that 'the flesh of tuberculous animals…ought to be excluded from consumption by men or animals, no matter what may be the degree of tuberculosis and the apparent qualities

of the flesh…'.[41] The sentiment was similar in Paris in 1891, this time due to the 'vehement pleading' of Saturnin Arloing.[42]

< Table 2 here >

The Paris Congresses were very significant. They influenced opinion in Britain to the extent that many experts changed their view from one of scepticism concerning the need for regulation of tuberculous meat, to one of firm conviction that whole carcases should be kept off the market even if only small amounts of diseased material were found. The Glasgow local authority was merely the highest profile example of such a damascene conversion.

The tide in favour of restrictions on diseased meat was in full flood in July 1888 when the French government passed a decree. This provided that wherever the tubercular lesions were not confined to the visceral organs and their lymphatic glands, or where lesions had erupted on the lining membrane of the chest or abdomen, the entire carcase should be condemned.[43] By 1892 there were equally strict laws in Prussia, Bavaria and Saxony requiring removal of a whole carcase when tuberculosis was generalized or the animal emaciated.

III

On 9th May 1889 Peter Fyfe, Glasgow's SI, entered the abattoir in Moore Street and seized two carcases. One, belonging to a wholesale butcher Hugh Couper, was of a bullock, and the other was of a cow owned by Charles Moore, a meat salesman.[44] This apparently mundane incident proved to be highly significant in the history of the meat and livestock industries, and helps us to understand the evolution of this particular system of provision in Britain.[45]

The two butchers were asked if they would agree to the destruction (without compensation) of the carcases, both of which showed signs of bovine tuberculosis. They declined and were prosecuted under the Public Health (Scotland) Act of 1867, which prohibited the sale of meat unfit for human consumption.[46] The Glasgow United Fleshers'

Society paid Couper and Moore's costs in the court case that followed in the hope that a favourable verdict would protect the future interests of their members.[47]

The trial lasted four days. Unusually, the proceedings were published verbatim, and run to 414 pages of evidence, generated from 5,430 questions asked of 35 witnesses.[48] These were eminent doctors, vets and MOsH, some of whom had travelled long distances from England. Overall this was a unique amount of effort for four sides of diseased beef but, in the words of Behrend, the case was 'epoch-making'.[49] This was because the trial was a step towards deciding two major issues: first, what is a minimum threshold of food quality that is acceptable; and, second, who in the food chain is responsible: the producer, the retailer, or the state?

The case hinged on whether the local authority had the right to seize a whole carcase that showed signs of tuberculosis, or whether the diseased parts should have been cut out and the rest allowed on to the market. Everybody seems to have agreed that generalised tuberculosis in the shape of an emaciated beast should mean full condemnation but expert opinion was divided in 1889 on the implications of disease localised to one small portion of the animal.[50]

The Glasgow local authority had not previously prosecuted meat dealers in this way but their MOH, Dr James Russell, took an interest in the issue of tuberculosis in the food supply.[51] He had earlier expressed his frustration at the lack of powers to deal with diseased, live animals and he had also spoken out in print on the contamination of milk.[52] No doubt at his instigation, the Public Health Committee met on 8th April 1889 and appointed a sub-committee on the inspection of dead meat.[53] On April 26th Chief Constable Boyd changed his orders to the police inspectors, instructing them to 'pass nothing [they] could see a speck of disease upon'.[54] Much hung on what was visible because, as evidence given in the course of this trial proved, there were still doctors and veterinarians who could not grasp the concept of microscopic infectivity and there were still others, not always the same individuals, who

were unable even to accept the germ theory of disease. The latest thinking was most clearly described by John McFadyean:

> 'Because, although tuberculosis may be…always strictly local to commence with, there is a tendency, or there is the danger at any rate, of it becoming general if the bacilli burst into the bloodstream, and we can never declare with absolute certainty that in any particular carcass that has not occurred, because if the bacilli have gained access to the bloodstream and have settled in different organs to take some time, a week or ten days probably, to determine the formation of the tubercles.'[55]

Care and attention is still required even in modern-day meat inspection because the (occasional) discovery of dry caseous masses in the bovine lung, udder, pleura or lymph nodes is an indication of generalized tuberculosis, which may have reached the muscles due to a breakdown of resistance. Nowadays about 70 per cent of an American meat inspector's time is devoted to necropsy, especially examining lymph nodes for the discoloration or morphological change associated with tuberculosis. In Australia 25 lymph nodes must be sliced and checked but there is evidence that even the most conscientious of abattoir inspections miss signs of tuberculosis.[56] In a recent experiment with one herd, the members of which were all tuberculin test reactors, signs of tuberculosis were found in only 19 per cent by meat inspection in the abattoir but in 52 per cent under the most precise conditions of laboratory autopsy.[57]

The universal practice in England in 1889 was to require the removal of the visibly diseased meat only, but in Scotland local authorities were more aggressive. Greenock (since 1874), Paisley (from 1887), Falkirk and Edinburgh had for some time been destroying whole carcases with even the slightest signs of disease.[58] At the trial it became clear that the two Glasgow carcases would have been passed under the city's old rules, but the authority for the shift in policy was said to have come from science: 'no unbiased person fully acquainted with the evidence on both sides can entertain any other opinion than that the only course open to the Sheriff was to declare the two carcases in question unfit for the food of man'.[59]

In his judgement, Sheriff-Principal Berry made several important pronouncements. The first was especially significant, that 'the view that tuberculosis is communicable from one of the lower animals to man must, as the evidence shows, be considered an established scientific fact...'.[60] Although scientific opinion was generally along these lines, such an opinion remained controversial so long as Robert Koch continued to maintain that the danger to humans through meat and milk was minimal.[61]

The judge went on to state that:

> 'my conclusion from the evidence is that this is not a sufficient protection against the risk of communication of the disease by ingestion. There may be no appearance visible to the naked eye of the action of the tubercular bacillus in a particular part of the animal, and yet it may not improbably be there... The evidence leads me to the conclusion that it would not be proper to trust to cooking to be of sufficient protection'.[62]

Again, this was a bold assertion and one that was not borne out by research. A few years later Dr German Sims Woodhead reported that there was little danger to humans from tuberculous meat so long as it was adequately cooked.[63] It seems that the flesh of animals is rarely infected with tuberculosis to the same extent as the internal organs and cavities, and that the danger is therefore mainly in the offal or in the custom of feeding meat juice and raw meat to invalids.[64]

The third aspect of the judgement limited the universal application of the Glasgow case. Although Sherriff Berry commented that the present practice 'in various large towns in England' of stripping out tuberculous portions of carcases 'is attended with danger to the public health', he nevertheless felt that:

> 'I do not think that I require to take up the position that the carcase of every animal shown to have suffered from tuberculosis, however limited in degree or apparently localities, must be condemned…The disease is shown [in this case] to have been not

merely local. It was so far generalized as to extend to the lymphatic glands, and to parts which would have gone out into the market for food.'[65]

In other words, the carcases under review were in a category mid-way between the extremes of having only local signs of disease and being infectious in every part. McFadyean concluded that the 'decision has much less value as a precedent than it was expected to have'. This was because the trial came to focus on the need to condemn whole carcases of animals with generalized tuberculosis and not on advanced, localised tuberculosis.[66]

Overall, the Sheriff found in favour of the local authority, a judgement that was quickly picked up nationally.[67] Although he claimed not to have read any newspaper accounts, he must have been aware of the publicity that surrounded the case. *The Glasgow Herald* in particular was responsible for stoking up public interest. From April 20th to May 17th it ran a fourteen-part analysis of the issues before the court hearing began, and then a daily report of the trial from May 25th to June 21st. Dugald McKechnie, counsel for Hugh Couper, saw this coverage as prejudicial to his client's interests, and remarked that 'if I had a jury here, I would have asked your Lordship to call the *Herald* to the bar for publishing on the eve of such an important trial as this'.[68]

IV

In retrospect, Sir Thomas Elliott, the Secretary of the Board of Agriculture, identified the year following the Glasgow case as being a hinge point. Before that his office had received representations from local authorities and public health societies wanting greater protection for consumers. From then on there was a much greater interest from meat trade associations worried about the seizure of diseased carcases; from veterinary surgeons arguing that tuberculosis could be prevented from getting into the food chain by establishing a better system of inspection; and from County Councils and agricultural associations, especially in Scotland, urging slaughter with compensation.[69]

There was a flurry of activity after the trial. In Glasgow itself the local authority sent deputations to Manchester, Liverpool and Edinburgh to gather information on best practice in meat inspection. They also considered increasing their own meat inspectors from two to five, under the management of a 'trained and scientific veterinary surgeon'.[70] The United Fleshers' Society and the Wholesale Butchers' Society immediately demanded representation on the Health Committee but they were unable to prevent planning for the relevant clauses in the Bill that was the following year to become the Glasgow Police (Amendment) Act (1890).[71] Nor did they materially influence Section 284 of the Burgh Police Act (1892), which gave local authorities in Scotland powers to replace all private slaughterhouses with public abattoirs.[72] This was gradually adopted over the next thirty years, leaving only the small rural slaughterhouses outside the fully regulated, city-based inspection system.

Following the Glasgow case, there was a tightening of meat control in some of those cities that had inspectors. This was most feasible in what Anne Hardy has called the 'pioneering municipalities', which had a 'modernizing, forward-looking approach to public welfare'.[73] Liverpool, Belfast, Leeds and Newcastle began confiscating whole carcases where there was evidence of tuberculosis, but others remained lenient. Some vets and most farmers and meat traders criticized the 'excess of zeal' shown by a few MOsH.[74] They cited the uncertain science, which made the diagnosis of tuberculous meat difficult for even experienced inspectors.[75] Most magistrates seem to have concurred because, of the 20,414 tuberculous carcases seized by MOsH between 1892 and 1895, only 2.13 per cent were actually condemned by the courts.[76] The President of the Board of Agriculture, Henry Chaplin, rejected confirmation of the Glasgow ruling from the centre, claiming that he had no power over meat.[77] He is reported to have said that 'so far as he could learn, there was at the present moment an enormous quantity of meat of this description consumed daily throughout the country without the slightest harm...' and that 'the question was more for scientists and

experts than for the Board of Agriculture. After the experts have settled the question, then it would be for the Board, if necessary, to do their part'.[78]

Such was the level of worry among the farming and meat trade interests about uncoordinated local action on diseased meat that they lobbied parliament immediately after the Glasgow judgement and their supporters, such as Lees Knowles MP, asked questions in the House of Commons and managed to force a short debate in 1890.[79] This was followed by a deputation of MPs to the Presidents of the Board of Agriculture and the LGB. The influence of the Glasgow case is obvious here because of the several references made to standards of meat inspection varying between cities. As a result of this meeting, the LGB, along with the Scottish Office, agreed to sponsor some research on the effects of diseased meat.[80] This took the form of a Royal Commission (RC1) on Tuberculosis charged with the task of discovering the facts.[81]

There was much cynicism about government motives, however. The editor of the *British Medical Journal* was scathing about what he saw simply as delaying tactics:

> 'It was contended by those in authority that the matter was one to be left entirely for the present to "scientists and experts". It is thus that responsibility is evaded...It should surely not be necessary to be able to prove beyond a certain reasonable probability that disease in cattle is dangerous to the community, in order that preventative measures should be taken'.[82]

The leader writer of *The Times* was of a similar view. He called the RC1 'an absurdity' and 'an admirable machinery for the production of delay'. In his view, the reason that 'this commission dragged along its slow length for four weary years' was because politicians were 'professionally interested in the collective vote of the meat trade'. He argued that the scientific members, if they had been left to themselves, would have completed the enquiry in a 'small number of months'.[83]

In 1894 the chairman of this RC, Lord Basing, died and was replaced. It was then reconstituted to hear new evidence but the report was not released immediately, probably due to the General Election that was looming in 1895.[84] William Hunting, the editor of the *Veterinary Record* acidly commented that one reason for inaction, the stated problems of diagnosis, had now been removed with the advent of tuberculin, but there had been no change of heart in Westminster or Whitehall. In his view 'everyone is sick of the prolonged exhibition of "how not to do it"'.[85] Later he accused the government of being 'afraid to issue it [the report] lest they should be compelled to legislate on a difficult question. The LGB seem to be as timid as the Board of Agriculture about tuberculosis'.[86]

One reason for the sensitive nature of the findings of the RC1 was revealed in the minority report by Professor George Brown. He stated that he was 'unwilling to allow the alleged grievances of farmers and others concerned in the meat trade to pass altogether unnoticed' and demanded 'a properly regulated system of meat inspection by persons competent to judge as to the effect and character of the tuberculous deposits'.[87] He shied away from the issue of compensation but stressed that expert inspectors would provide a fair and professional service that would reduce the sense of injustice among meat traders.

Lees Knowles was one of a number of MPs who took a continuing interest in cattle tuberculosis. In was partly due to his pressure in the House in March 1890 that the RC1 had been established and in March 1896 he moved that another enquiry (RC2), of extended scope, should be appointed to consider the administrative procedures that had been largely excluded from its predecessor's report.[88] The LGB assented and commissioners were selected in July of that year.

V

The pan-European consensus about the seizure of diseased meat so painstakingly built in the 1880s began to crumble in the 1890s. Some of the earlier government decrees were repealed,

for instance in the case of Hesse Nassau in 1892, because they 'have repeatedly given rise to erroneous action'.[89] Both Nocard in France and McFadyean in Britain had consistently opposed the seizure of whole carcases and it was their point of view that eventually prevailed at the International Congress of Hygiene and Demography in London in 1891 and the Sixth International Veterinary Congress in Berne in 1895.[90] McFadyean went further and was one of the few commentators to publish 'a protest against exaggeration' in the tuberculosis-from-food debate.[91] He was convinced that there was little danger of catching tuberculosis from eating infected meat.[92] For these views he was vilified by some of his colleagues for being 'a special pleader for a cowardly government' and as having appeared 'to minimize the importance of tuberculosis to agriculturalists and to consumers...'.[93]

The 1898 Report of the RC2 was an interesting summary of the current views. On the one hand it played down the risk from infected meat but, on the other, it was in favour of improved, standardised procedures for the seizure of parts of carcases or whole carcases. This was because 'the widest discrepancy prevails in opinion and practice. Chaos is the only word to express the absence of system in the inspection and seizure of tuberculous meat...'.[94] In future the Commissioners thought it essential for all meat inspectors to be qualified, by passing an appropriate examination but, crucially, they settled for cutting out meat with localized disease, thus ignoring the possibility of mycobacteria being present in the blood and lymphatic systems. Circulars from the LGB in 1899, 1901 and 1904 clarifying the issue of seizure were based on the RC2 report.[95] In future, whole carcases were to be seized only when:

- There was miliary tuberculosis of both lungs;
- Tubercular lesions were visible in the muscular system, lymphatic system, or between muscles;
- There were lesions in the pleura and peritoneum;
- Tubercular lesions were found in any part of an emaciated carcase.

The LGB stressed that 'measures more stringent than those advocated by the RC are not called for' and they recommended that butchers who notified the local authority of diseased meat should not be prosecuted.[96] The latter point had been raised in a Select Committee on the 1904 Bill that we will discuss later.

The advice of the RC2 and the LGB on the seizure of meat was now much clearer than anything that had been available before but it did not have the force of law and continued for many years to be interpreted very differently from authority to authority, to the extent that by the early 1920s there had developed a 'concentration of traders of inferior grades of meat in certain districts, where the standards of condemnation were less stringent'.[97] The recommendations on generalized tuberculosis were followed for a time, but by the 1920s:

> 'many of the best inspectors had long given up following that advice, as savouring of panic legislation...It was gradually becoming the opinion of many that there was no justification for the wholesale condemnation which took place in some districts of carcases in localized bovine tuberculosis. Many inspectors reached the stage of using their own judgement entirely.'[98]

Dr Henry Littlejohn, who had a long career as the MOH for Edinburgh, experienced the vicissitudes of intellectual fashions in meat inspection. In 1895 he reported that fifteen years before he would have 'passed carcases in which tubercle was manifest, but now we consider it advisable to condemn all carcases which show a certain condition of infection in the glands'.[99] By 1909 he had changed his mind again, returning to a pragmatic view that 'the risk of contracting tuberculosis by eating the meat of tuberculous animals is not so great as is generally believed'.[100] Even this length of time after the Glasgow case there was genuine confusion amongst the regulatory community, with a full range of views expressed from rigorous intervention to inaction, and even a recommendation from one extreme group for the establishment of specially licensed outlets openly selling diseased meat, on the lines of shops

in Copenhagen and the German Freibank system where such meat was sterilized with steam and retailed cheaply to the poor.[101]

VI

Moved to action by the Glasgow case, the meat trade embarked on a long campaign to protect their vested interests. In 1896 a delegation of the National Federation of Meat Traders lobbied the President of the Board of Agriculture and the Board of Trade and they also gave evidence to both the RC1 and the RC2. In the last of these fora they expressed their bitter resentment at what they regarded as an arbitrary threat to their livelihoods. Most rejected cattle insurance as a solution.[102] They preferred either shifting the responsibility to the farmer by demanding a warranty of freedom from disease for the fat animals they supplied, or, alternatively, asking for compensation from the local rates or the central government.[103] The Edinburgh Master Butchers' Association did, however, take the warranty option in 1899, as did their colleagues in Cardiff in 1903.[104] But arguments over warranty led to frequent disagreements and ill-feeling between farmers and butchers, with occasional boycotts of markets by one side or the other.[105] Dealers and butchers received little encouragement from government about either warranty or compensation, the usual argument deployed being that risk was an understood part of the trade.[106] In its final report the RC2 was split four votes to three *against* compensation for diseased meat. By this stage it is fair to say that meat traders were feeling beleaguered and friendless:

> 'For ten years the [Meat Traders'] Federation has been "pegging away" at the tuberculosis question, and during that period not one single Agricultural Society or Farmers' Club has shown the slightest desire to discuss the subject with representative meat traders...'.[107]

The year after the RC2's report, in 1899, the President of the Board of Agriculture, Walter Long, made a widely reported speech to farmers in Newcastle. In effect he

enunciated the five principles that guided government action, or perhaps one ought to say *inaction*:

1. The data were still too indefinite and imprecise to justify asking parliament for public money for a slaughter policy or to subject livestock keepers to the inevitable financial loss.
2. There was no proof that a slaughter policy would eliminate bovine tuberculosis.
3. The Tuberculin Test could be fraudulently manipulated by the farmer.
4. Experts could not agree on the details of administering tuberculin.
5. Other forms of diagnosis, such as the veterinary inspection of udders, were not reliable.

In short, 'at present too little was known, too much doubted, for Parliament to be justified in imposing upon the country heavy expenditure on wholesale restrictions which would be strongly resisted in many quarters, and which might not do anything effectual for the extinction of the disease'.[108]

The question of compensation refused to go away and indeed became a chronic problem for successive governments over the next quarter of a century. Questions in the House on this began in 1899 and fending them off became a regular feature of the President of the LGB's performance at the despatch box. A steady trickle of petitions also came from bodies such as the Smithfield Club, The Highland and Agricultural Society of Scotland, the Central Chamber of Agriculture (CCA), the British Dairy Farmers' Association, and so on.[109] The standard response was that the government had no immediate plans for legislation on compensation for the detection of tuberculosis in cattle.

Numerous attempts were made by MPs to introduce legislation compelling local authorities to pay compensation for seized meat. In 1901 a private members' Bill was introduced, unsuccessfully, to the House of Commons to amend the law relating to the compensation paid for slaughtered animals, and four other, similar bills (Table 3) were

brought in between 1903 and 1906. They all had cross-party support and several MPs co-sponsored two, three or four of these Bills. The 1904 Bill, with support from the CCA and the meat trade, was the only one to reach a Second Reading but it fell because of opposition from MPs who wanted compensation to come from central rather than local funds.[110] The objection was on the lines of 'why should the slaughtering districts, usually in or near towns, meet the cost of disease originating in the breeding areas?' A Select Committee reported on this Bill in 1904 but their comment was that the loss to butchers was not great because most disease was concentrated in older stock of lower value and their recommendation was that mutual insurance should pay for half of any loss, with the other half coming from government. [111]

< Table 3 here >

A Tuberculosis (Animals) Committee was formed in 1908 to represent farmers' and landowners' societies from all over the country in response to the threat of legislation about the slaughter of tuberculous animals (cattle and pigs).[112] It was chaired by the conservative figures Lord Middleton and the Earl of Northbrook, and supported by the eminent veterinarian John McFadyean.[113] Its first task was to hear the butchers' case for protection from loss incurred when they bought healthy-looking animals, only later to have their meat condemned when tuberculosis was identified by the meat inspector. The Committee deplored the lack of cooperation between the farmers and butchers and proposed that they should hold a joint conference to air the grievances on both sides.[114] This was the same year that the National Farmers' Union was founded as a direct result of the demand by the National Federation of Meat Traders' Associations that graziers should give a warranty of health on their cattle.[115] It was realised that the CCA, although it was ultimately successful in negotiating a climb-down by the butchers on this issue in 1909, was dominated by landowner interests and that the voice of farmers needed to be heard separately.[116]

Despite much lobbying and political manoeuvring, very little was achieved before 1914 in solving the problem of tuberculous meat. It took the disruption of a War to facilitate change.

VII

During the First World War the freedom of the meat trade was curtailed. Butchers were allocated cattle rather than being able to buy them on an open market and, as a result, they found it impossible to avoid diseased carcases. In recognition of any involuntary loss they were compensated out of central funds. In 1920 the emergency arrangements ceased and so did the compensation. This caused disquiet in the trade and in June of that year a combined deputation of the wholesale and retail interests visited the Ministry of Health.[117] Because the government was under pressure in the press and in parliament due a number of meat-related issues, such as decontrol, retail prices, and problems related to imports, an enquiry was set up in the form of a DC on meat Inspection chaired by Sir Horace Monro.[118] The report of this Committee was completed in July 1921 and the Minister (Sir Alfred Mond) agreed to implement most of the recommendations the following March.[119] The results were enshrined in Memo 62/Foods (1922), the Public Health (Meat) Regulations (1924), the Public Health (Meat) Regulations (Scotland)(1924), and the Rural District Councils (Slaughterhouses) Order (1924).[120] The Memo gave detailed instructions on meat inspection and the most thorough definition yet of the meat that should be condemned.[121] The whole carcase was to be seized only when the animal had been emaciated or there were signs of generalized tuberculosis.[122] No compensation was to be paid to the butcher. The Regulations laid down conditions for killing animals and required any disease found by the slaughtermen to be reported to the local authority. The parallel Public Health (Meat Inspection) Regulations (Scotland)(1923) were stronger than the Memo and their definition of a meat inspector gave greater prominence to vets and had the statutory backing of the Public Health (Scotland) Act,

1897. The disadvantage of both sets of rules was that they were adoptive: local authorities were not compelled to use them and many used this loophole to avoid expenditure.[123]

One difficulty was in inspecting and controlling the abundance of small private slaughterhouses, 20,000 in 1927.[124] The municipalization of abattoirs, theoretically possible under the Public Health Act (1875), was one possibility to gain full control and impose standards, but such slaughter facilities existed in only fifty towns in England and Wales by 1899 and 100 in 1930.[125] Since 1849 the Scots had been aiming to emulate the German tradition of a public monopoly of slaughtering in cities, a process accelerated by the Burgh Police (Scotland) Act (1892). By 1910 60 per cent of burghs had public slaughterhouses and in 1930 80 per cent of home killed cattle in Scotland passed through these abattoirs.[126] Such municipal enthusiasm was not common south of the border until after 1966, partly because of the political strength of the farming and meat industries.[127] Shirley Murphy, MOH to the London County Council, for instance, had suggested the abolition of private slaughterhouses in 1899 but this brought complaints from the London Butchers' Trade Society, who argued that meat was not the main means by which tuberculosis was spread.[128] In 1912 the National Federation of Meat Traders threatened to sue any local authority that tried to close down private slaughter houses.[129]

For William Savage, 1924 was a turning point. 'Previous to the passing of these Regulations it may be said that, apart from a few progressive districts, meat inspection in rural areas was non-existent'.[130] He would have preferred all premises to be licensed but at least the slaughterhouses are now subject to bye-laws regarding structure and cleansing. He pointed out that in Somerset, where he was MOH, only five out of seventeen rural SIs had a special meat inspector's certificate, yet they were the ones responsible for the regulations. Much more meat was condemned in the areas where the SI had a certificate. 'It is obvious that unless an inspector possesses the necessary knowledge and experience, meat inspection is going to be a farce'. The time devoted to inspection also varied a lot: '…in many rural

areas it is a fairly easy matter to deal with unsound meat and dispose of it without any inspection having taken place'.[131]

In September 1937, Memo 62a/Foods provided an update on meat inspection but the situation remained largely unchanged from 1922 to 1963.[132] In 1950, even though many tuberculous cows were being slaughtered under the nationwide eradication programme, it was rare to condemn whole carcases. The economic loss would have been too great and 68 per cent of the meat of diseased cows was passed as fit for human consumption.[133] The principle remains today with careful butchery and excision of specified bovine offals being considered sufficient, for instance, to minimize the danger of BSE to the public.[134] In practice cross-infection from contaminated abattoir equipment and surfaces has always been a risk factor.[135] The 1955 Food & Drugs Act gave new powers of inspection to local authorities, 'but some meat still leaves slaughter-houses uninspected'.[136]

VIII

This paper has essentially been about negotiated food quality in the context of relationships between actors constructed through the law courts and regulatory frameworks legislated in Parliament. Such conventions are by no means unusual but an interesting feature here has been the role of science. Between approximately 1885 and 1895 the theoretical consensus amongst vets and MOsH was in favour of the seizure of whole carcases that had even localized tuberculosis, although the practical application of this knowledge varied considerably. After that there was a shift to a much milder view of the risks associated with diseased meat, but the relationships between all of the interested parties, based before 1885 on a combination of ignorance and what amounted to a conspiracy of silence, had been destabilised to such an extent that there was no going back. After 1895 there were thirty years of guerrilla warfare between farmers and meat traders, and between traders and meat

inspectors, before eventually the report of a DC in the early 1920s provided the basis for a series of compromises.

Table 1. Number of meat inspectors recorded in official survey, 1896

City	Inspectors
London	191
Glasgow	13
Portsmouth	7
Edinburgh, Dundee	6
Paisley, Liverpool	4
Manchester, Blackpool	3
Greenock, Birmingham, Bolton, Derby	2
Birkenhead, Bradford, Hull, Nottingham	1

Source: *Return Showing the Number of Officials Employed as Meat Inspectors*, BPP 1896 (74) lxviii.349-358.

Table 2. International conferences that made a contribution to the tuberculous meat debate, 1883-1901

Date	Location	Conference
1883	Brussels	2nd International Veterinary Congress
1884	The Hague	5th International Congress of Hygiene
1885	Paris	3rd International Veterinary Congress
1888	Paris	1st Congress for the Study of Tuberculosis in Man and Animals
1889	Paris	5th International Veterinary Congress
1890	Berlin	10th International Medical Congress
1891	London	International Congress of Hygiene and Demography
1891	Paris	2nd Congress for the Study of Tuberculosis in Man and Animals
1893	Paris	3rd Congress for the Study of Tuberculosis in Man and Animals
1895	Berne	6th International Veterinary Congress
1898	Paris	4th International Congress on Tuberculosis
1899	Baden Baden	7th International Veterinary Congress
1899	Berlin	International Congress upon Tuberculosis
1901	London	British Congress on Tuberculosis

Sources: *BMJ, JCPT, Lancet, Veterinary Journal, Veterinary Record.*

Table 3. Unsuccessful Bills, 1901-06

Name of Bill	Sponsor	Proposed compensation (per cent)	Who pays (per cent)	
			Local	Central
Diseased Animals Compensation Bill (1901)	Louis Sinclair	25-50	50	50
Tuberculosis (Animals) Compensation Bill (1903)	Ernest Gray	100	100	-
Tuberculosis (Animals) Compensation Bill (1904)	R.J. Price	100	100	-
Tuberculosis (Animals) Prevention and Compensation Bill (1905)	William Field	66	50	50
Tuberculosis (Animals) Prevention and Compensation Bill (1906)	Ernest Gray	66	50	50

Sources: BPP 1901 (244) i.15; 1903 (280) iv.767; 1904 (16) iv.599; 1904 (272) vii.429; 1904 (16) iv.599; 1904 (272) vii.429; 1905 (152) v.481; 1906 (53) v.527
Note: For parliamentary formalities, see: *PD*, 125 (1903), col. 816; 144 (1905), col. 663; 152 (1906), col. 805.

Footnotes

[1] An earlier version of this paper was given at a conference on 'Animals, Vets and Vermin in Medical History' at the University of East Anglia in 2000. I am grateful to colleagues for their comments on that occasion and to two anonymous referees for their helpful suggestions. I retain full responsibility for the views expressed.

[2] Henk Renting, Terry Marsden and Jo Banks, 'Understanding alternative food networks: exploring the role of food supply chains in rural development', *Environment and Planning A*, 35 (2003), pp. 393-411.

[3] David Goodman, 'Agro-food studies in the age of ecology: nature, corporealty, biolpolitics', *Sociologia Ruralis*, 39 (1999), pp. 17-38; Jonathan Murdoch, Terry Marsden and Jo Banks, 'Quality, nature and embeddedness', *Economic Geography,* 76 (2000), pp. 107-125; Pierre Stassart and Sarah Whatmore, 'Metabolising risk: food scares and the un/re-making of Belgian beef', *Environment and Planning A*, 35 (2003), pp. 449-462.

[4] There are several notable exceptions to this, recent examples of which are: Angela Tregear, 'From Stilton to Vimto: using food history to rethink typical products in rural development', *Sociologia Ruralis*, 43 (2003), pp. 91-107; Keir Waddington, 'Safe meat and healthy animals: BSE and bovine TB', *History & Policy*, 4, site accessed June 2003, http://www.historyandpolicy.org/main/policy-paper-04.html.

[5] Anon, 'Sale of diseased meat in Glasgow', *Lancet*, i (1889), p. 1314.

[6] *Meat Trades Journal and Cattle Salesman's Gazette*, 1st June (1889), p. 12; *Sanitary Record* (1889).

[7] Michael French and Jim Phillips, Cheated not poisoned? Food regulation in the United Kingdom, 1875-1938 (Manchester, 2000); Peter Atkins and Alessandro Stanziani, 'From caveat emptor to caveat venditor: debates about milk falsification in France and Britain, 1850-1914' (forthcoming, 2004).

[8] Terry Marsden, Andrew Flynn and Michelle Harrison, *Consuming interests: the social provision of foods* (London, 2000); Laurent Thévenot, 'Innovating in "qualified" markets: quality, norms, conventions', paper to Conference on 'Systems and Trajectories of Agricultural Innovation', University of California, 23-25 April, 1998.

[9] Anon., *Tuberculous meat: proceedings at trial under petitions at the instance of the Glasgow local authority against Hugh Couper and Charles Moore, before Sheriff Berry* (1889), QQ. 27-28.

[10] Charles Creighton, 'Grounds for believing that the tubercular disease of animals which supply milk and meat for human use, is communicated by such food to man', *Transactions of the Seventh Session of the International Medical Congress held in London August 2nd-9th, 1881*, 4 (1881), pp. 481-6; Henry Behrend, *Cattle tuberculosis and tuberculous meat* (London, 1893), p. 8.

[11] Anon., *Tuberculous meat*, q. 3450.

[12] Peter Atkins, 'The intra-urban milk supply of London, circa 1790-1914', *Transactions of the Institute of British Geographers*, new series, 2 (1977), pp. 383-99.

[13] [John McFadyean] 'The prevention of tuberculosis in cattle', *Journal of Comparative Pathology and Therapeutics*, 6 (1893), p. 353.

[14] See also the data for 1890-91 in the *Annual Report of the Director of the Veterinary Department*, BPP 1892 (C6630) xxvi.1.

[15] For more about regional variations in the incidence of tuberculosis, see Richard Perren, *The meat trade in Britain 1840-1914* (1978), pp. 135-36.

[16] Anon., *Tuberculous meat*, evidence of William Anderson (Q. 5,065), and John McLellan (QQ. 218-9).

[17] Alfred Holburn, 'Some suggestions with a view to the improvement of meat inspection in country districts', *London Congress, Section F, July 1905, the Royal Institute of Public Health* (1905).

[18] John Simon, 'Diseases of livestock in their relation to the public supplies of meat and milk', in *Fifth Report of the Medical Officer of the Privy Council, 1862*, BPP 1863 (161) xxv, pp. 21-32; *Annual Report of the Agricultural Department of the Privy Council Office on the Contagious Diseases Inspection and Transit of Animals…1888*, BPP 1889 (C5679) xxvii, p. 9.

[19] Arthur Newsholme in his memoirs notes that he had a great deasl of trouble with butchers contesting his condemnation of meat. Arthur Newsholme, *Fifty years in public health* (1935), pp. 237-8.

[20] W. Brown, 'Examination of carcasses in cases of cattle tuberculosis', *Lancet*, ii (1901), pp. 205-8.

[21] *Parliamentary Debates*, 137 (1904), col. 1359.

[22] Sir Herbert Maxwell (Chairman), 'General report', *Royal Commission on Administrative Procedures for Controlling Danger to Man Through the Use as Food of the Meat and Milk of Tuberculous Animals*, BPP 1898 (C8824) xlix, p. 343.

[23] Meat inspection was also on the syllabus of the Sanitary Inspectors' Examination Board, whose exams Sanitary Inspectors in London had to pass in order to qualify. *Parliamentary Debates*, 13 (1909), col. 184.

[24] T. Dunlop Young, 'Meat inspection', in G.H. Collinge, T. Dunlop Young, and A.P. McDougall, *The retail meat trade: a practical treatise by specialists in the meat trade. Volume 1* (1929), p. 243.

[25] *Return showing…the number of Sanitary Inspectors, Inspectors of Nuisances, and other officers appointed to act as Inspectors of Meat…*, BPP 1904 (326) lxxxii, 727.

[26] T. Roberts, 'A retrospective assessment of human health protection benefits from removal of tuberculous beef', *Journal of Food Protection*, 49 (1986), pp. 293-298.

[27] Dunlop Young, 'Meat inspection', p. 244.

[28] Peter Koolmees, John Fisher and Richard Perren, 'The traditional responsibility of veterinarians in meat production and meat inspection', in Frans Smulders (ed.) Veterinary aspects of meat production, processing and inspection (Utrecht, 1999), pp. 7-26.

[29] Creighton, 'Grounds for believing'; A. Lydtin, G. Fleming, and M. van Hertsen, *The influence of heredity and contagion on the propagation of tuberculosis: and the prevention of injurious effects from consumption of the flesh of tuberculous animals* (London, 1883); Behrend, *Cattle tuberculosis*.

[30] Mick Worboys, *Spreading germs* (2000), ch. 2.

[31] *Parliamentary Debates*, 342 (1890), col. 1554.

[32] [John McFadyean] 'Tuberculosis in Scotland', *Journal of Comparative Pathology and Therapeutics*, 1 (1888), p. 98; *RC2*, BPP 1898 (C8831) xlix, QQ 155-57. The Scottish connexion continued in 1888 when the Medico-Chirurgical Society of Edinburgh sent a memorial to the Privy Council asking for a consideration of tuberculosis in the meat and milk supply. Anon., 'Tuberculosis in relation to food supplies', *British Medical Journal*, i (1888), p. 759.

[33] The editor of the *Lancet* commented acidly that for economic reasons animal disease was being given more attention than human disease. Anon., 'The government and the use of tuberculous meat', *Lancet*, i (1890), p. 484.

[34] Jacob Wilson (Chairman), 'Report', *Departmental Committee into Pleuro Pneumonia and tuberculosis in the United Kingdom*, BPP 1888 (C5461) xxxii.

[35] This was supported by the Central Chamber of Agriculture. A.H.H. Matthews, *Fifty years of agricultural politics, being the history of the Central Chamber of Agriculture 1865-1915* (1915), p. 35.

[36] RC2, Q.167, evidence of Sir Thomas Elliott.

[37] [John McFadyean] 'Ought tuberculosis to be included in the Contagious Diseases (Animals) Act?', *JCPT*, 8 (1895), pp. 145-48.

[38] BPP 1899 (C5679) xxvii. pp. 8-9.

[39] [John McFadyean] 'Congress for study of tuberculosis in man and animals', *JCPT*, 1 (1888), pp. 262-75; [John McFadyean] 'The inspection of tuberculous meat', *JCPT*, 4 (1891), pp. 349-51; Saturnin Arloing, 'Tuberculosis', *JCPT*, 2 (1889), pp. 199-218; D.A. de Jong, 'The use of the flesh of tuberculous animals', *JCPT*, 12 (1889), pp. 315-25.

[40] Anon. (ed.) *Comptes rendus et mémoires du congrès pour l'étude de la tuberclose chez l'homme et les animaux* (Paris, 1888); Anon., 'Congress for the Study of Tuberculosis in Man and Animals', *JCPT*, 1 (1888), pp. 262-75.

[41] *JCPT*, 2 (1889), pp. 369-86.

[42] E. Nocard, *The animal tuberculoses, and their relation to human tuberculosis* (1895), pp. 87-89.

[43] *JCPT*, 1 (1888), p. 288.

[44] The bullock had been bought via a cattle trader from an estate at Lunan, between Arbroath and Montrose in Angus.

[45] The Glasgow case was also a significant event in the acceptance of the germ theory in veterinary medicine. Mick Worboys, '"Killing and curing"; veterinarians, medicine and germs in Britain, 1860-1900', *Veterinary History*, 7, (1992), pp. 53-71.

[46] In principle, powers of seizure existed under the Nuisances Removal Acts as embodied in the Public Health Act but they were very rarely used.

[47] There were over 300 members. *Royal Commission on Market Rights and Tolls*, BPP 1890-91 (C6268) xxxvii, Q. 15,353.

[48] Anon., *Tuberculous meat.*

[49] Behrend, *Cattle*, p. 39.

[50] The 'entirely opposite opinions' expressed by scientists at the Glasgow trial caused alarm in the medical press. Anon, 'Tuberculosis in meat', *Lancet*, ii (1889), p. 965.

[51] Russell was a controversial MOH. In 1885 he tried to take charge of the Sanitary Department but was thwarted. A few years later, the Glasgow case was an example of his tactical approach to infectious disease prevention. Edna Robertson, *Glasgow's doctor: James Burn Russell, MOH, 1837-1904* (East Linton, 1998).

[52] City of Glasgow, Mitchell Library, MP20.597, 'Report by the MOH regarding animals apparently unfit for human food', 1885; James Russell, *Sanitary requirements of a dairy farm* (Glasgow, 1889).

[53] Mitchell Library, MP29.168, 'Minutes of Health Committee on the Inspection of Dead Meat, 1889'.

[54] Anon., *Tuberculous meat*, Q194.

[55] Ibid., Q. 2,709.

[56] L.A. Corner, 'Post mortem diagnosis of *Mycobacterium bovis* infection in cattle', *Veterinary Microbiology*, 40 (1994), pp. 53-63; L.A. Corner, K. McCubbin, K.J. Small, B.S. McCormick, P.R. Wood, and J.S. Rothel, 'Efficiency of inspection procedures for the detection of tuberculous lesions in cattle', *Australian Veterinary Journal*, 67 (1990), pp. 389-92.

[57] Corner et al., 'Efficiency of inspection'.

[58] Ibid., QQ. 1258, 1911.

[59] [John McFadyean] 'The tuberculous meat cases at Glasgow', *JCPT*, 2 (1889), pp. 138-39.

[60] Anon., *Tuberculous meat*, p. 409.

[61] His most notorious pronouncement was his denial in 1901 that infected meat or milk presented any greater threat to humans than hereditary transmission. Barbara Rosenkrantz, 'The trouble with bovine tuberculosis', *Bulletin of the History of Medicine*, 59 (1985), 155-75.

[62] Ibid., p. 411.

[63] He found that the temperature in the centre of a joint or roll of meat was not always sufficient during roasting to kill the bacilli; boiling was more efficient. 'Inquiry as to how far cooking processes destroy the infectivity of tubercle', *Royal Commission to Inquire into Effect of Food Derived from Tuberculous Animals on Human Health*, BPP 1895 (C7703) xxxv, Appendix, Inquiry III.

[64] John Francis, *Tuberculosis in animals and man* (1958), p. 38; RC1, QQ 1410, 1694.

[65] Anon, *Tuberculous meat*, p. 412.

[66] [John McFadyean], 'Important trial regarding tuberculous carcases at Glasgow', *Journal of Comparative Pathology and Therapeutics*, 2 (1889), pp. 180-95.

[67] *JCPT*, 2 (1889), pp. 138-39; *British Medical Journal*, ii (1889), pp. 1309-19, 1478; *Lancet*, ii (1889), p. 1314; *MTJCSG*, 20th July (1889), p. 8; *Agricultural Gazette*, 24th June (1889), p. 599; *Cowkeeper and Dairyman's Journal*, July (1889), p. 1080; *Veterinary Record*, 29th June (1889), p. 639.

[68] Anon, *Tuberculous meat*, Q. 1,705.

[69] See J.R.U. Dewar, 'The utilization of the flesh of tuberculous animals', *Journal of State Medicine*, 6 (1898), pp. 619-28, for estimates of losses of meat and critical comments about the severity of inspectors.

[70] Mitchell Library, MP20.601, 'Memorandum as to the inspection of meat in Glasgow by the Sanitary Inspector, 29th June 1889'.

[71] 53 & 54 Vict., ch. ccxxi. Sections 19-22 gave powers of meat inspection and seizure, and Section 23 enabled proceedings against the original producer of diseased meat, as if he were

an offender alongside the person selling the meat, and as if he had committed an offence in the city. Sections 20-23 of the Edinburgh Municipal and Police (Amendment) Act (1891), were similar.

[72] The United Fleshers' Society are reported to have appealed against the Glasgow judgement in the Court of Session. *British Medical Journal*, i (1890), p. 1478.

[73] Anne Hardy, 'Pioneers in the Victorian provinces: veterinarians, public health and the urban animal economy', *Urban History*, 29 (2002), pp. 372-87. See also Peter Koolmees, 'Veterinary inspection and food hygiene in the twentieth century', in David F. Smith and Jim Phillips (eds), *Food, science, policy and regulation in the twentieth century: international and comparative perspectives* (London, 2000), pp. 53-68.

[74] J.R.U. Dewar, 'Tuberculosis', *Veterinarian*, 68 (1895), pp. 675-88.

[75] [John McFadyean] 'The inspection of tuberculous meat', *JCPT*, 4 (1891), pp. 349-51.

[76] *Return of number of carcases seized*, BPP 1893/4 (485) lxxvii, p. 589; BPP 1895 (435) lxxxiv, p. 1159.

[77] *Cowkeeper and Dairyman's Journal*, May 1890, p. 113.

[78] *Meat Trades Journal and Cattle Salesman's Gazette*, 1890, 104, 6-7, 9-11; *The Times*, 22nd March 1890, p. 11b.

[79] *PD*, 342 (1890), cols 1547-66.

[80] *The Times*, 25th April 1890, p. 12a-b.

[81] *The Times*, 22nd March 1890, p.11b and March 24th 1890, p. 10c. For comments by the trade press, see *The Meat Trades' Journal and Cattle Salesman's Gazette*, 12th April 1890, p. 102.

[82] Anon., 'The agricultural department and bovine tuberculosis', *BMJ*, i (1890), pp. 791-2.

[83] *The Times*, 26th July 1895, p. 9f.

[84] More than twenty questions were asked in the House complaining about the delays in publication.

[85] William Hunting, 'Tuberculosis: its prevention', *Veterinary Record*, 6 (1893/4), pp. 438-39.

[86] *VR*, 7 (1894/5), p. 562.

[87] RC1, p. 635-7.

[88] *PD*, 342 (1890), cols 1547-55; and 38 (1896), col. 126.

[89] RC2, p. 767.

[90] [John McFadyean] 'The danger of tuberculous meat', *JCPT*, 8 (1895), pp. 237-39; Anon., 'Sixth International Veterinary Congress', *JCPT*, 8 (1895), pp. 259-65. The new consensus was in favour of full condemnation only when the animal was emaciated (unanimous); had a bad appearance (50 votes to 5); when lesions were present in the muscular system (unanimous); or when important lesions were present in several viscera (71-18).

[91] [John McFadyean] 'A protest against exaggeration', *JCPT*, 12 (1899), pp. 269-73. He had made similar comments a decade before in his editorial 'The connection between human and animal tuberculosis', *JCPT*, 1 (1888), pp 352-55, and at the 1889 Glasgow trial, QQ. 2,823-4.

[92] John McFadyean, 'Tuberculosis in cattle', *Journal of State Medicine*, 7 (1899), pp. 185-98.

[93] John McFadyean, 'The National Veterinary Association and tuberculosis: a personal explanation', *JCPT*, 12 (1899), pp. 250-52.

[94] *RC2*, BPP 1898 (C8824) xlix, p. 344.

[95] *VR*, 17 (1904/5), p. 172, from *The Times*.

[96] *The Times*, 8th September 1904, p. 5e.

[97] Gerald Leighton, *The principles and practice of meat inspection* (1927), p. 230.

[98] Ibid..

[99] *RC1*, BPP 1896 (C7992) xlvi, Q. 1443.

[100] A.R. Littlejohn, 'Meat as a source of infection in tuberculosis', *The Practitioner*, 82 (1909), 843-53.

[101] Gerald Leighton and Loudon Douglas, *The meat industry and meat inspection* (1910), pp. 396-97.

[102] The use of mutual insurance schemes did eventually begin to catch on. There were examples in Paisley (1887), West Hartlepool (1891), Carlisle and Belfast. The Newcastle, Gateshead & District Butchers Association (1892) charged a premium of one shilling per animal that adequately covered the cost of a two-thirds compensation to the owners of condemned carcases. In other regions premiums were shared equally between farmers and meat traders. RC2, QQ. 585, 4,384, 5,792, 6,054, and 6,266; J. Share-Jones, 'Animal husbandry and public health (livestock insurance)', *Journal of State Medicine*, 35 (1927), pp. 559-69; Harold Sessions, *Cattle tuberculosis: a practical guide to the agriculturalist and inspector* (1905), pp. 108-111; Leighton and Douglas, *Meat industry*, pp. 1331-58.

[103] RC2, QQ. 349-50, 441-7, 585; Perren, *The meat trade in Britain*, p. 149.

[104] *VR*, 11 (1899), p. 391; and 16 (1903/4), pp. 218-19.

[105] A. Wilson, 'Tuberculosis from a farmer's point of view', *VR*, 9 (1896/7), pp. 292-93.

[106] RC2, pp. 347-8.

[107] *VR*, 12 (1899/1900), p. 107.

[108] This quotation is from a speech by Walter Long when he had been President of the Board of Agriculture. Sheridan Delépine, 'How can the tuberculin test be utilised for the stamping out of bovine tuberculosis?', in *Transactions of the British Congress on Tuberculosis for the Prevention of Consumption, London, July 22nd to July 26th, 1901* (1902), vol. 2, p. 239.

[109] *PD*, 66 (1899), col. 1055; PD, 80 (1900), col. 1315.

[110] Waldorf Astor (Chairman) *Departmental Committee on Tuberculosis*, BPP 1912-13 (Cd 6654) xlviii, 68; *PD*, 133 (1904), cols 327-47.

[111] First Reading 5th February, Second Reading 15th April, Select Committee appointed 8th June, Report Stage 19th July, BPP 1904 (16) iv. 599; *PD*, 129 (1904), col. 483; PD, 135 (1904), col. 1084; PD, 138 (1904), col. 430.

[112] A full list is given in *The Times* for 16th January, 28th February and 9th October 1908.

[113] It was an ad hoc pressure group that lasted until 1920.

[114] *The Times*, 9th October 1908, p. 9f and 7th January 1909, p. 8b.

[115] Graham Cox, Philip Lowe, and Michael Winter, 'Origins and early development of the National Farmers' Union', *Agricultural History Review*, 39 (1991), pp. 30-47. The NFMTA had been founded in 1886-7. By 1910 it had a membership of 14,000 in 148 associations.

[116] The warranty had originally been due to come into force in October 1908 but the President of the Board of Agriculture is reported to have persuaded the butchers to hold fire for a year. See the House of Lords debate on this issue in *PD*, 195 (1908), cols 921-31.

[117] A. John Jackson, *Official history of the National Federation of Meat Associations (Incorporated)* (1956), 104.

[118] Public Record Office, MH 56/65-67, 'Departmental Committee on Meat Inspection'.

[119] Sir Horace Monro (Chairman) *Report of the Departmental Committee on the Legislative and Administrative Measures Necessary to Secure Adequate Protection for the Health of the People in Connection with the Slaughter of Animals and Distribution of Meat for Human Consumption in England and Wales* (London, 1921).

[120] 'Memorandum on a system of meat inspection recommended by the Ministry of Health for adoption by Local Authorities and their officers', Memo 62/Foods, 16th Match 1922.

[121] B. De Vine, 'The Public Health (Meat) Regulations, 1924', *Journal of the Royal Sanitary Institute*, 47 (1927), pp. 654-62.

[122] Generalization was to be inferred from the following check list: miliary tuberculosis of both lungs; lesions multiple, acute and actively progressive; multiple and widespread

infection of lymph glands; diffuse acute lesions of both serous membrane (pleura and peritoneum) and any lymph glands enlarged or contain visible lesions; in addition to lesions in respiratory tract or digestive tract, also lesions in spleen, kidney, udder, uterus, ovary, testicle, brain, or spinal cord; congenital tuberculosis in calves.

[123] Collinge et al., *The retail meat trade, p.* 274; William MacGregor, 'The unification of control of animal diseases and of the meat and milk supply', *Journal of State Medicine*, 43 (1935), pp. 156-65.

[124] J. McAllan, 'Common difficulties in meat inspection', *Journal of the Royal Sanitary Institute*, 46 (1925), pp. 391-94, 391; Collinge et al., *The retail meat trade*.

[125] *Parliamentary Debates* 239 (1930) 590-91.

[126] Dunlop Young, 'Meat inspection'; Koolmees et al., 'The traditional responsibility of veterinarians', p. 12; Leighton and Douglas, *The meat industry*, p. 371; Leighton, *The principles and practice*, p. 7; *PD*, 239 (1930), col. 531.

[127] Koolmees et al., 'The traditional responsibility of veterinarians', p. 12.

[128] London Butchers' Trade Society, *Inspections of meat and milk* (1899).

[129] *Medical Officer*, 8 (1912), pp. 1-2.

[130] William Savage, 'The working of the 1924 meat regulations in rural areas', *Journal of State Medicine*, 34 (1926), pp. 716-22.

[131] Ibid, p. 719.

[132] PRO, MAF 35/313.

[133] John Francis, 'The economic importance of bovine tuberculosis', *Proceedings of the First International Seminar on Bovine Tuberculosis for the Americas, Santiago, Chile, 21-25 September 1970* (Washington, DC, 1972), p. 101.

[134] Francis Smith, *The retreat of tuberculosis, 1850-1950* (London, 1988), p. 181. The RC2 settled for cutting out diseased meat, but in doing so they ignored the possibility of mycobacteria being present in the blood and lymphatic systems.

[135] John McFadyean, 'Experiments with expressed muscle juice from tuberculous carcasses', in *Annual Report, Veterinary Department* (London, 1890), pp. 13-19; Pritchard, *A century*, p. 376.

[136] Sir John Winnifrith, *The Ministry of Agriculture, Fisheries and Food* (1962), p. 179.