Food Safety Regimes in Scotland, 1899–1914

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One of the authors of this paper was recently discussing the historical literature on inter-war unemployment in Britain with a class of honours students, who were amused by the assertion of the scholar who characterised this as a regional phenomenon, concentrated in 'Scotland, northern Britain, south Wales and northern Ireland'.[1] Where, wondered the students, was this region called 'northern Britain', and what kind of 'region' was Scotland? Such eccentric and Anglo-centric conceptualisations of the United Kingdom have perhaps become less pervasive since 1991, when this example was published. The most significant general corrective here has probably been the devolution to Scotland of aspects of political power, but of great importance – when reconfiguring ideas of Britain – in academic and particularly historical circles has been the steady expansion of published research on Scotland's varied economic, social and political development since the Industrial Revolution. Much of this research has, to an extent, revolved around the question of Scottish particularity – or exceptionalism – within the United Kingdom, and also developed understanding of the huge variety of economic and social conditions in industrial Scotland. These have encompassed differentiated experiences of class, gender and religion, and the contrasting degrees of development between rural and urban society and according to geographical location. In both cases – whether examining Scotland's position in the Union or different experiences in Scotland – the historical literature has engaged with and, to some extent, under-mined the notion that Scotland can be viewed as a homogeneous economic, social and political 'region'. Examples of three different kinds of historical writing commonly illustrate this trend: Clive Lee's 1995 study of the twentieth-century Scottish economy, which places substantial emphasis on the regional as well as sectoral pattern of difference and development; Tom Devine and Richard Finlay's edited collection of 1996 on the twentieth century, the diversely themed chapters of which bring out the huge variety of life in modern Scotland; and Ian MacDougall's *Voices from Home and Work*, published in 2000. Gathering evidence from, *inter alia*, coal miners, laundresses,

building workers, forestry workers, railway workers and a journalist, this points to the difficulty of identifying a common experience of work in Scotland's sectorally-segmented economy.[2]

It is within this broad area of inquiry, the heterogeneous economic, social and political character of modern Scotland, that this paper, on Food Regimes in Edwardian Scotland, should be read. Contemporary Scotland has a problem with food. This encompasses concerns about poor nutrition, diet and health, particularly among infants and school-age children and low-income groups, and also involves concerns about the quality and especially the safety of food. These have been amplified by a number of separate food scares, most notably BSE-infected beef and the spread of *E-coli* 0157, which have focused attention on the importance of food safety and the alleged weaknesses of food regulation.[3] The *E-coli* episode in Lanarkshire of 1996 could be seen as a Scottish component of a more general British picture, for throughout the UK in the later 1990s food scares – along with doubts about the health and safety implications of new methods of food manufacturing, such as irradiation or genetically based production – generated demands for new regulatory agencies to serve the views and interests of consumers rather than those of retailers and producers. In 2000 the Food Standards Agency was established with the remit of protecting and consulting consumers, reacting to food scares, promoting research and education on health and nutrition and developing food regulation generally. The FSA was a UK-wide agency, and an FSA for Scotland was located in Aberdeen with a similar role. These new institutions gave a sharper focus to food policy and greater centralisation. But – and herein lies the importance of regional diversity in Scotland as in the UK – the practical enforcement of food laws continued to be the responsibility of local councils through the activities of public health officials, trading standards departments and environmental health officers.[4]

These contemporary debates about food safety and regulatory regimes have important historical precedents. Scotland's food regulations were originally devised in the late nineteenth century in broadly similar terms, with panics about safety and quality leading to the establishment by central government of a national food regime. But this regime was allowed to develop in highly localised institutional, economic and social circumstances. This paper examines the fragmented nature of this food regime in Edwardian Scotland, and in so doing highlights the extent of regionalised or even localised economic, social and political diversity in this period. Generally speaking there were substantial differences of enforcement between urban and rural local

authorities, and between burgh (or town) authorities and the larger city authorities. In rural and burgh authorities, generally speaking, dominant business or commercial interests obstructed a more positive enforcement of the law. Such enforcement was achievable, however, in larger urban areas where business was characterised by greater diversity or dominated by branches of industry or commerce that were not directly affected by the food regime. The discussion proceeds in three broad sections. The first part examines adulteration – the crux of the perceived food problem in the late nineteenth and early twentieth centuries – and the administrative mechanisms designed to remedy it. The second part looks at the highly localised nature of the enforcement of the food regimes, with fragmentation even extending, in the case of Glasgow, to differing degrees of enforcement within a single local authority. The final part analyses the more general problems of enforcing the food regime and adds to the wider significance of the paper by standing as a corrective to the generally – but to an extent unwarranted – positive historiographical picture of the Victorian food laws.

Adulteration and administrative organisation

The 1875–99 Sale of Food and Drugs Acts (SFDA), which formed the basis of food law in the United Kingdom until 1955, were the first attempts at providing food consumers with legislative protection. The key issue in this period was adulteration, defined under the SFDA as the addition of anything which rendered food 'injurious' to health, or which altered – 'to the prejudice of the purchaser' – its 'nature, substance and quality'. The initial public interest in food regulation stemmed from the developing perception, from the 1850s onwards, that dangerous and fraudulent food posed a potentially serious threat to public health and legitimate traders. The landmark 1875 SFDA emerged only after a lengthy period of gestation, involving a mixture of scientific publicity and official investigation and several earlier ineffective attempts at legislation.[5] The 1875 Act sought to establish a compulsory system of inspection and analysis, administered by local authorities, that was intended to check adulteration. The legislation also offered legal protection to manufacturers of 'mixtures', such as mustard or cocoa powder, since ingredients that were identified on the label were accorded legitimacy providing they did not pose any risk to health. The effectiveness of the system established in 1875 was greatly diminished by the refusal of many local authorities to take their new food responsibilities seriously. In England and Wales in 1898–99 there were ten large counties and sixteen large boroughs where the authorities had 'almost entirely failed'

to invoke the law.[6] Consequently, the 1894–96 Parliamentary Select Committee on Food Products Adulteration recommended that the law be transformed from a permissive one to a compulsory measure. The resulting SFDA of 1899 allowed central government to intervene and enforce the regulations wherever local authorities continued to neglect the law. This central direction was assigned to the Local Government Board for England and Wales (LGB) and to the Local Government Board for Scotland (LGBS). Both agencies believed in a system of local enforcement as the appropriate administrative mechanism, but neither exerted great pressure on inactive councils. The LGB's officials were cautious about greater centralisation on principle, believing in the fundamental value of local responsibility. Levitt has argued that the establishment of the LGBS in 1894 symbolised the political elite's greater concern with social welfare as a means to maintain social order.[7] But food policy was a low priority and the LGBS only took a serious interest in food regulation following the passage of the 1899 SFDA. In all areas of its remit, the LGBS relied heavily on local government for the implementation of its policies and the enforcement of regulations and, as in England and Wales, the Edinburgh department had limited powers or inclination to coerce councils. Localism inevitably produced diversity, with financial and organisational limitations on the effectiveness of small councils as regulators.[8] At the other extreme one-third of the Scottish population lived in Aberdeen, Dundee, Edinburgh, and Glasgow by 1911. The political elites of these major cities, as Morris emphasised, were associated by the 1890s with an acceptance of utilising local police powers to improve local water supplies, develop transport and regulate nuisances such as air and water pollution, and a tendency to more active enforcement of the food regime seems to have followed in these urban centres.[9] Broader consumer concerns about the quality and safety of food were evident in the rapid growth of Co-operative societies, particularly in central Scotland, with their emphasis on the provision of pure food.

In Scotland the scale of operations under the SFDA increased considerably from 1899. Even in 1900 one-third of counties and burghs in Scotland had not submitted any samples for analysis, but by 1901 the LGBS noted with satisfaction that the vast majority of local authorities were now meeting their legal obligations to gather samples and submit them for analysis. The new SFDA supplied the threat of government intervention and from the LGBS the medical adviser, Dr James Burn Russell, urged local authorities to enforce food inspection, particularly of meat and milk.[10] In common with the LGB in England and Wales,

Table 1. Level of adulteration of formally purchased food samples in Scotland, 1900–13

Year	Samples	Percentage adulterated
1900	2253	14.4
1901	5493	11.8
1902	6761	11.0
1903	6644	9.0
1904	7396	9.0
1905	7221	9.2
1906	7614	9.8
1907	6842	9.7
1908	6891	10.8
1909	7204	10.5
1910	7238	11.1
1911	7083	9.7
1912	6675	10.8
1913	6642	9.9

Note: The data for 1900 and 1901 are based on the first nine months of each year only.
Source: Figures compiled from the published annual reports of the Local Government Board for Scotland, 1900–1914.

the LGBS believed that an increasing level of sampling would lead to a decreasing level of adulteration, and pressed local authorities to increase periodically their sampling until the proportion of adulterated samples fell significantly. The figures in Table 1, compiled by the LGBS from the quarterly reports of public analysts, indicate the progress made in enforcing the law after 1899, and suggest some proof for the believed relationship between increasing sampling and decreasing adulteration. There was not, however, a sustained fall and, as a result, the LGBS's annual reports regularly advocated more consistent activity.

The most commonly sampled commodity was milk, which – as Table 2 indicates – was more commonly found to be adulterated than other items. Indeed, the principal reduction in adulteration in this period was among non-milk items, and the preponderance of milk sampling arguably lent an artificial inflation to the aggregate level of adulteration. There are two main explanations for milk's special place within the adulteration figures. First, it was a very simple product to adulterate, requiring nothing more complicated than the addition of water or skimmed milk. In his work on English milk, P. J. Atkins has shown that the commercial incentive to adulterate was increasing in the

Table 2. Percentage adulterated for formally purchased milk and non-milk food samples in Scotland, 1900–13

Year	Non-milk samples	Milk samples
1900	12.8	15.8
1901	9.8	18.3
1902	6.9	16.2
1903	6.0	13.1
1904	6.0	12.8
1905	6.6	12.3
1906	6.5	13.4
1907	6.3	13.0
1908	7.2	14.3
1909	6.4	14.2
1910	5.8	15.5
1911	6.9	14.0
1912	6.5	13.9
1913	4.9	13.6

Note: The data for 1900 and 1901 are based on the first nine months of each year only.
Source: Figures compiled from the published annual reports of the Local Government Board for Scotland, 1900–1914.

late nineteenth century, as supply struggled to keep pace with demand.[11] Second, the offence of milk adulteration was relatively easy to detect and punish as minimum official standards for milk were in place from 1901. These were based on evidence submitted by dairy trade analysts and representatives to the 1894–96 House of Commons Select Committee on Adulteration, and stipulated that milk should comprise at least 3% fat solids and 8.5% of non-fat solids.[12] The standards, issued by the Board of Agriculture for England and Wales and applied in Scotland, were admitted to be modest. Thomas Nasmyth, Medical Officer of Health for Fife and Clackmannan, reflected on the Board of Agriculture's concession in 1901 that the standards were 'necessarily fixed at figures lower than those which are usually afforded by genuine milk'.[13] Nonetheless they reinforced local efforts to improve the safety of milk, eased the sampling and analysis of milk and the prosecution of dishonest milk traders.[14] It is clear that local authorities targeted the fraudulent sale of milk. Thomas Nasmyth noted that, 'In unambiguous language', any milk not meeting the standard was 'skimmed or watered'.[15] Table 2 indicates that there was an immediate rise in the level of milk adulteration in 1901 and 1902 and then a reduction, presumably as producers and traders adjusted to the new regime,

although the slight rise after 1905 implies that there was no sustained improvement in milk quality.

The uneven quality of milk in the 1900s may also have reflected the manner in which the apparent clarity of the 1901 regulations was subverted in regulatory practice. Courts did usually find against defendants, but there was the possibility of an 'appeal to the cow'. This defence rested on proving that the poor quality milk had come directly from the cow rather than being a result of any adulteration. A further sample would be drawn from the beast in the presence of local authority officials and if this also failed to meet the standard then the conviction was quashed on the grounds that no adulteration had taken place. In 1910 Edinburgh's health officials challenged this convention, arguing that genuine milk had to have at least 3% fat and anything containing less, even if unadulterated, was an inferior product.[16] However, the court upheld the 'appeal to the cow', sanctioning a natural, even if deficient, product. One rare reversal of this pattern was witnessed in Aberdeen in 1905 when a dairyman was convicted of selling milk that contained just 2.32% fat. Although the appeal samples contained more than 3% fat, the charge was declared unproven, the judge being persuaded by testimony from the dairyman's family that the original samples had not in fact been adulterated.[17]

The localised character of enforcement

Although local enforcement was central to the food safety regime, its operations have received little attention from historians. The standard pattern was for the health authority to appoint inspectors under the direction of either the local Sanitary Inspector, as in Glasgow, or the Medical Officer of Health, notably Henry Littlejohn in Edinburgh and Matthew Hay in Aberdeen. Medical Officers of Health enjoyed higher social and professional status. Food inspection, including unwholesome food, was part of a wider local inspectorate with larger staffs usually assigned to deal with housing conditions, pollution, workshop conditions and shop hours. The inspectors took formal and informal samples that were tested by the public analyst. The food laws also allowed private citizens to submit foods for analysis, subject to the payment of a fee. Such private sampling, almost entirely of milk, was significant only in Dundee between 1900 and 1913. In the vast majority of cases the non-privately sampled items, health committees, advised by the Sanitary Inspector or Medical Officer of Health, of initiated any prosecutions in consultation with the Procurator Fiscal.

With over 200 separate authorities, enforcement practices were

Table 3. Public analysts in Scotland by number of local authority appointments, 1904

G. D. Macdougald, Dundee	60
John Falconer King, Edinburgh	24
John Hunter, Edinburgh	22
James Hendrick, Aberdeen	21
J. W. & W. L. Biggart, Greenock	20
James Davidson, Dumfries	20
Tatlock and Thomson, Glasgow	12
John Clark, Glasgow	11
Stevenson, Macadam, Edinburgh	11
Andrew Wilson, Stirling	6
Thomas Jamieson, Aberdeen	4
Martin Dechan, Hawick	3
J. Watson Robertson, Glasgow	3
R. R. Tatlock, Glasgow	3
G. H. Gemmell, Edinburgh	2
McCowan & Biggart, Greenock	2
D. R. Drinkwater, Edinburgh	1
F. W. Harris, Glasgow	1
Total	226

Source: Official Publications, Cd 2514, 1905, Tenth Annual Report of the Local Government Board for Scotland, 1904, pp. 605–9.

potentially highly variable. This tendency was to some extent offset by the central direction supplied by the LGBS and the unifying influence of precedent and case law. There was a further degree of cohesion through the activities of the public analysts who were responsible for determining the composition of food samples and declaring, by completing a written certificate or report, and, if required, testifying in courts, whether a particular item was adulterated. Analysts were also guided by their professional training, and the publication of descriptions and tests of food composition, notably in *The Analyst*, *Scottish Analyst* and in standard guides to the food laws by leading practitioners. In practical terms, fragmentation was further reduced by the practice of smaller authorities combining their SFDA activities and by the tendency for public analysts to hold appointments with several authorities, a practice that testified to the limited quantity of testing performed in many places. Table 3 shows the distribution of appointments among the nineteen analyst's practices in Scotland in 1904. The number of appointments does not always indicate size or importance. In Glasgow the volume of

analytical work was sufficient to be divided among three firms, namely F. W. Harris, R. R. Tatlock and John Clark. Generally the analysts represented regional groupings of authorities. G. D. Macdougald's business was centred in Fife, Dundee and Perthshire; Hendrick held appointments across Aberdeenshire; James Davidson's work was in southwest Scotland and John Hunter – in a notable triumph of the Edwardian postal service – chiefly served both the Lothians and Caithness.

The main impact of the increasing sampling after 1899 was among the Scottish burghs. In 1900 these market towns were usually less active in sampling than their neighbouring county authorities. Some burghs reportedly relied on County Councils to undertake their SFDA work.[18] The evidence of inactivity to 1913 probably reflected the influence in local politics of grocers and other retailers combined with reluctance to disrupt the town's marketing role. By 1913, however, burgh authorities were generally more active than the counties, indicating that the 1899 Act and LGBS pressure had overcome local inertia. The four largest cities were more vigilant than either rural or burghal authorities in pursuing milk offenders. The traditions and institutions of activism had been developed in the late nineteenth century, generally through the activities of public health professionals given scope to operate by liberal political elites committed to improved hygiene as an integral element in the construction of civic pride. After 1900, for instance, the Aberdeen City Council directed a concerted attack on milk adulteration, as the figures in Table 4 illustrate.

These figures imply deterioration in general food quality after 1908, though some part of this trend was a result of more effective enforcement. At the request of the Sanitary Inspector, Kenneth Cameron, councillors successfully pressed the local sheriff to increase fines, especially for repeat offenders. The usual penalty in other parts of Scotland was a fine not usually exceeding £2. As a result of Cameron's intervention, a dairyman convicted for the third time in Aberdeen in 1910 was fined £12. Committing the same offence once more in 1912, he was fined £25. Cameron based his call for increased penalties on a calculation in 1909 that milk adulteration had cost the city's consumers more than £4000, assuming an average abstraction of 20% of the fat of the 3.5 million gallons sold over the course of the year.

Aberdeen City Council's consumer-protectionist activism can usefully be contrasted with the different priorities pursued by the surrounding County Council, which was less interested in regulating the activities of milk producers, and in fact tended to regard producers rather than

Table 4. Sampling and adulteration of food and milk in Aberdeen, 1900–13

Year	All samples	Adulterated (%)	Milk samples	Adulterated (%)
1900	206	1.5	39	0.3
1901	208	2.9	35	5.7
1902	297	3.0	46	4.3
1903	206	5.8	27	22.2
1904	186	1.6	61	4.9
1905	148	2.0	34	8.8
1906	173	1.8	50	4.0
1907	189	1.6	45	2.2
1908	212	7.1	81	14.9
1909	253	8.7	126	15.1
1910	255	7.1	114	14.0
1911	236	9.3	156	13.5
1912	243	15.2	137	20.9
1913	272	5.9	97	11.3

Source: Aberdeen City Archives, City of Aberdeen, *Sanitary Inspector's Annual Reports,* 1900–13.

consumers as the victims of adulteration. The main problem across the County, Aberdeenshire's analyst observed in 1907, was rancid butter, supplied by a handful of careless producers. 'It is butter of this kind,' he noted, 'which injures the reputation of the whole district, and depreciates the value of all local butter in the market.'[19] None of these rancid supplies were actually fraudulent under the terms of the Sale of Butter Regulations, introduced in 1902. Like the milk standards, these related to quality rather than safety, fixing an upper limit of 16% water content.[20] Aberdeenshire County Council gathered a far smaller proportion of milk samples than its city neighbour, focusing instead on testing the purity of butter, cheese, spirits and drugs. While using its powers to defend the quality and hence the market value of locally-produced butter, the County Council was less keen on protecting the health of consumers than its City neighbour. The comparative figures for 1911 indicate that 61 of the County's 250 samples, about 25%, were milk compared to 156 of the City's 250 samples, or some 66%. The County could not justify this shortfall in milk sampling on the grounds that milk adulteration was less serious in the country. Indeed the level of milk adulteration was slightly higher in the country – 14.8% compared to 13.5% in the city. It seems reasonable to conclude that the County was simply more reluctant than the City to regulate the activities of

the locally influential dairy trade. The general contrast between county and city was not complete since elsewhere the Ayrshire, Edinburgh and Dumbartonshire county authorities were all active in testing milk. Yet the Aberdeenshire example does conform to at least one generally observable trend, namely the tendency for different balances of producer and consumer interests to result in locally differentiated approaches to food sampling. The sense of competing interests was evident when Glasgow's long-serving Sanitary Inspector, Peter Fyfe, recommended that the council oppose the Government's proposals to limit the proportion of butter allowed in margarine. It was thought that inflating the quantity of butter in a margarine would increase its attraction and so undercut demand for pure butter. But, according to Fyfe, existing enforcement powers were sufficient and the proposal was designed solely to 'bolster up the agricultural interest' and, as such, was counter to the 'general public interest'.[21]

Fyfe's consumer-protectionist ambitions in this area reflected Glasgow's general reputation and record as an interventionist authority in relation to public services, including health matters, in the late nineteenth century. Hart identified a combination of middle-class progressives seeking enhanced public utilities with minimal increases in rates and 'bureaucratic' professionals promoting health reforms.[22] Such local activism, combined with civic pride, was a means to mobilise reform, though its force fluctuated according to the state of the economy and the shifting political landscape, and was questioned in the later Edwardian period with the economic downturn from 1908 and doubts about Liberalism's capacity to satisfy the competing interests of middle and working class supporters.[23] Grocers had a presence in local politics, but were far less influential than in the Scottish burghs given the greater size and diversity of Glasgow's middle-class and the political influence, albeit diminishing, of industrial elites. The city's arrangements for food inspection developed significantly in the 1870s with the appointment of key public health professionals and the initiation of regular sampling.[24] This trend was promoted by the early Sale of Food and Drugs Act, but also by a local food scare concerning the adulteration of whisky.[25] James Burn Russell, the city's dynamic Medical Officer of Health from 1872 to 1898, pursued inspections of milk, including supplies from farms outwith the city. Glasgow City Council acquired additional powers to prevent the sale of infected milk and meat via local acts in 1889 and 1890. Local pride and interests could promote resistance to direction from central government or a preference to deal directly with Westminster rather than the LGBS. Glasgow city council, for instance,

directly lobbied the 1894–96 Parliamentary Select Committee on Food Products Adulteration, though had to settle for submitting a petition after its requests to send witnesses were refused.[26] National and local elements intersected with Russell's appointment to the LGBS in 1898, when his departure left the corporation's Sanitary Inspector, Peter Fyfe, as the leading influence, via a sub-committee of the health committee, in the local enforcement of food regulations in Edwardian Glasgow. Fyfe was appointed as Chief Sanitary Inspector in 1885, serving until 1919 and being active in the formation of the Sanitary Inspectors' Association of Scotland.[27] Internal professional rivalries arose over the implementation of new meat inspection laws when the 1907 Public Health Act placed inspectors of imported foods under the direction of Medical Officers of Health. Both Fyfe and the city's Veterinary Officer criticised their exclusion, arguing that the scheme unnecessarily divided the food inspection system. This local contest for authority was resolved through a compromise in which imported meats were inspected by officials from the Sanitary Department and veterinary officials under the direction of the Medical Officer of Health.[28]

In the early 1900s the corporation employed four food inspectors and one inspector of fish among a total local inspectorate of fifty-six. Its resources and prestige were symbolised by the opening of the new Sanitary Chambers in 1897. The main targets of food inspection were byres, restaurants, butchers' shops, and premises selling milk and ice cream.[29] The Sanitary Department's annual reports provide some insight into the system of enforcement. During 1903 Glasgow's food inspectors took 601 samples under the SFDA plus a further 171 informal samples and 17 samples for bacteriological examination.[30] Of the 601 formal tests, the analysts certified 501 as genuine, so that the proportion of adulterated samples was 17%. In line with the general pattern, the most sampled products were milk and butter and the rate of adulteration for milk was 35% compared to only 10% for non-milk samples. Their activities were subject to external scrutiny and lobbying. In 1903 the Board of Agriculture in London noted that Glasgow's milk sampling was below the level of other large cities, but after discussions Fyfe and the Health committee decided to continue their existing practices.[31] They similarly resisted calls for closer attention to the mixing of margarine with butter from the Butter Trade Association, which sent two representatives to sample butter in the city in 1904.[32] This was consistent with Fyfe's earlier opposition – in 1898 – to new laws that would privilege the interests of butter producers by limiting the amount of butter that could be incorporated in margarine. Two years later,

however, Fyfe reported substantial adulteration of butter. He subsequently associated adulteration of butter with 'shops designated variously as 'The Irish Mart', 'The Irish Produce Stores', and 'The Irish Ham, Butter and Egg Store'.[33] The corporation, prompted by Fyfe and its Public Analysts, supported other extensions of the food laws, including broadening the SFDA to include food standards. This contrasted with the situation in Aberdeenshire in the 1890s and early 1900s where the Public Analyst, James Hendrick, consistently supported the introduction of national food standards. Councillors rejected this advice, concluding that prosecution in every case should be left to the discretion of the Procurator-Fiscal. Councillors also chose not to heed Hendrick's calls for a central scientific committee to set standards. The question of compositional standards was raised again several years later, when Hendrick reported on two samples of a sweet, sold as 'black sugar' but generally believed to be liquorice. Neither sample contained much more than a trace of liquorice, but, as the sweet was not sold strictly as liquorice, it was not possible to obtain a conviction. The chair of Aberdeenshire's Public Health Committee, Councillor J. Watt of Rathen and Deer, hit upon an unusual solution to the problem. In order to avoid future uncertainties the committee would simply desist from sampling any items for which there existed no generally recognised standard of quality or composition. Watt's colleagues agreed this course of action. In Glasgow prosecutions over the quality of jam were abandoned as courts decided that, in the absence of any official standards, any product conventionally accepted as jam was legitimate whatever its precise composition.

The Glasgow Sanitary Department's Annual Report provides some insight into the geographical distribution of sampling between the city's twenty-five wards.[34] Table 5 lists each ward in terms of their share of the city's population at the 1900 Census along with their share of all sampling and of all cases of adulteration in 1903. The distribution of sampling by ward corresponded loosely to population size, but the striking exception was the Exchange ward, which accounted for 6% of samples and 12% of case of adulteration. Inspections were apparently focused on the wholesalers in this area and thereafter on the retailers around the centre of the city, a pattern evident in the 1870s. The implication is that inspectors operated strategically, seeking to detect and deter adulteration by key distributors rather than scattering their efforts evenly across the city. So – an important point to emphasise – if there were clear differences between urban and rural food regimes, there was also extreme localism within this single city, with targeting of sampling

Table 5. Distribution of population and adulteration by ward in Glasgow, 1903

Ward		Population	% Population	% Sampling	% Adulterations
1	Dalmarnock	50859	6.7	3.7	2
2	Calton	38960	5.1	4.8	7
3	Mile-end	43169	5.7	4.2	7
4	Whitevale	33778	4.4	4	2
5	Dennistoun	32509	4.3	3.7	5
6	Springburn	41360	5.4	2.8	3
7	Cowlairs	29781	3.9	3.2	3
8	Townhead	39898	5.2	6.5	3
9	Blackfriars	23087	3	4.5	6
10	Exchange	2232	0.3	6	12
11	Blythswood	3596	0.5	0.2	0
12	Broomielaw	8337	1.1	2.7	0
13	Anderston	29452	3.9	5	3
14	Sandyford	26488	3.5	3.3	4
15	Park	24953	3.3	3.7	6
16	Cowcaddens	39960	5.2	6.7	10
17	Woodside	45653	6	5.5	3
18	Hutchesontown	41974	5.5	5.2	5
19	Gorbals	36537	4.8	3.7	5
20	Kingston	34762	4.6	5.5	5
21	Govanhill	33787	4.4	6	6
22	Langside	29625	3.9	3.7	3
23	Pollokshields	16984	2.2	1.7	0
24	Kelvinside	18854	2.5	1	0
25	Maryhill	36384	4.8	3.2	0
		762979	100.2	100.5	100

Sources
Population: Glasgow City Archives, Annual Report of the Operations of the Sanitary Department of the City of Glasgow, 1903, pp. 34–5.
Adulteration: Glasgow City Archives, Annual Report of the Operations of the Sanitary Department of the City of Glasgow, 1903, pp. 30–1.

based on assumed differences between wards in the extent of adulteration. The pattern probably reflected the distribution of the city's food shops, since it was also evident in ward-level reporting of the detection of unwholesome meat and resembled the concentration of restaurants in the city. Sampling and inspections tended to be lower in relation to population share in the outlying suburbs, such as Pollokshields and Kelvinside. The use of ward level data blurs social distinctions to some

Table 6. Glasgow wards ranked by death-rate and by adulteration rate

Ward		Average death rate, 1903–20	Adulteration rate, 1903
1	Dalmarnock	12	10
2	Calton	9	16
3	Mile-end	1	2
4	Whitevale	16	3
5	Dennistoun	2	15
6	Springburn	18	21
7	Cowlairs	3	9
8	Townhead	20	5
9	Blackfriars	4	18
10	Exchange	8	19
11	Blythswood	13	20
12	Broomielaw	19	14
13	Anderston	10	6
14	Sandyford	17	7
15	Park	6	8
16	Cowcaddens	15	13
17	Woodside	14	17
18	Hutchesontown	7	22
19	Gorbals	21	1
20	Kingston	25	4
21	Govanhill	11	11
22	Langside	5	12
23	Pollokshields	23	23
24	Kelvinside	24	24
25	Maryhill	22	25

Sources: death rates: A. K. Chalmers, *The Health of Glasgow, 1818–1925: An Outline* (Glasgow, 1930), p. 76; adulteration rates: as Table 5.

degree, but Table 6 ranks wards by death-rate and shares of detected adulteration. Higher rates of adulteration do correlate with above-average death rates, implying that adulteration was most commonly detected in low-income districts. Again the Exchange ward is an outlier with its small resident population and clustering of wholesale and retail outlets. Dennistoun and Govanhill rank significantly higher in their share of adulterations than death rates, but both were heterogeneous communities with sizeable lower-income districts. Although food inspections apparently promoted improved quality in working-class diets, Glasgow's emerging Labour politicians were antagonistic towards Fyfe's Sanitary Department. This reflected its roles in housing and

medical services where inspectors could be an intrusive and powerful presence in working-class families, though food inspection may also have annoyed marginal shopkeepers in low income areas.

Problems in enforcing the food regime

Across the different kinds of locality there were significant problems associated with attempts to enforce the food regime. Milk, as the first part of this paper emphasised, occupied a position of particular importance in debates about adulteration, which was reflected in the introduction of the 1901 regulations on minimum standards. These made the detection and punishment of adulteration more straightforward but did nothing to prescribe defined levels of cleanliness. Indeed in 1903 the LGBS resisted pressure from the Association of County Councils in Scotland to undertake bacteriological analysis of ice cream under the SFDA. The Board argued that the SFDA was intended to test whether products were genuine and not whether foods were 'wholesome'.[35] Any health concerns were, according to the LGBS, to be addressed under the terms of the Public Health (Scotland) Act of 1897. Nor did they alleviate or even highlight the danger of milk infected with bovine tuberculosis. Local authorities were, however, keen to target milk because of its special position in the diet, especially of infants, and its particular qualities as a vehicle for transmitting infectious diseases. According to Nasmyth, vendors of adulterated milk were 'perpetrating a gross injustice on the poor, infants, children and invalids, who may have to struggle for their lives while being fed the sophisticated commodity'.[36] In Edinburgh food inspectors and the Medical Officer of Health were concerned to trace adulteration along production and distribution systems in order to identify the major perpetrators.[37] Their standard practice was to sample milk at one of the many dairy shops around the city centre, mainly small shops run by women. Where milk was found to be below the standard, the retailer was confronted. If, as frequently happened, the retailer claimed that the milk was sold as received from a supplier, the trader was persuaded to make a formal complaint of dissatisfaction with the quality of their milk. This took the form of a request for officials to 'safeguard myself and my customers' by taking a second sample when the supplier made their next delivery.[38] Often the chain led back to a dairy or farm where inspectors offered to inspect the herd and take further samples, but these producers might refuse access. In one case an inspector noted that the dairyman gave the 'usual excuse that milk had been purchased from other dairy keepers'.[39]

The Edinburgh case brings out the problems inherent in policing

milk quality, and reinforces the importance of the higher degree of adulteration of milk relative to other products. The comparatively low level of adulteration for items other than milk, highlighted in Table 2, would seem to indicate that the 1899 amendment to the SFDA, compelling local authorities to enforce the law, had a highly positive impact in terms of improving food quality and safety. Confidence in the validity of these figures as a true test of safety and quality has to be balanced, however, by two central problems that were becoming apparent to the regulatory authorities after 1900. One of these was the method by which samples of food and drink were obtained; the other was the fact that the nature of adulteration was altering as methods and ingredients of manufacturing were changing. The Aberdeenshire public analyst identified the central weakness of food sampling in 1900, advising councillors that it was extremely difficult to 'secure adulterated specimens' of coffee 'if the inspector is recognised as such'.[40] In other words officials could only monitor the quality of food that retailers knowingly sold for analysis. This was recognised as a potential difficulty in 1905 by the LGBS, which used its subsequent annual reports to encourage the practice of 'informal' sampling. Officials would gather samples anonymously either personally or through paid agents or deputies, often women and sometimes children, in order to monitor the behaviour of suspected traders and to target future formal sampling and legal proceedings. Table 7 indicates a substantial discrepancy between adulteration of formal and these 'informal' samples in Edwardian Scotland.

This discrepancy partly arose from inspectors targeting informal sampling among traders suspected of fraudulent trade and perhaps from the Edinburgh strategy of tracing a single adulteration back along the distribution chain. But in assessing the 'true' level of adulteration it is worth reiterating that informal sampling only arose because traders were suspected of supplying officials with different items from those that regular customers received. So the actual scale of adulteration was probably below the informal figure, but above the formal figure. The gap also suggests an additional, though speculative, explanation for the high level of milk adulteration. Presumably traders who sold adulterated milk had not diluted it themselves, because they made no attempt to regulate sampling, selling it to officials as they received it so this adulteration was presumably committed chiefly by wholesalers or farmers. The dishonest grocer and provision merchant concentrated on items like butter and coffee that came into their premises unmixed. These would be mixed with substitutes like margarine or chicory and sold to ordinary customers with small amounts of the original com-

Table 7. Adulteration of formal and informal samples in Scotland, 1904–13 (%)

	1904	**1908**	**1913**
Formal	9.0	10.8	9.9
Informal	20.3	21.0	18.9

Source: Figures compiled from the published annual reports of the Local Government Board for Scotland, 1904–13.

modities retained unmixed and sold to inspectors. Manipulation of the sampling process in this manner by dishonest grocers would widen the gap between milk and non-milk adulteration.

Alive to the possible weaknesses in sampling procedures, in 1909 the LGBS attempted to establish the broader impact of the law since 1899 by asking local authorities to report on its general effectiveness. Numerous sampling officers reported as fact that their familiarity as local figures prevented them from gathering samples of the same items that were sold to ordinary customers. This was especially the case in rural or smaller urban areas, like Bridge of Allan or St Andrews, where the sampling officer believed that news of his presence and purpose was spread around town by telephone conversations between shopkeepers. Small towns also worked against the use of deputies or agents, a practice recommended by both the LGBS and the Association of Public Analysts in Scotland, which emphasised that women of 'business ability' were especially likely to outwit the 'dishonest trader'.[41] The idea was that a deputy would call at the targeted premises and request the chosen commodity. As this was being served, the inspector would enter and complete the purchase and conduct the necessary legal formalities. The Bridge of Allan officer had tried using local deputies, but found it impossible to preserve their anonymity in his small locality. So the practice had greater success in larger urban environments, especially in west-central Scotland, where officials had been regularly using agents since the early 1900s. Reporting on the findings of its 1909 survey, the LGBS was particularly keen to endorse the systematic approach of the County of Lanark's man in Coatbridge. He used three types of agent or deputy: a 'working man of the labouring class, roughly and carelessly dressed' to purchase samples of whisky and butter; a woman 'attired in rough clothing' to buy butter; and boys under fourteen years of age or girls under sixteen to obtain milk and butter. The official paid these agents 5*s* for each service rendered and a further 10*s* 6*d* per day for attending court hearings. His colleagues in Motherwell, who would enter the shop

before the agent and purchase what amounted to a decoy sample, adopted a variant of this approach. While this sale was being transacted the agent, a young boy or girl, would come in and purchase the real item targeted by the visit. In 1911 Glasgow's Sanitary Department reported its engagement in a 'contest of wits' involving 'various deputies, disguises and other forms of strategy' with a few unscrupulous retailers over margarine and butter sales.[42]

Lanarkshire's rogue traders were not all taken in by this new practice, however. One grocer's wife confirmed her suspicion that an unfamiliar customer was an agent by coming out on to the street. Seeing the inspector waiting on the threshold, she re-entered the shop and warned her husband who, when asked by the agent for butter, replied that he had none in stock.[43] While dishonest or obstructive grocers were difficult to entrap, it was even harder to confound travelling vendors suspected of fraudulent activity. Lanarkshire officials found it difficult, for example, to entrap itinerant butter salesmen who were suspected of supplying a mixture of butter and margarine. When approached by officials, the traders either said that their stock was finished or supplied them from a small amount of genuine butter that was carried in case of inspection. Recognising that only regular purchasers were receiving the fraudulent article, these enterprising officials concealed themselves in such consumers' homes. When a doorstep sale took place the inspector would suddenly appear to complete a formal purchase, which could be used as evidence in proceedings. The plan did not always succeed, however, for few regular customers, reluctant to appear in court, were willing to co-operate.[44]

The case of the vigilant Lanarkshire grocer's wife pointed to another issue raised by the 1909 survey, namely the need for officials to inject variety into all aspects of their sampling practices. The LGBS report commented on the value of rotating agents in order to protect their anonymity. It also suggested varying the means by which milk was purchased: an official's jug or can, regularly used even by a range of agents, could be easily recognised by sharp-eyed and unscrupulous retailers. More generally the LGBS was concerned that local authorities gathered samples from a narrow and unchanging range of commodities, and visited shops on the same day each month, allowing traders to operate from day to day without the threat of inspection. As a result the LGBS periodically sent 'reminders' to some local authorities of their legal obligations under the SFDA, which included the need to analyse a wide range as well as simply a minimum overall number of samples. In 1906 the LGBS found that numerous authorities were not even

sampling the two most commonly adulterated items, milk and butter.[45] The LGBS also questioned the suitability of police officers for the purpose of collecting samples. Monotony of approach was partly the difficulty here, but familiarity with retailers was also problematic, with police constables even more visible in the community than civilian sampling officers. The police conducted sampling in many rural areas, including Aberdeenshire, where a uniformed police inspector visited retailers' premises and gathered samples with a uniformed police constable as witness. The LGBS pressed the Council to adopt an approach that would 'disarm suspicion' among potentially dishonest grocers, including the use of civilian deputies. But, having consulted police officers throughout the county, the Chief Sampling Officer informed the Council that the public was already fully protected. Informal sampling was also ruled out in Aberdeenshire, on the untested assumption that covertly gathered items would simply be no different from those that were generally supplied.[46] This blankly contradicted the evidence contained in the LGBS statistics, indicating a higher level of adulteration among informal than formal samples.

While revealing weaknesses in the mechanism for identifying offenders, the LGBS survey in 1909 also highlighted widespread official dissatisfaction with the methods of punishment. Only one local authority, Banffshire, recorded the view that the system of fines in place represented an effective deterrent. The Motherwell sampling officer noted that 'public exposure (was) dreaded more than fines', a perspective confirmed from all quarters, including Aberdeen, Alloa, Arbroath, Burntisland, Govan, Glasgow, Inverness, Perth and Dundee, where the low level of fines was reported as actively encouraging adulteration and holding 'no fear for the nefarious trader'. Only in isolated instances did imposed penalties match the levels permitted under the law, a maximum fine of £50 for a first offence in selling adulterated items, and six months hard labour for second and subsequent offences. In 1908 in Lanarkshire a grocer was convicted for the third time for the same offence, selling margarine as butter. Having previously paid a total of £62 12*s* in fines, he was presumably fortunate to escape with a punishment of just fourteen days in prison. Similarly, in cases of obstruction of the law, offenders could expect reasonably lenient treatment. The maximum penalty here was a £50 fine for the first offence penalty (or three months imprisonment, with or without hard labour) and a £100 fine for a second offence. In Aberdeen in 1900 officials were able to secure the conviction of a shopkeeper who had sold a sample of barley to the sanitary inspector. When told it was being taken for analysis he caught

hold of the item and refused to relinquish it for sale. For this clear infringement he was fined just £3.

The various weaknesses inherent in the process of sampling, together with the relatively high level of adulteration among informal samples, suggest that the 1875 and 1899 Sale of Food and Drugs Act were only partially effective. The continuing practice of adulteration as a commercial ploy by a significant minority of grocers also indicates that the legislation was more controversial than historians have usually suggested. The contested nature of the law was emphasised by the Association of Public Analysts in Scotland, the professional body of officials responsible for monitoring food quality and levels of adulteration. In April 1912 the Association's Honorary Secretary, John William Biggart, who was also Public Analyst for Greenock, submitted a lengthy memorandum to the LGBS outlining the difficulties under which many of his members operated. He reminded the government that many local authorities had been reluctant to enforce the law and had only done so as a result of the 1899 amendment forcing them to take samples. The chief explanation, in Biggart's view, was the business bias of local government. Bluntly expressed, 'the work of the Public Analyst constitutes a surveillance over business in which some members of Local Authorities are engaged'. Hence 'the more fearlessly and conscientiously' the analyst performed his duties, 'the greater is his liability to improper treatment' at the hands of grocer-councillors. Biggart recognised that Parliament had anticipated this problem in 1875, and placed the question of approving the appointment and removal of analysts in the hands of central government. But local authorities had developed subtler means of controlling their analysts. Where a council wished to remove an analyst it could simply increase his workload or reduce his fees to the point where he could no longer operate.[47]

The pressures weighing on public analysts and other local officials were summarised in a special 'Food Number' of *The Times*, published in June 1914, and linked with a wider debate, that had been running since the early 1900s, about the desirability of changes to the legal framework. According to *The Times*, the 'energetic inspector' could easily cross 'strong vested interests' – the butcher or baker who sat on the council – in the conduct of his duties under the food laws. These duties could be simplified, and the pressures on officials duly eased, if 'adulteration of each particular article of food and drink' was 'specifically defined and its composition determined'. This mechanical process would remove from the analyst the difficult job of determining whether a sample was actually adulterated: he would simply be required to measure whether

the sample met the required qualities. An expert Court of Reference, appointed by the Local Government Board, would determine the standards and definitions.[48]

These various difficulties in enforcing the law, including the extent of entrenched, although localised, business subversion of its provisions, have generally been overlooked by historians of food and food adulteration. Standard historical interpretations of food adulteration have generally been positive. The most thorough study, by John Burnett, argues that the Victorian food laws forced producers to improve quality, so that by the beginning of the twentieth century food no longer posed a significant threat to public health.[49] The nature of adulteration had certainly changed by the 1900s, taking more subtle forms perhaps and posing less immediate danger to public health. This reflected the increasingly complex and developed nature of food processing. The purchasers of 'black sugar' in Aberdeenshire, who erroneously believed they were buying liquorice, were not being poisoned, but they were certainly being misled. Aberdeenshire's blank refusal to tackle the problem arguably symbolises the wider reluctance of councils, particularly in rural and smaller urban environments, to pursue effective forms of consumer protection that would have challenged the right of business to operate with a minimum of regulatory restraints. The 1899 SFDA, combined with the encouragement from the LGBS, did produce increasing sampling, especially in market towns. These regulatory pressures were less effective in rural counties, where enforcement remained a low priority. In the four large cities food safety regimes, driven by health professionals, were more fully developed. In Glasgow, scene of perhaps the most developed form, local enforcement displayed considerable self-confidence in resisting external pressures from the LGBS or commercial interests and in campaigning for national food standards. Even so there were bureaucratic rivalries among the different professions. The immediate falls in adulteration rates between 1900 and 1903 indicate that the 1899 Act and the 1901 Milk Regulations had an effect, but thereafter the stability of adulteration rates to 1913 suggests limits to the impact of the legislation and its enforcement. Aberdeen's concerted campaign against milk adulteration between 1908 and 1912 demonstrated the persistence of the practice. The partial nature of the law's enforcement in Scotland before 1914, including the difficulties facing analysts and other officials who attempted to challenge local trader-councillors, suggests that the broad tendency of Scottish local government was towards protecting commercial rather than public health or consumer interests. The continuing use of adul-

teration as a commercial ploy – traders deliberately defrauding the public to maximise their own profits – operates as a further corrective to the view that the food laws were effective and non-controversial.

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