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c.1560-c.1700 With Reference to Several Smaller
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**Environmental Regulation in
Edinburgh and York, c.1560-c.1700**

*With Reference to Several Smaller
Scottish Burghs and Northern English
Towns*

Leona Jayne Skelton

Submitted for PhD

History Department, Durham University

September 2012

Abstract

This thesis challenges the deeply entrenched stereotypical image which depicts early modern urban dwellers throwing rubbish and effluent directly out of their windows and doors into the streets below almost as if this was a normal and widely permissible waste disposal practice. This ‘chamber pot in the window’ myth has become almost synonymous with the early modern period itself in the current, popular, historical imagination, especially in relation to urban settlements. But the majority of urban inhabitants and their local governors alike valued clean outdoor public spaces. They had a vested interest in keeping the areas in which they lived and worked clean and they invested substantial time and energy into upholding their collective standards of acceptable cleanliness in the neighbourhoods, wards, towns and cities of which they were so proud. The small minority of householders who flouted sanitation bylaws by disposing of their waste problematically and by creating insanitary nuisances in public spaces encountered substantial resistance from their neighbours. Contemporaries were not afraid to approach the courts to complain about less fastidious neighbours, whose inadequate waste disposal arrangements and noxious trades threatened to undermine their daily life quality. While the contents of chamber pots were thrown from some early modern urban windows, this was by no means a normal, common or widespread practice, at least before 1700.

The main task of this thesis is not to establish how clean early modern urban streets actually were, but rather to explore cultural attitudes towards outdoor salubrity and waste, both among local governors and urban inhabitants. The thesis focuses on Edinburgh and York in a comparative framework, shedding light on the complex relationship between how governors organised street cleaning, managed waste disposal and regulated the cleanliness of the outdoor environment, top-down, and how typical urban inhabitants self-regulated their neighbourhoods, bottom-up. The ways in which the respective cities' waste disposal and sanitation systems and processes were undermined, adapted and improved over time, as inner Edinburgh's population swelled while York's remained relatively stagnant, are also analysed.

While focusing on Edinburgh and York, the thesis also discusses the challenge of pre-modern urban waste disposal, in the context of both necessary urban agriculture and rudimentary technology, in a much broader context and with reference to several smaller towns in Scotland and northern England. The relationship between neighbourhood, urban and national politics is a recurring theme in the thesis and the relevant sub-topics of the urban-rural manure trade and Sir John Harrington's water closet invention of 1596 are also analysed.

The thesis is split into five chapters. The first is an introduction to the topic, to the cities of Edinburgh and York, to the existing historiography, to the modern-day misconceptions surrounding the topic and to the methodology. The second chapter explains the character of the environmental challenge in early modern urban Britain. The third chapter explains the legal, governmental and administrative context of environmental regulation in Edinburgh and York, respectively. The fourth chapter compares the management and provision of street cleaning and waste disposal in Edinburgh and York while the fifth compares how insanitary nuisances were regulated in the two cities. The conclusion relates the two case studies to the

rest of early modern Britain, comparing them to several smaller urban settlements in lowland Scotland and northern England, as well as highlighting just how differently, and sometimes just how similarly, this area of urban government was managed in different urban settlements.

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Conventions and Abbreviations

I have endeavoured to make my transcriptions of the original documents as clear as possible throughout the thesis. In some cases this has meant changing the original spelling to a more modern format, but the words themselves have not been changed. The now obsolete thorn, represented by the letter ‘y’ has been changed to a ‘th’ in all cases and the obsolete yogh has been changed to a ‘y’ in all cases. The interchangeable letters, ‘i’ and ‘y’ and ‘u’ and ‘v’, respectively, have been swapped where appropriate. The superfluous ‘i’ before the ‘s’ in Scots plural words has also been removed in the transcriptions. Dates which fall between 1st January and 25th March before 1600 in Scotland and throughout the chronology of this thesis in England have been written as 04/02/1582/83, for example.

The following abbreviations appear throughout the footnotes:

<i>Abdn. Counc.</i>	Vols. 1-2: J. Stuart, (ed.), <i>Extracts from the Council Register of Aberdeen, 1398-1625</i> (Aberdeen, Spalding Club, 1844-48). Vols. 3-4: J. Stuart, (ed.), <i>Extracts from the Council Register of Aberdeen, 1625-1747</i> (Edinburgh: Scottish Burgh Record Society, 1871-72)
BRO	Berwick-on-Tweed Record Office, Wallace Green, Berwick
CRO	Carlisle Record Office, Carlisle Castle, Carlisle
<i>Dunfermline Recs.</i>	A. Shearer, (ed.), <i>Extracts from the Burgh Records of Dunfermline in the Sixteenth and Seventeenth Centuries</i> (Dunfermline, 1951)
ECA	Edinburgh City Archives, City Chambers, Royal Mile, Edinburgh
<i>Edin. Recs.</i>	Vols. 1-4: J. D. Marwick, (ed.), <i>Extracts from the Records of the Burgh of Edinburgh, 1403-1589</i> (Edinburgh: Scottish Burgh Record Society, 1869-82) Vols. 5-13: M. Wood, R. K. Hannay and H. Armet, (eds.), <i>Extracts from the Records of the Burgh of Edinburgh, 1589-1718</i> (Edinburgh, Scottish Burgh Record Society, 1927-67)
<i>Glasgow Recs.</i>	J. D. Marwick and R. Renwick, (eds.), <i>Extracts from the Records of the Burgh of Glasgow</i> , 6 vols. (Edinburgh: Scottish Burgh Record Society, 1876-1916)
<i>Inverness Recs.</i>	W. Mackay, H. Cameron and G. S. Laing, (eds.), <i>Records of Inverness, 1556-1637</i> , 2 vols. (Aberdeen: New Spalding Club, 1911-24)
<i>Lanark Recs.</i>	R. Renwick, (ed.), <i>Extracts from the Records of the Royal Burgh of Lanark: with Charters and Documents relating to the Burgh, AD 1150-1722</i> (Edinburgh: Scottish Burgh Record Society, 1893)
NYCRO	North Yorkshire County Record Office
P&KA	Perth and Kinross Archives, A K Bell Library, Perth

- RCRBS* J. D. Marwick, (ed.), *Records of the Convention of the Royal Burghs of Scotland with extracts from other records relating to the affairs of the Burghs of Scotland, 1295-1711*, 4 vols. (Edinburgh: Scottish Burgh Record Society, 1876-80)
- RPCS* J. H. Burton and D. Masson, (eds.), 'The Register of the Privy Council of Scotland, 1545-1625', 13 vols. [CD-Rom] Canada, Ontario, 2004, Tanner Ritchie Publishing
- SA* Sheffield Archives, Sheffield
- Stirling Recs.* R. Renwick, (ed.), *Extracts from the Records of the Royal Burgh of Stirling, 1518-1666*, 2 vols. (Edinburgh: Scottish Burgh Record Society, 1887-89)
- TCWAAS* *Transactions of the Cumberland and Westmoreland [sic.] Antiquarian & Archaeological Society*
- YCA* York City Archives, York City Library, York

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Glossary

Scots¹

Backland	A long narrow plot of land, situated behind residential and business properties on a burgh's main streets, upon which livestock could be kept, horses stabled and crops grown. They were similar to English burgage plots.
Band	Bound – livestock in band was securely retained within cruives on backlands rather than roaming through the streets out of band.
Besom	A broom made from a bundle of twigs tied around a central pole.
Burgh	A town
Burgh Muir	Common pasture possessed by, but usually outside of, a burgh upon which urban inhabitants could graze their livestock – especially cattle.
Calsay	Causeway/thoroughfare
To Clenye	To clean
Closs Glass	Glass fitted close to the window frames
Cobill	A cistern for the reception of drainage
Cruives	Pig pens – usually on backlands
To dicht	To clean or tidy
Durrs	Doors
Faill	A turf, a sod, typically used for roofing
Fleschour/flesher	Butcher
Fuilyie/failyie	Excrement, dung, sweepings of the street, rubbish, waste
Furrier	Cleaner and/or processor of animal skins and/or furs
Gavel	End wall of a property
Haill	The whole or every
Ilk	Each
Jaques	Privy

¹ The information in this glossary has been taken from M. Robinson, *The Concise Scots Dictionary* (Aberdeen, 1985); W. A. Craigie, *A dictionary of the older Scottish tongue: from the twelfth century to the end of the seventeenth* (London, 1937).

Jaw holl	Vertical pipe or shoot, usually made of lead, for the drainage of liquid waste descending from inside a property down into a sewer
Kyne	Cattle
Laithe	Low
Listar	Dyer
Nolt	Cattle
Provost	Principal urban official in a burgh – similar to an English Mayor
Pynour	Labourer
To Red	To clear/clean
Red	Waste material, typically building debris or rubble
Rubbish/rubbidge	Unwanted material to be removed from properties, often the by-products from demolition and construction
To Set	To sell [i.e. to set the gait dichtings meant to sell the contract for collecting the burgh's muck]
Shield	Privy
Stanchions	Stanchions/brackets
Swine	Pigs
Syre	Sewer
Tallow	Hard animal fat, which was melted down to produce candles
Tirles	Tiles
To waird	To imprison
Walker/walkster	Fuller of cloth, male/female
Watergait	An open drain into which liquid waste could be deposited. They were also intended to prevent flooding by facilitating the drainage of rain water.
Weshe	Stale urine
Wynd	A close or lane
Yett	Gate

English

Carrion	The dead and putrefying carcass or flesh of an animal – so corrupted as to be unfit for food
Besom	A broom made from a bundle of twigs tied around a central pole.
Forefront	The area between the front of one's property and the crown of the street for which householders tended to be responsible in terms of cleaning and paving
House of Office	Toilet
Midding/midden	A large pile of dung and household waste, usually piled on a forefront for storage before eventual sale to a local farmer
Midding Stead	A temporary holding dump at the edge of a burgh in which large quantities of dung could be stored until they were transported to the surrounding countryside.
Privy	Toilet
Soo	Bucket
Shule	Shovel

Chapter 1: Introduction

Overview of the Topic

The common belief that early modern urban dwellers happily poured their rubbish and effluent into the streets, day after day, without any care for outdoor cleanliness, is deeply entrenched in the current popular historical imagination.² This misconception centres round a stereotypical image of chamber pots having been thrown directly from windows and doors into neighbours' backlands, streets and other public areas – as if this was a normal, widely permissible and perhaps even the only available waste disposal method – at a time when, apparently, people did not value maintaining a clean outdoor environment. Of course, inevitably, a minority of urban inhabitants did empty their chamber pots into the streets and certain individuals created a whole array of other insanitary nuisances in their neighbourhoods – including leaving dunghills in the streets for longer than was permitted, allowing livestock to roam freely, throwing human waste out of windows, sullyng wells and rivers and blocking open sewers with solid waste. But the majority of urban dwellers valued their townscapes and endeavoured to protect their collective standard of outdoor cleanliness, and thereby daily life quality, against their less fastidious neighbours whose insanitary activities threatened to undermine it. However filthy early modern urban streets seem through modern-day eyes, it is profoundly unjust to assume that the people who lived and worked in them were necessarily indifferent to the cleanliness of their immediate outdoor environment. Local governors and the overwhelming majority of neighbours perceived the wilful creation of insanitary, and particularly malodorous, nuisances in their townscapes as unambiguously unacceptable and they invested significant time and energy into suppressing them. By contributing a deeper analysis of sixteenth- and seventeenth-century urban inhabitants' and

² E. Cockayne, *Hubbub: Filth, Noise and Stench in England 1600-1770* (London, 2007). A recent television series also conveyed a similarly inaccurate and sensationalistic stereotype from the medieval period onwards of filthy towns full of unwilling populations who did not value a clean environment: D. Snow, 'Filthy Cities' (BBC2 England, 05/04/2011, 9.00pm, 12/04/2011, 9.00pm, 19/04/2011, 9.00pm).

governors' perception of and relationship with their outdoor environment and of the development of a range of British urban public services to process waste and regulate insanitary nuisances, this thesis builds on the works of Paul Slack and Mark Jenner and equally it stands on the shoulders of European scholars in the field such as Alain Corbain and Dolly Jorgensen.³ It also engages with Keith Wrightson in relation to neighbourhood politics and concepts of 'neighbourliness'.⁴

Unfortunately, sixteenth- and seventeenth-century urban inhabitants left behind neither detailed nor explicit accounts of their relationships with, and perceptions of, the outdoor spaces in which they lived and worked. How did they perceive the sanitary condition of the streets and closes which framed their daily lives and how important was the area of local government which we now call public hygiene or environmental services in their minds? Significant evidence of contemporaries' concern over the cleanliness of the outdoor urban landscape survives in the form of petitions to local councils and the minutes of insanitary nuisance court cases which clearly originated from one neighbour's perceived need to suppress the insanitary activities of another. Typical urban inhabitants were quick to complain to urban officials and to their local courts when their neighbours created insanitary nuisances and they were not afraid to petition their councils when dirty conditions reduced their life quality. Indeed, there is much evidence to suggest that the majority of urban neighbours acted as an informal, but remarkably coherent and effective, institution in their collective and individual efforts to regulate their micro-scale environment, by suppressing their neighbours' insanitary nuisances, largely in harmony with official regulation.

³ P. Slack, *From Reformation to Improvement: Public Welfare in Early Modern England* (Oxford, 1999); Slack, *The Impact of Plague in Early Modern London* (London, 1985); M. Jenner, 'Early modern English conceptions of "cleanliness and "dirt" as reflected in the environmental regulation of London c.1530-c.1700', unpubl. D.Phil. thesis, University of Oxford, 1991; A. Corbin, *The Foul and the Fragrant: Odour and the Social Imagination* (London, 1996); D. Jorgensen, 'Co-operative Sanitation: Managing Streets and Gutters in Late-Medieval England and Scandinavia', *Technology and Culture*, vol. 49, no. 3 (2008), pp. 547-567.

⁴ K. Wrightson, 'The Decline of Neighbourliness Revisited', in N. Jones and D. Woolf, (eds.), *Local Identities in Late Medieval and Early Modern England* (London, 2007), pp. 19-49.

In the sixteenth and seventeenth centuries, the area of local government which is currently known as ‘public hygiene’ was, then as now, crucial to successful cohabitation in often densely populated settlements. It is true that between 1560 and 1700, maintaining an acceptable standard of outdoor cleanliness was far more a part of inhabitants’ daily lives, far more hands-on and far more beholden to householders’ compliance and efforts than it is in a modern-day context. Pre-industrial British towns lacked flushing toilets and comprehensive networks of underground sewers; waste disposal was householders’ responsibility and the overwhelming majority of inhabitants were engaged in some form of agriculture in their backlands. On the other hand, certain elements of the sanitation infrastructure required minimal effort from householders. For example, many urban contemporaries took for granted the efficient functioning of the publicly funded open sewers which ran through their streets. Most twenty-first-century British people take for granted teams of street cleaning employees, weekly rubbish collections and the underground sewerage network to which their flushing toilet is connected. Notably, the Communities Secretary, Eric Pickles, recently went as far as to term residential weekly bin collections in Britain as a ‘basic right’.⁵ Today, these systems are maintained largely behind the scenes, and their effective functioning requires minimal effort from householders. But it is important to bear in mind that, even today, lapses in adequate public hygiene provision occur.⁶

The main task of this thesis is not to estimate how dirty or clean outdoor public spaces actually were. Focusing on the case studies of the large urban centres of Edinburgh and York, with reference to several smaller urban settlements across Scotland and northern England, it

⁵ E. Pickles, ‘Interview’, *BBC Breakfast News* (BBC1, 30/09/11, 8.00am).

⁶ Bill Bryson presented a documentary on modern-day Britain’s increasing litter problem: B. Bryson, ‘Notes on a Dirty Island’, *Panorama* (BBC1, 11/08/08, 8.30pm). Moreover, when refuse collections ceased for only two days, on 16/07/08 and 17/07/08, due to English and Welsh council employees’ industrial strike action, street rubbish quickly accumulated: R. Pattinson, ‘Hundreds of Council Workers Stage Walkout’, *Evening Chronicle* (16/07/08), p. 1. And, in modern-day Capri, commonly perceived as an affluent and glamorous location, the nuisance of dog-fouling reached such high proportions that dog-owners were recently compelled to provide their dog’s DNA to the police, so that those who do not dispose of their dog’s waste correctly can be identified and presented with a fine. See *EasyJet Traveller*, vol. 114 (June, 2011), p. 14.

delves beneath what can be termed the ‘chamber pot in the window’ stereotype, which has regrettably become largely synonymous with the period. Edinburgh and York were selected for deep analysis because of their differences, rather than their similarities. As well as their obvious Anglo-Scottish differences in terms of government, law and culture, Edinburgh experienced a major population expansion in the seventeenth century, whereas York did not; York was relatively flat with more open space and featuring buildings of only two or three storeys, whereas Edinburgh’s topographical gradients were severe, the housing was densely concentrated and some buildings were over ten storeys high; Edinburgh was a national capital city whereas York functioned as a regional centre. The thesis explores and evaluates the complex relationship between how local and national governors organised street cleaning, managed waste disposal⁷ and regulated the cleanliness of the macro-scale outdoor environment and how typical urban inhabitants self-regulated the sanitary standard of their own neighbourhoods. However, it does not argue that there was marked antagonism between inhabitants and urban governors in the management of waste disposal and environmental regulation, or indeed a gap between inhabitants’ concern and governors’ control. Clearly, pitting progressive, industrious and ‘clean’ urban governors against backward, generally unwilling and ‘dirty’ inhabitants is a misleading approach to understanding environmental regulation in this period. It would be similarly misleading to approach the topic primarily as a class issue, pitting ‘clean’ and civilising elites against the ‘dirty’ general populace. Indeed, as the thesis argues, there was actually significant symmetry between the efforts, perceptions and attitudes both of governors and of the governed in relation to outdoor cleanliness. Early modern waste disposal by-laws simply could not have functioned successfully had the

⁷ The term ‘waste’ was not used by contemporaries, but it will be used throughout the thesis as an umbrella term encompassing all solid and liquid materials which inhabitants wanted to remove from their houses, neighbourhoods and towns and cities because they themselves had no further use for them, even if others did, as in the case of the reuse of urban manure as fertiliser by local farmers. These materials included: construction and demolition waste, butchery offal, stable manure, human bodily waste, dirty water used for cleaning, cooking, and washing clothes, the corpses of animals such as horses and dogs and small amounts of manmade materials such as metal and glass.

majority of the urban population not wanted, welcomed and obeyed them. Far from waiting idly and passively for local and national governing institutions to take action to improve the sanitary condition of the outdoor urban landscape on their behalves, neighbours very often used their own initiative to pursue and then to maintain their own collective standard of cleanliness in the outdoor public spaces with which they were so familiar. Inhabitants' concern over the cleanliness of outdoor public spaces was generally strong and their efforts to improve that aspect of urban life largely complemented and reflected those of their local and national governors to manage waste and to improve outdoor salubrity.

The thesis is split into five chapters. The current chapter has provided an explanation of the modern-day misconceptions surrounding the topic, and it also includes a review of the existing relevant literature, an introduction to the cities of Edinburgh and York respectively and the methodological approaches to the thesis. The second chapter explains the character of the environmental challenge in early modern urban Britain. The third chapter explains the legal, governmental and administrative context of environmental regulation in Edinburgh and York, respectively. The fourth chapter compares the management and provision of street cleaning and waste disposal in Edinburgh and York while the fifth compares how insanitary nuisances were regulated in the two cities. The conclusion relates the two case studies to the rest of early modern Britain, comparing them to several smaller urban settlements in lowland Scotland and northern England, as well as highlighting just how differently, and sometimes just how similarly, this area of urban government was managed in different urban settlements. Although primarily the thesis focuses on the detail of how environmental regulation and waste disposal functioned in the case study cities of Edinburgh and York, and to a lesser extent, in the smaller case study towns across lowland Scotland and northern England, it also embraces, engages with and addresses one larger question throughout the thesis: whether or not man is necessarily motivated to live in clean surroundings devoid of excrement and malodorous waste material as a result of his physiological senses or whether

cultural influences, social status and wealth fuel man's desire to live in an environment devoid of unsavoury waste materials.

Literature Review

By and large, historians have been reluctant to research this perceived 'unsavoury' topic. It is true that historians have long appreciated the large extent to which the outdoor, built environment has shaped inhabitants' daily life experiences; but too little attention has been paid to the similarly large extent to which the environment's sanitary condition did so. How people perceived and disposed of waste was an important aspect of daily life which necessarily shaped the experiences of every person who lived in and visited early modern towns. Yet this topic remains unpopular, underresearched, and consequently misunderstood, almost certainly as a result of its explicitly unsavoury connotations and perceived repulsive details. In much the same way, modern public hygiene systems are maintained largely hidden from the public eye, on the edge of towns. Most British historians of this period have at best marginalised and at worst ignored the ways in which early modern urban dwellers perceived, experienced and regulated waste materials and insanitary nuisances which were present around their homes and in the streets and other public spaces in which they lived and worked. Only three decades ago, Lawrence Stone asserted that there was an 'almost total ignorance of...public hygiene' in early modern England.⁸ In the same decade, social historian, F. G. Emmison wrote a history of everyday, domestic life in Essex villages, in which he concluded that Elizabethan environmental regulation systems were ineffective; that 'manor courts grappled in a ceaseless struggle with the problems of foul drainage and filthy dumps'; and that the environment was consequently filthy.⁹ J. Thomas came to a similar conclusion in 1933, in his *Town Government in the Sixteenth Century*, in which he concluded that

⁸ L. Stone, *The Family, Sex and Marriage in England 1500-1800* (London, 1979), p. 62.

⁹ F. Emmison, *Elizabethan Life: Home, Work and Land* (Chelmsford, 1976), p. 295.

sanitation infrastructures were inadequate and that environmental concern was low.¹⁰ Christopher Smout's comment in 1969 that Scottish urban communities were 'lucky if the burgh employed a man with a horse and cart to shift the middens', was written in a similar vein.¹¹ These sweeping statements and negative conclusions, some of which were written in well-established books which are still widely read today, simply do not do justice to the increasingly complex, sophisticated and positive action which both urban dwellers and the urban officials who governed them took to dispose of waste more efficiently and thereby improve the sanitary condition of outdoor public spaces. More recently, in 2007, Emily Cockayne published a monograph presenting a highly selective, and unrepresentative, list of the worst examples of sensory experiences in early modern London, Oxford, Bath and Manchester.¹² It is significant that *Hubbub* is largely based on edited collections of the original sources, which tend to contain disproportionately more of the most noteworthy and unusual extracts from the archival material. When writing about such a complex issue as attitudes towards cleanliness, this methodology inevitably leads to an unbalanced, unrepresentative and inaccurate depiction of early modern urban street scenes, thus reinforcing the 'chamber pot in the window' myth. Indeed, as Mark Jenner observes, 'historians have too often depicted the inhabitants of pre-industrial cities as wallowing cheerfully in grime from which they were finally rescued by nineteenth-century sanitary intervention. Such assumptions [he argues] beautifully exemplify the abiding condescension of posterity'.¹³ Similarly, Richard Oram notes that the 'modern Western cultural aversion' to the use of human waste as manure in the production of crops to be used as food, arising from nineteenth-century medical developments which linked such practices to the spread of disease, has 'perhaps limited past discussion of pre-modern urban waste disposal in Britain,

¹⁰ J. Thomas, *Town Government in the Sixteenth Century* (London, 1933).

¹¹ T. C. Smout, *A History of the Scottish People, 1560-1830* (London, 1969), p. 151.

¹² Cockayne, *Hubbub*.

¹³ M. Jenner, 'Overground, Underground: Pollution and Place in Urban History', *Journal of Urban History*, vol. 24, (1997), pp. 100-101.

and has helped to embed deep in the public consciousness a vision of our ancestors wallowing in their own filth'.¹⁴ It is lamentable that there is any place at all for the acceptance of such inaccurate, unfounded and sensationalistic stereotypes within modern-day society's understanding and appreciation of the past, which is informed by higher, further and school education, academic and non-academic literature, museums and the wider heritage industry and, of course, the media.

While this is a largely unexplored and underresearched field within early modern British history, there have been several informative and important contributions to the topic of early modern urban British waste disposal and environmental regulation on the shoulders of which this thesis undoubtedly stands. Jenner, Walter King and John Harrison have completed informative case studies of public hygiene in early modern London, Prescott and Stirling, respectively.¹⁵ They reveal that waste disposal and outdoor cleanliness in these early modern towns and cities was relatively highly regulated and well organised. To ascertain whether these three examples were typical of other contemporary towns and cities, more detailed case studies need to be completed. In addition to deep and narrow studies of how this area of urban life was regulated in individual settlements, higher level, wider comparative studies are also much needed in order to shed light on important differences between processes and systems and how and why they were adapted or maintained over time in settlements with markedly different characteristics and functions.

¹⁴ R. Oram, 'Waste Management and Peri-Urban Agriculture in the Early Modern Scottish Burgh', *Agricultural History Review*, vol. 59, no. 1 (June, 2011), p. 4.

¹⁵ Jenner, "'cleanliness and "dirt""; W. King, 'How High is too High? Disposing of Dung in Seventeenth-century Prescott (sic.)', *The Sixteenth Century Journal*, vol. 23, no. 3, (1992), pp. 443-457; J. Harrison, 'Public Hygiene and Drainage in Stirling and other Early Modern Scottish Towns', *Review of Scottish Culture*, vol. 11, (1998-99), pp. 67-77. While Jenner's thesis remains unpublished in monograph form, many insightful elements of his thesis have been published as articles: Jenner, "'Another epocha'?" Hartlib, John Lanyon and the improvement of London in the 1650s' in M. Greengrass et al., (eds.), *Samuel Hartlib and Universal Reformation* (Cambridge, 1994), pp. 343-356; Jenner, 'The Politics of London Air: John Evelyn's Fumifugium and the Restoration', *Historical Journal*, vol. 38, no. 3 (1995), pp. 535-551; Jenner, 'The Great Dog Massacre' in W. Naphy and P. Roberts, (eds.), *Fear in Early Modern Society* (Manchester, 1997), pp. 44-61; and Jenner, 'From conduit community to commercial network? Water in London, 1500-1725' in P. Griffiths and M. Jenner, (eds.), *Londinopolis: Essays in the Cultural and Social History of Early Modern London* (Manchester, 2000), pp. 250-272.

While this topic has been largely neglected by traditional social historians of early modern Britain, a whole array of academics from other disciplines and sub-disciplines has embraced it far more enthusiastically. This topic has attracted a range of interest from various academic disciplines, and much of the relevant and informative body of literature which has been written directly about it comes from an eclectic range of academics: from archaeologists, anthropologists, historical geographers and legal historians, to environmental historians, sensory historians and even scholars of literature and bio-physicists.

Sensory historians' attempts to historicise and contextualise early modern sensory experiences, disseminated in exciting and innovative work such as Christopher Woolgar's *The Senses in Late Medieval England*, published in 2006 and Elizabeth Foyster's more recent essay, entitled 'Sensory experiences: smells, sounds and touch in early modern Scotland', as part of the *History of Everyday Life in Scotland* series, are currently transcending the traditional boundaries of historical enquiry.¹⁶ Clearly, historians are coming to realise that the senses must be taken into account if they are to understand and reconstruct contemporaries' daily life experiences in a significant way. There are also two focused studies of early modern literature which relate directly to the topic. Biow analyses contemporary ideas pertaining to cleanliness as portrayed through an array of renaissance Italian literature in order to argue how integral cleanliness was to Italian culture in that period. Gee uses a similar literary style to draw out eighteenth-century English contemporaries' attitudes and values in relation to food leftovers and the very idea of waste products, which was an important aspect of their daily lives.¹⁷

Anthropologists have worked hard to push the boundaries of the field. Mary Douglas argued that humans inevitably aspire to order their world by checking that all aspects of the

¹⁶ C. Woolgar, *The Senses in Late Medieval England* (London, 2006); E. Foyster, 'Sensory Experiences: Smells, Sounds and Touch in Early Modern Scotland' in E. Foyster, and C. Whatley, (eds.), *A History of Everyday Life in Scotland, 1600-1800* (Edinburgh, 2010), pp. 217-233.

¹⁷ D. Biow, *The Culture of Cleanliness in Renaissance Italy* (London, 2006); S. Gee, *Making Waste: Leftovers and the Eighteenth-Century Imagination* (Oxford, 2010).

environment fit into mutually exclusive, familiar, paradigmatic compartments within societal cognitive classificatory systems. Anomalous or ambiguous phenomena which cannot be compartmentalised, Douglas argues, can trigger panic and anxiety which motivates people to suppress or exclude the anomaly; or, conversely, anomalies can attract curiosity and admiration which causes people to celebrate and praise their uniqueness.¹⁸ As Douglas elaborated, metaphorical ‘dirt’ is a ‘compendium category for all events which blur, smudge, contradict, or otherwise confuse accepted classifications’;¹⁹ thus, because anomalies are ‘dirty’, actual physical dirt, when ‘out of place’, is metaphorically as well as physically dirty. Keith Thomas found Douglas’ theory an inadequate explanatory tool. For him, actual physical dirt as ‘matter out of place underrate[s] the special feeling of repugnance inspired by bodily emissions and putrefying matter which make them seem more disgusting than ... a book out of place on the library shelf’.²⁰ Because actual physical dirt ‘out of place’ triggers biological repulsion, Thomas argues, it is incomparable to metaphorical ‘dirt’ and is therefore inapplicable to Douglas’ theory. Virginia Smith’s recent observations underline Thomas’ objection: ‘the brain supports one particularly formidable physiological safety net: the nervous reflex of disgust and repulsion. Disgust is certainly a primary reaction’.²¹ Indeed, bio-physicists have researched how the brain’s insula controls physical reactions to bacteria-filled air, as perceived by scent receptors.²² But physical dirt ‘out of place’ in the sixteenth- and seventeenth-century environment is applicable to Douglas’ theory because contemporaries labelled it as anomalous and were motivated to expel it from their public spaces. By separating putrefying matter ‘out of place’ from library books ‘out of place’,

¹⁸ M. Douglas, *Purity and Danger: An Analysis of Concept of Pollution and Taboo* (Abingdon, 1966), pp. 46-50, 208.

¹⁹ M. Douglas, *Implicit Meanings: Essays in Anthropology by Mary Douglas* (London, 1975), p. 51.

²⁰ K. Thomas, ‘Cleanliness and godliness in early modern England’, in A. Fletcher and P. Roberts, (eds.), *Religion, Culture and Society in Early Modern Britain: essays in honour of Patrick Collinson* (Cambridge, 1994), p. 81.

²¹ V. Smith, *Clean: A History of Personal Hygiene and Purity* (Oxford, 2007), p. 12.

²² S. Greenfield, *The Private Life of the Brain* (London, 2000); W. Miller, *The Anatomy of Disgust* (Cambridge, 1997).

Thomas demonstrates that he has missed the point of Douglas' classificatory theory, which is to explain the socio-cultural meaning of all 'matter out of place'.

Agricultural historians of the period have also made significant contributions to the study of the topic. In 1967, an important collection of essays, edited by Joan Thirsk, unveiled some remarkable discoveries in relation to the use of urban dung as rural fertiliser in *The Agrarian History of England and Wales, 1500-1640*.²³ And more recently, Liam Brunt has written an informative article in relation to manure, highlighting, quite rightly, that the full picture of the manure trade will only become clearer 'through further studies of the disposal of ... urban waste'.²⁴ Moreover, D. Woodward wrote an article tracking discontinuities in attitudes towards manure and its use as fertiliser between 1500 and 1800.²⁵ There have also been some important contributions within the disciplines of archaeological science and historical geography, particularly in relation to the reuse of human and animal waste as fertiliser in both town centres and nearby rural farms and in relation to the origins of town planning and zoning, which are highly relevant to this area of urban government and regulation.²⁶

Legal historians have made important additions to the field. Thomas Barnes, for example, emphasises that environmental concern predates the modern period, detailing the proactive and noteworthy attempt in the first half of the seventeenth century to address the

²³ J. Thirsk, 'The Farming Regions of England' in J. Thirsk, (ed.), *The Agrarian History of England and Wales, volume IV, 1500-1640* (Cambridge, 1967), pp. 27, 52.

²⁴ L. Brunt, 'Where there's muck, there's brass: the market for manure in the industrial revolution', *Economic History Review*, vol. 60, no. 2 (2007), p. 277.

²⁵ D. Woodward, "'An Essay on Manures": Changing Attitudes towards Fertilization in England, 1500-1800', in J. Chartres and D. Hey, (eds.), *English Rural Society, 1500-1800: Essays in Honour of Joan Thirsk* (Cambridge, 1990), pp. 251-278.

²⁶ Oram, 'Waste Management', pp. 1-17; D. Davidson, et al., 'The legacy of past urban waste disposal on local soils', *Journal of Archaeological Science*, vol. 33, no. 6 (2006), pp. 778-783; M. Jansen, 'Water Supply and Sewage Disposal at Mohenjo-Daro', *World Archaeology*, vol. 21, no. 2 (1989), pp. 177-192; M. Beck and M. Hill, 'Rubbish, Relatives and Residence: The Family Use of Middens', *Journal of Archaeological Method and Theory*, vol. 11, no. 3 (2004), pp. 297-333; S. Carter, 'A Reassessment of the Origins of St Andrews "Garden Soil"', *Tayside and Fife Archaeological Journal*, no. 7 (2001), pp. 87-92; J. McKenzie, 'Manuring Practices in Scotland: Deep Anthropogenic Soils and the Historical Record', in B. Ballin Smith et al., (eds.), *West Over Sea: Studies in Scandinavian Sea-Borne Expansion and Settlement before 1300* (Leiden, 2007), pp. 401-417; R. Rogers, 'The Evolution of Scottish Town Planning', in G. Gordon and B. Dicks, (eds.), *Scottish Urban History* (Aberdeen, 1983), pp. 71-91; J. Greig, 'Garderobes, Sewers, Cesspits and Latrines', *Current Archaeology*, vol. 85 (1982), pp. 49-52.

root problems of London's over-population, including insanitary conditions, by passing and enforcing building regulations rather than simply dealing with the consequences. Indeed, Barnes called it 'the most considerable, continuous, and best documented experiment in environmental control in the Common Law tradition', calling it a 'remarkable example of governmental perspicacity'.²⁷ While it ultimately failed, derailed by the Civil Wars, he asserts nevertheless that 'from this early experiment, had it survived, we might have derived a solid procedural foundation, some lines of doctrinal development, and even a modicum of substantive rules upon which to build today's environmental law'.²⁸ Moreover, Janet Loengard made an important contribution to the topic in 1978, when she wrote an article about common law nuisance cases, highlighting the potentially large extent to which the official nuisance cases submitted to law courts could well represent the tip of a much larger iceberg of inhabitants' concern over the environment. Official nuisance cases are by definition, she suggests, the ones which neighbours had failed to resolve informally, privately and verbally, pointing out that 'self-help has the virtues of speed, [and] simplicity'.²⁹ Chris Brooks and Chris Harrison have also made significant progress in terms of understanding how social relationships were reflected in litigation.³⁰

Significantly more progress has been made in relation to both medieval and modern British public hygiene and in relation to waste disposal and environmental regulation in non-British early modern cities. The first edited collection on nineteenth-century sanitary reform has recently been published, which provides an important and remarkably in-depth and lengthy analysis of several aspects of sanitary improvement over the course of the Victorian

²⁷ T. Barnes, 'The Prerogative and Environmental Control of London Building in the Early Seventeenth Century: The Lost Opportunity', *California Law Review*, vol. 58 (1970), pp. 1332, 1334.

²⁸ *Ibid.*, p. 1335.

²⁹ J. Loengard, 'The Assize of Nuisance: Origins of an Action at Common Law', *Cambridge Law Journal*, vol. 37, pt. 1 (1978), p. 144.

³⁰ C. Brooks, *Lawyers, Litigation and English Society since 1450* (London, 1998); C. Harrison, 'Manor Courts and the Governance of Tudor England', in C. Brooks and M. Lobban, (eds.), *Communities and Courts in Britain, 1150-1900* (London, 1997).

era.³¹ Moreover, Martin Melosi's *The Sanitary City* tracks the development of waste disposal and environmental regulation in America from colonial times to the present day.³² Melosi highlights that there are some examples of limited regulation and attempts to improve conditions in colonial times, but he concludes, rather negatively, 'erratic enforcement of sanitary laws undermined the effort to protect the public health throughout colonial America and continued to be the problem into the eighteenth and early nineteenth centuries'.³³ Dorothy Porter's ambitious study of public hygiene throughout history and across the world is inevitably uncomprehensive, but it does provide a high-level overview including some useful perspectives in terms of long-term continuity and change and in terms of geographical differences.³⁴ There are also several informative articles in relation to waste disposal in the medieval period, which highlight that just as progressive attitudes towards outdoor sanitation and the environment did not originate in the Victorian era, nor did they originate in the sixteenth century. Indeed, medieval governors and urban inhabitants also made significant efforts to uphold their own collective standard of cleanliness in the urban environment.³⁵ Impressive progress has also been made in relation to public hygiene in the early modern Low Countries and in Italy.³⁶ And, in relation to France, Georges Vigarello's *Concepts of*

³¹ M. Allen-Emerson, (ed.), *Sanitary Reform in Victorian Britain*, 6 vols. (London, 2012).

³² M. Melosi, *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore, 2000). For a more detailed analysis of American public hygiene in the modern period, see Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment* (Pittsburgh, 2005, rev. ed.).

³³ Melosi, *Sanitary City*, p. 21.

³⁴ D. Porter, *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times* (London, 1999).

³⁵ D. Keene, 'Rubbish in Medieval Towns', A. Hall and H. Kenward, (eds.), *Environmental Archaeology in the Urban Context* (1982), pp. 26-30; D. Evans, 'A Good Riddance of Bad Rubbish? Scatological Musings on Rubbish Disposal and the Handling of "Filth" in Medieval and Early Post-medieval Towns', in K. De Groote et al., (eds.), *Exchanging Medieval Material Culture: Studies on Archaeology and History presented to Frans Verhaeghe* (Brussels, 2010), pp. 267-278; E. Sabine, 'City Cleaning in Medieval London', *Speculum*, vol. 12 (1937), pp. 19-43; L. Thorndike, 'Sanitation, Baths, and Street-Cleaning in the Middle Ages and Renaissance', *Speculum*, vol. 3 (1928), pp. 192-203; R. Jones, 'Manure and the Medieval Social Order', in M. Allen et al., (eds.), *Land and People: Papers presented in Memory of John G. Evans*, Prehistoric Society Research Paper 2 (2009), pp. 215-225; R. Zupko, *Straws in the Wind: Medieval Urban Environmental Law: The Case of Northern Italy* (Boulder, 1996).

³⁶ H. Deceulaer, 'Implications of the Street', in M. van der Heijden et al., (eds.), *Serving the Urban Community: The Rise of Public Facilities in the Low Countries, 1400-1800* (Amsterdam, 2009), pp. 194-216; B. Van Bavel and O. Gelderblom, 'The Economic Origins of Cleanliness in the Dutch Golden Age', *Past and Present*, vol. 205, no. 1 (Nov., 2009), pp. 41-69; M. van der Heijden, 'New perspectives on public services in early modern

Cleanliness, translated into English in 1988, marked the first historiographical attempt to understand what cleanliness meant in the context of seventeenth-century culture.³⁷ Alain Corbin's *The Foul and the Fragrant*, published in 1996, which focuses on olfactory perceptions in eighteenth- and nineteenth-century France, arguably inspired a now burgeoning field of European sensory history.³⁸

This thesis focuses on Edinburgh as one of its case studies in an attempt to fill an obvious and important gap in the literature of the city's history. Only a handful of historians have written about this topic in relation to early modern Edinburgh. In 1940, for example, Margaret Wood wrote an important essay about the function of Edinburgh's Dean of Guild Court in the sixteenth century, in which she agrees 'much attention was given to the primitive sanitary arrangements, showing that the ... inhabitants had the will, if not the means, to be cleanly'.³⁹ Much later, in 1994, Rab Houston wrote about Edinburgh's environment in the later period of 1660-1760, questioning how bad the sanitary condition of Edinburgh really was, and detailing many attempts by the city's governors and inhabitants to protect the environment against malodours and waste, concluding that 'keeping the city in a tolerable condition was a constant struggle'.⁴⁰ Between 2002 and 2005, moreover, archaeologists excavated beneath Edinburgh's Waverley Vaults, discovering the sites of some sixteenth- and seventeenth-century houses and backlands in what was formerly the separate burgh of Canongate. Soil micromorphology demonstrated,

Europe', *Journal of Urban History*, vol. 36 (2010), pp. 271-284; S. Schama, *Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age* (New York, 1987); J. Wheeler, 'Stench in Sixteenth-century Venice' in A. Cowan and J. Steward, (eds.), *The City and the Senses: Urban Culture Since 1500* (Aldershot, 2007), pp. 25-38.

³⁷ G. Vigarello, *Concepts of Cleanliness: Changing Attitudes in France since the Middle Ages*, trans. J. Birrel, (Cambridge, 1988), pp. 18, 58. For an in-depth and informative discussion of public hygiene improvements and attitudes towards waste in modern Paris, see D. Reid, *Paris Sewers and Sewermen: Realities and Representations* (London, 1993).

³⁸ Corbin, *Foul and Fragrant*; see also R. Jütte, *A History of the Senses from Antiquity to Cyberspace* (Cambridge, 2005).

³⁹ M. Wood, 'The Neighbourhood Book', *The Book of the Old Edinburgh Club*, vol. 23 (1940), pp. 89-90.

⁴⁰ R. Houston, 'Fire and Filth: Edinburgh's Environment, 1660-1760', *The Book of the Old Edinburgh Club, New Series*, vol. 3 (1994), p. 28.

a relatively rapid accumulation of domestic refuse and fuel to enrich the soil, consistent with a cultivation soil that had been deepened either by the deliberate addition of mineral material [such] as manure, or by the dumping of domestic waste.⁴¹

It was concluded that this efficient means of disposing of the types of household waste which increase soil fertility did occur in early modern Edinburgh. Despite these important and valuable, albeit tentative, steps towards understanding this important aspect of Edinburgh's early modern history, much about the topic is yet to be discovered, explained and ultimately understood in relation to Edinburgh.

Regarding York, most of the historians who have studied and commented on its sanitary condition during the late-medieval and early modern periods have tended to paint a far more unsavoury picture than the few who have studied sanitation in early modern Edinburgh. In 1913, for example, T. P. Cooper wrote a damning account of the inadequacies of York's public hygiene infrastructure in the medieval period, noting that 'the thoroughfares and byways ... were loathsome and deep with offensive matter ... [the] Corporation delegated the duty of keeping the streets clean to the citizens at large, but as they failed to perform this necessary duty, the streets remained dirty and unkept'.⁴² In 1967, moreover, Barbara Wilson studied York Corporation's management of the city between 1580 and 1660, concluding that while it would be unfair to call seventeenth-century York 'backward and declining ... there was little change or development in the form of city government during the eighty years under consideration'.⁴³ In relation to the corporation's management of public health and hygiene in particular, she observed a similar stasis,

Repeated injunctions ... show that most measures for keeping the city clean and healthy were ineffective. ... Methods of sewage disposal were unsatisfactory. ...

⁴¹ R. Toolis and D. Sproat, 'The transformation of an early post-medieval town into a major modern city: excavation and survey of the Waverley Vaults, New Street, Edinburgh, Scotland', *Post Medieval Archaeology*, vol. 41, no. 1 (2007), p. 172.

⁴² T. P. Cooper, 'The Medieval Highways, Streets, Open Ditches, and Sanitary Conditions of the City of York', *Yorkshire Archaeological Journal*, vol. 22 (1913), p. 271.

⁴³ B. Wilson, 'The Corporation of York, 1580-1660', unpubl. M.Phil. thesis, University of York, 1967, p. 303.

Special efforts seem to have been made, however, only when important visitors were expected ... Wandering pigs remained a constant nuisance.⁴⁴

It is important to note that this unambiguously negative conclusion was based on a rather narrow and uncritical categorisation of administrative records for an MA thesis. In 1979, David Palliser offered a more vivid, but no less damning depiction,

Cheek-by-jowl with the castle, cathedral, churches, and city walls were narrow, filthy streets of huddled houses and cottages. ... The lesser streets and lanes were even narrower, and probably lined with one- or two-roomed hovels ... Both streets and lanes were also much more squalid than can easily be pictured. Repeated corporation orders to cleanse the streets, remove garbage heaps, and drive out scavenging pigs are eloquent enough of normal conditions, and passers-by risked being splattered as chamber-pots were emptied.⁴⁵

Palliser has imaginatively elaborated these facts regarding the government of Tudor York in order to create a less than objective, yet artistic and interesting image for the reader. Palliser's pessimism when describing early modern York as a historian in the 1970s could well have stemmed from the general urban decay prevalent across the UK and the USA at the time.

In 2004, however, Pamela Hartshorne's in-depth study into York's public spaces between 1476 and 1586, marked a turning point in the historiography of York's pre-modern public hygiene provision, offering a distinctly more sophisticated and professional academic analysis of contemporaries' attitudes towards the sanitary condition of York's townscape. While waste disposal and insanitary nuisance was not the primary focus of her study, and her research concerns a period which largely precedes the chronology of this thesis, she nevertheless offers some useful and apt observations regarding contemporary conceptions of street cleanliness in the city,

In streets which were narrow at the best of times, the problem of waste, rubbish and clutter was a perennial one. ... Contrary to popular belief about the squalor of pre-modern cities, York had an established system for removing filth from public space. The House Books record a consistent concern on the part of the civic authorities to ensure that human and animal excrement, carcasses and

⁴⁴ Ibid., pp. 167-168.

⁴⁵ Palliser, *Tudor York*, pp. 26-27. See also D. Palliser, 'Civic Mentality and the Environment in Tudor York', *Northern History Journal*, vol. 18, (1982), pp. 78-115, which contains a similarly negative conclusion in relation to York's public hygiene provision in the Tudor period.

butchers' refuse, house and garden rubbish ... were removed from public space. The wardmote juries frequently described dunghills as a nuisance, and tried to ensure that they were removed.⁴⁶

Using a markedly different approach to this topic, Hartshorne focused not on the failures of the city's hygiene infrastructure, but rather on the corporation's efforts to improve conditions in the context of simple technology and necessary urban agriculture, and she paid close attention to York's long-established medieval street cleaning and waste disposal processes and systems. This thesis explores to what extent Hartshorne's findings of positive attitudes towards this area of city government in the late medieval period continued into the later sixteenth and seventeenth centuries. Furthermore, whereas Hartshorne studies the entire array of urban nuisances, including transgressions such as card-playing and eaves-dropping, this thesis focuses exclusively on insanitary nuisances and the disposal of waste.

In 2008, in a similarly sophisticated vein, Dolly Jorgensen conducted an analysis of the management of street cleanliness and drainage in several Scandinavian and English medieval towns, including York, between 1350 and 1550, in which she emphasises the necessarily co-operative element of managing outdoor sanitation and waste disposal in the context of relatively rudimentary technology, on a practical, day-to-day basis in this period. She argues that urban governors' top-down orders could not have functioned successfully without considerable compatibility with inhabitants' bottom-up concerns, and highlights that 'managing uncomplicated technology can be complicated' when its effective functioning relies on householders' daily compliance.

The effectiveness of medieval sanitation was contingent upon *both* physical maintenance of the technology and cooperation from residents. During the late medieval period some waste in the streets may have been a daily reality, just as littering is today, but streets covered with several inches of refuse do not appear to have been a regular part of urban life. Because of the primitive technologies available, ... waste disposal had to become a highly social activity in the

⁴⁶ P. Hartshorne, 'The Street and the Perception of Public Space in York, 1476-1586', unpubl. Ph.D. thesis, York University, 2004, pp. 145, 232-233.

medieval city, with responsibility for sanitation divided between the government and citizenry.⁴⁷

Jorgensen makes it clear that a positive attitude towards this area of city government and the deep sense of value which contemporaries attached to keeping their cityscape clean, both among York's governors and inhabitants alike, were already well established in the medieval period. This thesis argues that such compatibility between top-down governance and bottom-up community concern, and the generally positive attitude towards waste disposal and street cleanliness, continued into the early modern period, at least up to the turn of the eighteenth century. While the origins of such positive attitudes are undoubtedly rooted in the medieval period, they did undergo substantial development in the early modern period. In line with the recently much improved historiography regarding attitudes towards waste disposal and environmental regulation in medieval York, the thesis focuses on the city as one of its case studies in an attempt to fill the obvious and urgent chronological gap in relation to this aspect of the city's history.

While the findings of this thesis emphatically refute the excessively negative and ill-researched conclusions posited in largely earlier books, which arguably established and reinforced the 'chamber pot in the window' myth, many of the other more progressive and objective works have inspired, developed and crystallised the conclusions presented below. All of the works highlighted in the literature review have informed and driven the thesis to various extents and they collectively underpin the foundation of the chapters below.

Introduction to Edinburgh

Scotland's capital city was, and still is, situated on a prominent crag, which descended steeply from Edinburgh Castle down the densely populated High Street (Royal Mile) – with all of its numerous, cramped closes running down steeply from its north and south sides –

⁴⁷ Jorgensen, 'Co-operative Sanitation', pp. 547, 561, 564, 566.

down to the lower part of the High Street, descending through to the separate burgh of Canongate, beyond the Netherbow, which boasted its own council, tolbooth, and market, and then down to the Palace of Holyrood House at the bottom of Canongate.⁴⁸ The Nor' Loch was a natural boundary to the north of the High Street and Edinburgh's port at Leith was a short distance away to the north east of the landlocked city.⁴⁹ Estimates suggest that Edinburgh's population swelled from around 12,500 in 1560 to perhaps between 27,000 and 30,000 by 1700, which meant that it was slightly larger than Dublin, around twice as large as Dundee and Aberdeen, but nowhere near as populous as its English counterpart, London, which housed around 550,000 people by 1700.⁵⁰ Consequently, between the 1590s and the 1630s, the area bounded by Edinburgh's Old Flodden Wall and its High Street was host to a twofold housing-density increase.⁵¹ Edinburgh was quartered for ease of administration, and these four areas functioned effectively as parishes until 1655, when inner Edinburgh was divided into smaller sections. After 1655, greater Edinburgh consisted of eleven parishes in total, of which the following seven were situated in inner Edinburgh: College Kirk, Greyfriars' Kirk, Lady Yester Kirk, New Kirk, Old Kirk, Tolbooth Kirk and Tron Kirk.⁵² Edinburgh was an important centre for trade, with a tax assessment in the early seventeenth century of over two and half times that of Dundee, the second largest economic centre in Scotland, and over twenty markets were held within the city walls.⁵³ Edinburgh was a bustling, highly populated and densely built and increasingly densely inhabited city, hosting an array of important foreign and native visitors. The density of the closes running down

⁴⁸ Although Canongate was made a dependency of Edinburgh in 1639, it was not legally incorporated within Edinburgh until 1856.

⁴⁹ Around seventy per cent of Scotland's staple exports left the country through the port of Leith. See L. Stewart, *Urban Politics and the British Civil Wars: Edinburgh 1617-1653* (Leiden, 2006), p. 2.

⁵⁰ H. Dingwall, *Late Seventeenth-Century Edinburgh: A Demographic Study* (Aldershot, 1994), pp. 13, 16-21; W. Makey, 'Edinburgh in Mid-seventeenth Century' in M. Lynch, (ed.), *The Early Modern Town in Scotland* (London, 1987), p. 205; M. Lynch, *Edinburgh and the Reformation* (Aldershot, 1993), p. 10.

⁵¹ M. Lynch, 'The Scottish Early Modern Burgh', *History Today*, vol. 35, (Feb, 1983), p. 11.

⁵² H. Dingwall, *Late Seventeenth-Century Edinburgh: A Demographic Study* (Aldershot, 1994), pp. 12-13; Edinburgh City Archives [ECA], SL1/1/18: Edinburgh Town Council Minutes, 1653-1655.

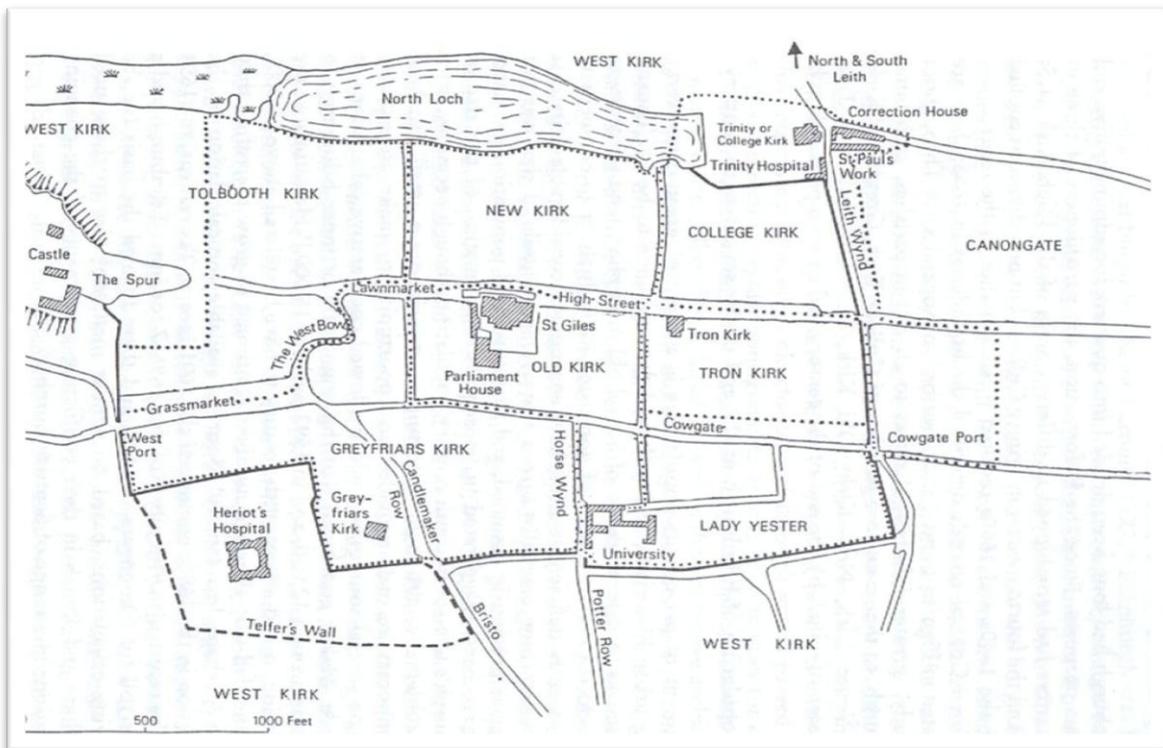
⁵³ Stewart, *Urban Politics*, pp. 1-2.

from both sides of the High Street can be seen vividly below in this contemporary depiction of Edinburgh from above.

Fig. 1: Sections from James Gordon of Rothiemay's View of Edinburgh, (1647).⁵⁴



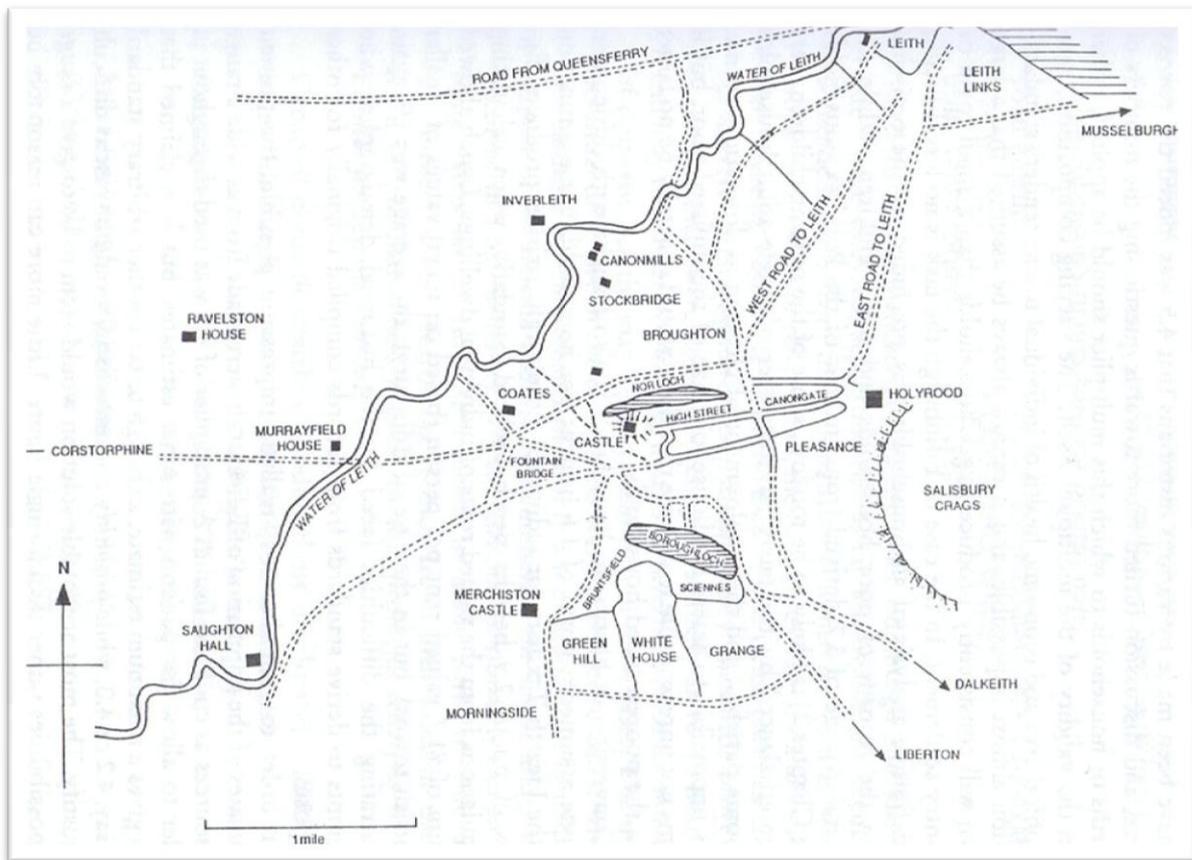
Fig. 2: Inner Edinburgh's Parishes, (1690s)⁵⁵



⁵⁴ J. Gordon, *Edinodunensis Tabulam/Iacobus Gordinas P. Rothemayus* (Amsterdam, 1647), taken from The National Library of Scotland, 'Maps of Scotland', URL: <http://www.nls.uk/maps/early/gord1647.html> (Website accessed on 04/02/07).

⁵⁵ Taken from Dingwall, *Late Seventeenth-Century Edinburgh*, fig. 1, p. 14.

Fig. 3: *Edinburgh's Suburbs and Leith, (c.1700)*⁵⁶



This description of Edinburgh, written in 1689 by an English clergyman, Rev. Thomas Morer, depicts a city which was certainly not renowned for its cleanliness.

Between ... [Edinburgh's Cow Gate] and the High Street there are many little lanes of communication, but very steep and troublesome, and withal so nasty (for want of boghouses, which they very rarely have), that Edinburgh is likened by some to an ivory comb, whose teeth on both sides are very foul.⁵⁷

The ivory comb analogy can be appreciated by looking closely at fig. 1 above. The closes were certainly very narrow and the numerous tenements within them meant that they were very densely populated, but how foul they were is questionable. The Scottish political, religious, administrative and legal centre necessarily played host to a myriad of prestigious visitors, who often observed, judged and sometimes wrote about the standard of outdoor

⁵⁶ Taken from Dingwall, *Late Seventeenth-Century Edinburgh*, fig. 2, p. 15.

⁵⁷ Rev. T. Morer, *A Short Account of Scotland: Being a Description of the Nature of that Kingdom...* (London, 1702). Morer's description of Edinburgh, included in this wider 1702 publication, was based on notes taken during his trip to Scotland in 1689.

cleanliness which they encountered during their visits. Morer's condemnation of the city was neither new nor unusual, but joined a long-established genre of purposely anti-Scottish literature.⁵⁸ In 1617, for example, another Englishman, Sir Anthony Weldon, noted,

The men of old did no more wonder that the great Messias [sic] should be born in so poor a town as Bethlehem in Judea, than I do wonder that so brave a prince as King James [VI and I] should be borne in so stinking a town as Edinburgh in lousy Scotland'.⁵⁹

Weldon's comments were obviously shaped by his political stance against James I and VI. He was subsequently dismissed from James' court and went on to support the Parliamentarians during the Civil Wars, holding and administering Kent. Moreover, in 1635, Englishman Sir William Brereton commented,

[Edinburgh] is placed in a daintie health-full pure aire : and doubtless were a most health-full place to live in : were nott the inhabitants most sluttish, nastye and sloath-full people... Their houses of office [i.e. privies] are tubs, or firkins, placed upon the end : which they never emptie, until they bee full, soe as the sent thereof annoyeth, and offendeth the whole house'.⁶⁰

And, in a similar vein, John Ray included the following extract in his *Collection of English Proverbs*, published in 1684,

A Scotch warming pan i.e. A Wench
The story is well known of the Gentleman travelling in Scotland, who desiring to have his bed warmed, the servant-maid doffs her clothes, and lays her self down in it a while. In Scotland they have neither bellowes, warmingpans, nor houses of office [i.e. privies].⁶¹

Clearly, such comments and descriptions cannot be used to reconstruct the sanitary, or indeed insanitary, condition of Edinburgh's landscape accurately. Written by Englishmen, they are sensationalistic, purposely anti-Scottish and unhelpful to the objective historian, who must remain mindful that foreigners, particularly Englishmen, were motivated to denigrate

⁵⁸ These issues are discussed in L. J. Skelton, 'Pursuing Improvement: Public Hygiene in Scottish Burghs, 1500-1700', *History Scotland Magazine*, vol. 9, no. 6 (Nov/Dec, 2009), pp. 22-27.

⁵⁹ Sir. A. Weldon, 'A Perfect Description of the People and Country of Scotland' (London, 1617), in P. H. Brown, (ed.), *Early Travellers in Scotland* (Edinburgh, 1978), p. 103.

⁶⁰ Sir W. Brereton, *Journal of Sir William Brereton* (1635), in J. C. Hodgson, (ed.), *North Country Diaries, Second Series* (Surtees Society, 124, 1914), pp. 30-31.

⁶¹ J. Ray, *A Collection of English Proverbs Digested into a Convenient Method for the Speedy finding of any one upon occasions* (Cambridge, 1684), pp. 83-84.

Edinburgh's public hygiene provision to enhance their own countries' perceived relative civility. In 1724, Daniel Defoe, who was in favour of the Anglo-Scottish union, appreciated such accounts' intrinsic unreliability. He noted that Scotland's 'enemies' made her inadequate public hygiene 'a subject of scorn and reproach; as if the people were not as willing to live sweet and clean as other nations, but delighted in stench and nastiness'.⁶²

The travel literature's unreliability, however, does not pose a particularly significant problem in the context of this thesis. The typically condemnatory nature of travel literature written in this period about Edinburgh, and about Scotland more generally, however exaggeratory and sensationalistic, is only relevant to the thesis in that it contributed, perhaps even in a catalytic manner, to motivate national, and in turn city, governors to address Edinburgh's perceived insanitary condition in a more proactive manner. Edinburgh's outdoor salubrity was not merely a mundane matter of its own inhabitants' pragmatic waste disposal arrangements and daily life quality, to be managed exclusively and privately by burgh institutions and officials, as it was for its smaller urban counterparts. Rather, it was also a nationally significant, arguably political, issue which, at times, attracted the keen interest of national institutions, such as Scotland's representative urban assembly, the Convention of Burghs, and even the Scottish Parliament and Privy Council.⁶³

Introduction to York

Widely accepted as England's second city, York provides a revealing case study for the close analysis of changing attitudes towards environmental regulation, waste disposal and sanitation systems and processes in the late-sixteenth and seventeenth centuries. As the seat of an archbishop, York had long been considered the capital of the northern province of the Church of England, and the city hosted the Council of the North from 1485 until its

⁶² D. Defoe, *A Tour through the Whole Island of Great Britain* (1724), edited by P. Rogers (London, 1971), p. 577.

⁶³ See chapter three, pp. 87-107 for a detailed description of these institutions.

dissolution by the Long Parliament in 1641. As the ecclesiastical, legal, administrative and to some extent social centre of northern England, York played host to many prestigious visitors from far and wide, travelling up and down the Great North Road between Edinburgh and London. Moreover, its role as a strategic regional trading centre meant that it was an imperative that its main thoroughfares were kept clear and passable at all times. Environmental regulation was an important part of York's local government during this period.

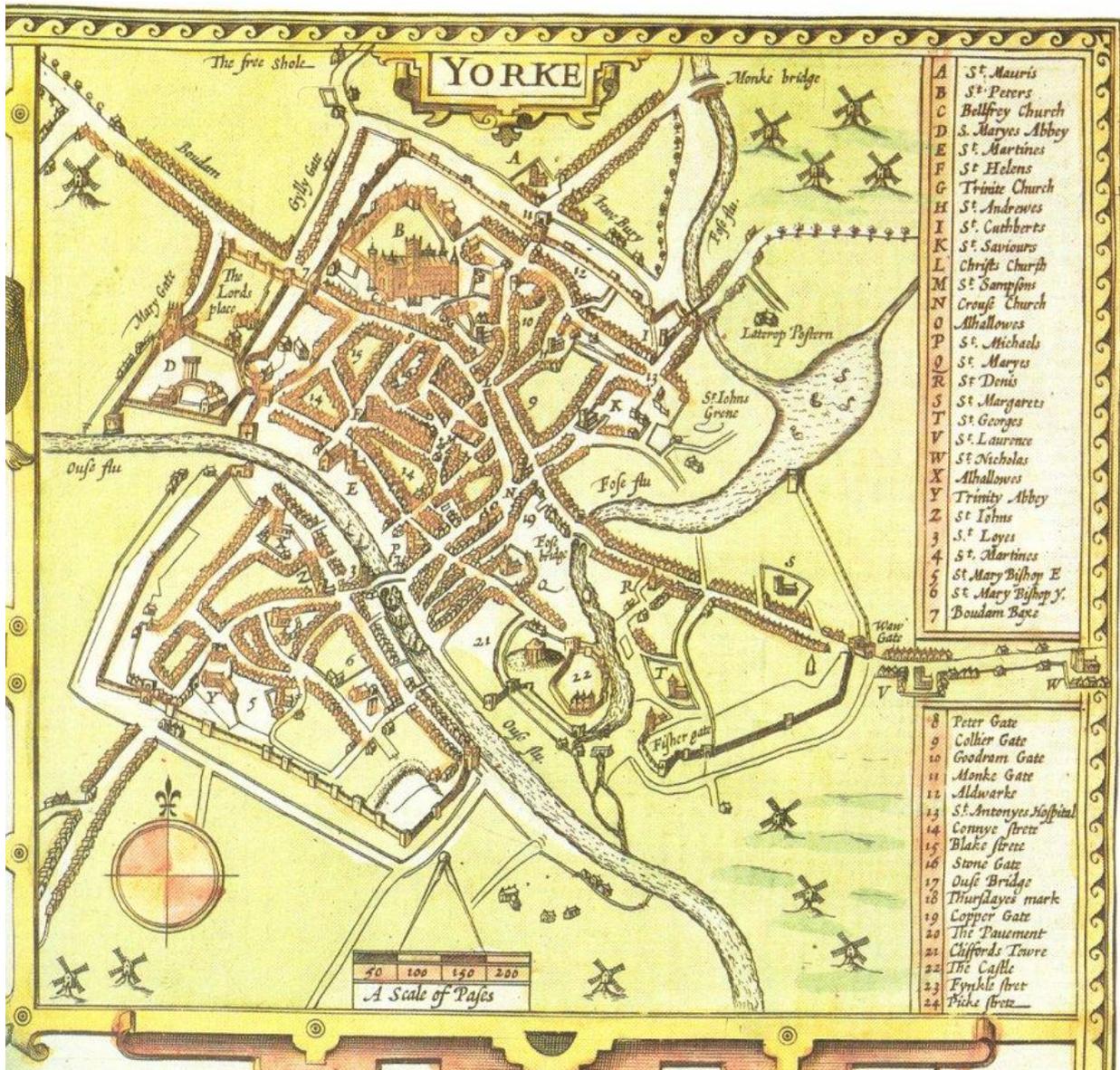
York boasted substantial walls, sandwiched between concentric inner and outer dry moats, which ran almost continuously for more than two miles, interrupted only by the River Ouse, the River Fosse and the marsh next to the Fosse, encompassing some 263 acres of the city.⁶⁴ Five gates known as bars defended the access points from the main radial roads into the city (Monk Bar, Fishergate Bar, Bootham Bar, Micklegate Bar and Walmgate Bar), and seven smaller gates known as 'posterns' guarded the points where the rivers crossed the walls.⁶⁵ York was originally divided into six secular, administrative wards, which were simplified into four wards during the 1520s (Bootham Ward, Monk Ward, Walmgate Ward and Micklegate Ward), of which the latter two had significantly more open space. The city was also split ecclesiastically into twenty-four parishes. York had several bridges, the most important being Fosse Bridge and Ouse Bridge – the latter collapsed in 1565 but had been rebuilt by 1567 with impressive speed.⁶⁶

⁶⁴ D. Palliser, *Tudor York* (Oxford, 1979), pp. 23-25.

⁶⁵ *Ibid.*, pp. 23-25.

⁶⁶ *Ibid.*, p. 82.

Fig. 4: John Speed's Plan of York (c.1612)⁶⁷



The population estimates for the city indicate that while York may well have experienced a brief increase in population of as much as 71% between 1548 and the turn of the seventeenth century, that it actually fell into gradual, but steady decline henceforth until well into the eighteenth century due to the decline in the cloth market and the economy more generally.

⁶⁷ John Speed, *Theatre of the Empire of Great Britaine* (1610).

Fig. 5: The Estimated Population of York, 1066-1760

Source	Year	Households	Population	Minimum (4.25)	+25%	% change since last count
Domesday Book	1066	-	9,000 ^a	-	-	-
Poll Tax	1377	-	10,872 ^b	-	-	+20.8
Chantry Commissioners' Survey	1548	-	6,431 ^c	-	8,038	-26.1
Parish Registers	1601-10	-	11,000 ^d	-	13,750	+71.0
Corporation House Count	1639	2,156	-	9,163	11,454	-16.7
Hearth Tax	1671	1,869	-	7,943	9,929	-13.3
Parish Registers	1760	-	12,400 ^e	-	-	+12.0

Source: a) Palliser, 'Domesday York', *Borthwick Papers*, vol. 78 (1990).
b) J. Russell, *British Medieval Population* (Albuquerque, 1948), p. 142.
c) Communicants, including relative adjustments for parishes which lack extant records.
d) Including relative adjustments for parishes which lack extant records.
e) G. Forster, 'York in the 17th century', in P. Tillot, (ed.), *A History of the County of York, The City of York* (London, 1961), pp. 160-206.

Therefore, it is fair to say that while York's sanitation and waste disposal systems and processes might have been placed under some strain during the later half of the sixteenth century, this pressure diminished considerably throughout the seventeenth century, and it is highly likely that the city did not suffer from significantly augmented urban waste over the course of the whole period. The city's demography must be considered in the context of the relatively large geographical area within its walls, especially when it is compared directly to Edinburgh. Not only did York have a relatively low and gradually declining population, but it was also a very sparsely populated city, albeit featuring some enclaves of denser population in certain areas.

Fig. 6: *York from the Windmill without Castlegate Postern* (c. 1700)⁶⁸



Several contemporaries have left written descriptions of the city. Dirty streets, filth and rubbish are curiously absent from all of their accounts of York. In 1586, for example, William Camden termed York ‘the second city of England, the finest of this region and indeed of the whole North’ and he elaborated that ‘it is pleasant, large, and strongly fortified, adorned with private as well as public buildings, crammed with riches and with people’.⁶⁹ Clearly, Camden respected the city, which he described as ‘large’ and he notes that he found it a pleasant place. It is highly unlikely that Camden would describe a city as pleasant if he perceived it as intolerably filthy by his own standards, whatever they were. In 1639, John Taylor provided far less detail when he described the city, but he, too, clearly admired it, deeming it ‘a great, faire, and the second city in England’.⁷⁰ A few decades later, in 1673, Richard Blome agreed with Camden and Taylor that York ‘next to London claimeth priority of all other cities in England’ and he, too, described it positively, as ‘a place of great antiquity and fame ... a fair, large and beautiful city, adorned with many splendid buildings,

⁶⁸ *York from the Windmill without Castlegate Postern*, c. 1700, painted by Francis Place, York Art Gallery, York. URL: <http://www.historyofyork.org.uk/themes/georgian/daniel-defoe-s-york> (website accessed 01/07/12).

⁶⁹ W. Camden, *Britannia* (1586), quoted in E. Gibson, (ed.), *Britannia* (London, 1695), p. 407.

⁷⁰ J. Taylor, *Adventures* (1639), quoted in J. Chandler, (ed.), *Travels through Stuart Britain: The Adventures of John Taylor, Water Poet* (Stroud, 1999), p. 167.

both publick and private, [it] is very populous, much resorted unto and well inhabited by Gentry, and wealthy Trades-men'.⁷¹

Thanks to the daring adventures of the avid traveller, Celia Fiennes, one can also appreciate the city right at the end of the period, in 1697, through a woman's eyes. Fiennes was not quite as complementary as her predecessors, Camden, Taylor and Blome, noting that York 'stands high but for one of the Metropolis and the See of the Archbishop it makes but a meane appearance'. She then elaborated that 'the streetes are narrow and not of any length, save one which you enter of from the bridge', by which she was referring to Micklegate. Fiennes also noted that 'the houses are very low and as indifferent as in any country town, and the narrowness of the streets makes it appear very mean'.⁷² Despite her comparatively negative appraisal of the city, however, Fiennes does not highlight the presence of dirt or rubbish on the streets, which suggests that York was not excessively dirty, at least not below Fiennes' own standards of cleanliness. It is also possible, however, that Fiennes noticed dirty streets, but did not consider such matters an appropriate subject for a written description of a city. It is also significant that that Fiennes was not writing for publication, but rather for her own private recollections of her journey.

In the early eighteenth century, between 1724 and 1726, Daniel Defoe described York as 'a spacious city', which covered 'a great deal of ground, perhaps more than any city in England out of Middlesex, except Norwich'. He also noted that York's buildings were 'not close and thronged as at Bristol, or as at Durham, nor is York so populous as either Bristol or Norwich'. On a positive note, Defoe called York 'very magnificent, and, as we say, makes a good figure every way in its appearance, even at a distance'.⁷³ Surely, if Defoe had encountered significantly more dirt and rubbish on York's streets than he had noticed in the very many other towns and cities which he had visited, he would have stated that in this

⁷¹ R. Blome, *Britannia* (London, 1673), p. 23.

⁷² C. Morris, (ed.), *The Journeys of Celia Fiennes* (London, 1947), p. 76.

⁷³ P. Rogers, (ed.), *A Tour through the Whole Island of Great Britain* (London, 1971), p. 523.

description. After all, his *A Tour* makes reference to dirty streets in many other urban settlements across Britain.

William Camden went as far as to call it ‘pleasant’ and John Taylor called it ‘faire’, while Richard Blome called it ‘fair, large and beautiful’. Celia Fiennes writes negatively about the city, but she comments not on insanitary conditions, but rather on the ‘mean’ appearance of the housing and, albeit writing at the beginning of the eighteenth century, Daniel Defoe was impressed by York’s size, describing it as ‘magnificent’, making a ‘good figure in every way in its appearance’. This contrasts with the commentaries made about Edinburgh at the same time, which can perhaps be attributed to the fact that York’s travel literature tends to have been written by natives whereas Edinburgh’s was penned by foreigners more so than a real marked difference between the levels of cleanliness of the urban landscape in the respective cities. Palliser accounts for contemporaries’ observations of the ‘beauty and not the squalor’ of York by suggesting that they took the squalor for granted and therefore did not consider it noteworthy.⁷⁴ However, contemporary observers very often took the trouble to note the squalor which they observed in many other towns and cities across Britain at this time, not least in relation to Edinburgh. This suggests that the perceived cleanliness or dirtiness of a town’s or city’s streets was indeed something that observers and travellers cared about, thought was important and certainly would have taken the time to include in their descriptions, had it been shockingly, offensively or unusually insanitary. The absence of squalor in the descriptions of York, therefore, suggests that it is highly likely that York boasted a relatively, or perhaps merely tolerably, clean and pleasant townscape at this time, at least in the major thoroughfares through which visitors would have travelled.

Methodology and Sources

⁷⁴ Palliser, *York*, p. 38.

The main task of the thesis is to uncover and evaluate contemporary attitudes towards sanitation and environmental regulation, both of typical inhabitants and of local and national governors. It also aims to shed light on the complex relationship between how local governors organised street cleaning, managed waste disposal and regulated the cleanliness of the macro-scale outdoor environment, and how typical urban inhabitants self-regulated micro-scale outdoor public spaces in their own neighbourhoods. The thesis tracks the ways in which respective urban waste disposal and sanitation systems and processes were undermined, adapted and improved over time, as inner Edinburgh's population swelled from around 12,500 in 1560 to between 27,000 and 30,000 by 1700 while that of York remained relatively stagnant, fluctuating between 8,500 and 13,500 over the course of the whole period.⁷⁵ Chronologically, the thesis is purposely post-reformation in both Scotland and England, in order to make any relevant comparisons in relation to religion simpler, which necessitated using a starting point of 1560. It continues up to 1700, which permits analysis of the post-Restoration period. The period 1560 to 1700 was chosen in order to provide a sufficiently long period during which relevant long-term patterns could be discerned, analysed and explained. Fourteen decades is a long enough period during which to track long-term continuities and discontinuities in waste disposal and street cleaning processes and systems and sufficiently short enough to allow in-depth analysis of the extant council minutes and court records without having to resort to sampling. It would have been useful to continue the research well into the eighteenth century, but that would have been beyond the scope of this thesis.

Choosing the end date of 1700 permitted sufficiently deep, exhaustive analysis of the relevant extant council minutes and records of court presentments for insanitary nuisances

⁷⁵ Dingwall, *Late Seventeenth-Century Edinburgh*, pp. 13, 16-21; W. Makey, 'Edinburgh in Mid-seventeenth Century' in M. Lynch, (ed.), *The Early Modern Town in Scotland* (London, 1987), p. 205; C. Galley, *The Demography of Early Modern Towns: York in the Sixteenth and Seventeenth Centuries* (Liverpool, 1998), pp. 43-45.

available in the surviving archives of both Edinburgh and York. Although in relation to both Edinburgh and York, only the council minutes, bylaws and records of court presentments pertaining to environmental regulation and waste disposal have been transcribed, analysed and included in the thesis, and all other areas of urban management have been purposely excluded from the study, in all cases the selection of extracts which do pertain to that particular area of urban management has been exhaustive. Each and every relevant section from the extant volumes of Edinburgh Town Council minutes and York House minutes has been transcribed, analysed and included in the data sets presented in the tables and charts in the thesis. Similarly, all neighbourhood cases pertaining to insanitary nuisances, which were recorded in the extant volumes of Edinburgh Dean of Guild Court minutes have been transcribed, analysed and included in the data sets presented below. Detailed minutes of the presentments for insanitary nuisances, exacted by the various courts which regulated the environment, in York have not survived. However, all 61 extant complete lists of court presentments which were recorded in the Chamberlains' Accounts between 1560 and 1700 have been consulted and all of the presentments for insanitary nuisances within those lists have been transcribed, analysed and included in the data presented in the thesis. While only a proportion of the relevant material which was transcribed has been quoted and analysed qualitatively, the data sets presented in the tables and charts are exhaustive in terms of the relevant, extant material available for both cities. No statistical sampling was conducted in any of the archival research for this thesis.

The thesis draws from a combination of statistical and anecdotal, quantitative and qualitative, evidence. Inevitably, almost all of the sources from which the thesis draws were written within governmental or legal institutions. The detailed minutes of the insanitary nuisance disputes which were submitted to Edinburgh's Dean of Guild Court permit a valuable and rare insight into a minority of inhabitants' perspectives, containing many insightful glimpses of contemporaries' relationships with their micro-scale environment,

albeit through the medium of scribes' formulaic and sometimes ambiguous language. Moreover, the minutes of Edinburgh Council's and York Corporation's meetings contain lots of insightful details. Throughout the thesis, close attention will also be paid to the many resourceful ways in which inhabitants used their own initiative to self-regulate and improve the micro-scale environment of their neighbourhoods themselves. Indeed the main argument of the thesis is that, far from waiting idly and passively for local and national governing institutions to take action to improve the outdoor environment on their behalves, urban neighbours in both York and Edinburgh, and in England and Scotland, very often used their own initiative to pursue and maintain their own standard of outdoor cleanliness in the outdoor public spaces with which they were intimately familiar.

A comparative methodology was chosen because while an in-depth case study of one city would have been useful and revealing in its own right, it would have provided merely one piece of a complex jigsaw to the overall topic of British public hygiene. Such a case study, however deep and comprehensive, would have failed to ascertain, explore fully and compare how this area of local government was managed in urban settlements of different sizes, geographical locations, populations, architectural styles, nationalities, administrative frameworks and political contexts. Originally, the intention was to conduct a comparison between twelve towns and cities, including Edinburgh and York, across lowland Scotland and northern England. The original twelve case study towns (Edinburgh, Inverness, Stirling, Ayr, Perth, Hawick, York, Scarborough, Whitehaven, Carlisle, Berwick and Sheffield) were chosen specifically because they represented a wide and diverse range of different characteristics. They had different administrative, governmental and legal systems, functions, topographies, demographics, sizes, geographical locations, economies and architectural traditions, which all shaped environmental regulation to some degree in each urban settlement. The case study towns were selected specifically to include towns which had easy access to rivers and those which did not; English towns which were governed by corporations

and manorial governments; Scottish burghs of barony and royal burghs; towns which functioned as ports and major market centres and those which did not; towns which were still heavily involved in agricultural activity and those which were becoming less involved in agriculture; coastal and landlocked towns; national and regional centres and less nationally significant settlements; towns which boasted large and increasing populations and those whose populations remained stagnant or decreased; towns with significant fish-trade activity and towns which were heavily involved in skinner trades; densely populated towns with high, multi-story buildings and those with sparser populations spread over larger areas with more open spaces; and English and Scottish towns whose markedly different legal, governmental and administrative systems had evolved separately over centuries.

Subsequently, at quite an early stage, the thesis was narrowed in coverage to enable a deeper comparative analysis of Edinburgh and York, at the expense of the remaining ten smaller towns, which were marginalised in the study. Edinburgh and York were retained because they had relatively large volumes of surviving source material, which was largely continuous, and which permitted deep comparative analysis over fourteen decades, which would not have been possible over the whole period if any other two towns from the original twelve had been chosen to be studied exhaustively. Moreover, Edinburgh and York functioned in different circumstances and under markedly different governmental, legal and administrative frameworks which facilitated detailed discussion of how far factors such as access to rivers, demography, topography, geographical size, architectural tradition and nationality shaped environmental regulation. Edinburgh and York are well suited for comparative analysis precisely because they are so different: Edinburgh experienced rapid population increase while York's population remained stagnant; York's topography was reasonably flat whereas Edinburgh featured very steep gradients; York covered a larger area than Edinburgh and consequently had more open space; Edinburgh had significantly higher residential buildings than York; the two cities were governed by nationally different

administrative, legal and governmental structures which had evolved separately over centuries; Edinburgh was the seat of national government whereas York was not; and Edinburgh lacked access to a river whereas York's inhabitants had access to the River Ouse and the River Fosse.

The insights from the smaller settlements, it is hoped, still make an important contribution to the main argument of the thesis, even if they do not form the central focus of it. The smaller Scottish and northern English towns will still be compared, albeit marginally, both to each other and to Edinburgh and York in order to permit deeper analysis and greater understanding of how sanitation systems functioned under smaller and larger urban councils above and below the Anglo-Scottish border. The MA dissertation out of which this thesis grew provided an in-depth analysis of one small urban settlement in its own right, seventeenth-century Carlisle.⁷⁶ The purpose of this thesis is to compare two much larger settlements situated in very different locations and functioning in markedly different circumstances. A comparative methodology enables close analysis of: the complex relationship between demographic change and efforts to improve the environment; how a city's architectural building tradition and geographical topography shaped drainage, and the regulation of that drainage; the differences between environmental regulation in an English and Scottish administrative, governmental and legal framework; and how far the influence of Crown and parliament in a city shaped matters relating to sanitation. While all of these issues and factors which influenced sanitation would have been taken into account and analysed in depth in a single-city case study, the conclusions would not have been definitive because there would be little against which to compare and contextualise that city's story due to the lack of historical research undertaken so far in this field. The decision to present Edinburgh and York as parallel case studies, albeit within thematic chapters, rather than meshing the

⁷⁶ L. Skelton, 'Beadles, Dughills and Noisome Excrements: Regulating the Environment in Seventeenth-Century Carlisle', unpubl. MA dissertation, Durham University, 2008.

case studies together more closely, was taken to ensure that the material from the respective cities could be considered in its own right, in relation to the city within which it was produced and in its own particular context as well as in comparison to the other case study.

Chapter 2

The Character of the Environmental Challenge in the Early Modern Urban Landscape

Introduction

The head of Sowtergate from the queens stables to the Rampier lieth most filthy by reason of the dunghills lieing there w[hi]ch is a shame to see as though it were a cuntry towne to the great annoyance of men going to the walls in an alarm in the night.⁷⁷

Berwick-Upon-Tweed street inspection: Sowtergate from the Rampart to the Marketplace (Michaelmas, 1598).

As the above extract demonstrates, early modern contemporaries made a clear distinction between urban and rural settlements, even urban and rural ‘towns’. In this case, the former was perceived as typically cleaner, certainly featuring less agricultural dung on its streets, than the latter. The Berwick Bailiff who wrote this document perceived the town as unambiguously urban in character and feared the negative connotations and the ‘shame’ of Berwick being perceived as a mere ‘cuntry towne’.⁷⁸ As early as 1598, this call to curtail the presence of dunghills in the urban landscape was an attempt to regulate the environment’s cleanliness in order to preserve, or perhaps even to create, Berwick’s urbanity. In this period, the cleanliness of the outdoor, urban environment was integral to the perceived civility and urbanity of a town or city. Indeed, it was often the desire to enhance visitors’ perceptions of an urban settlement, rather than inhabitants’ wellbeing and life quality, which inspired and motivated local governors to initiate improvements in outdoor sanitation.

In the sixteenth and seventeenth centuries, managing the disposal of waste and regulating insanitary nuisances was, of course, crucial on a practical level to successful cohabitation in densely populated, urban settlements. But early modern urban governors

⁷⁷ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601, Michaelmas, 1598.

⁷⁸ See L. Skelton, ‘Urban Identity in Late Sixteenth-Century Berwick-on-Tweed’, in A. Green and B. Crosbie, (eds.), *Beyond Coal: The Economy and Culture of North-East England, 1500-1800* (forthcoming, 2013).

faced distinctly different, and arguably larger, environmental challenges than those faced by town councils today. Malodours emanating from soap-boiling, slaughterhouses, candle-making, tanners' and dyers' vats, open sewers, dunghills, stables and pig sties characterised pre-modern, urban streets. Early modern towns and cities lacked flushing toilets and comprehensive, subterranean sewers; waste disposal was largely householders' responsibility; and a substantial proportion of inhabitants were engaged in some form of agriculture in their backlands. Indeed, not a few contemporaries were engaged in a combination of domestic, industrial and agricultural activities in the same neighbourhoods, streets and even within the bounds of one property. Craftsmen's workshops were commonly situated above, below or behind their homes, and small agricultural outbuildings, such as pig sties, hen houses or stables, were erected on backlands.⁷⁹ Some Aberdonians even shared their homes with their livestock.⁸⁰

Urban dwellers relied on their landward counterparts for some foodstuffs, and, as important market centres, towns provided their rural hinterlands with a variable degree of urban services. But urban centres were not exclusively manufacturing settlements, which exchanged urban wares for rurally-grown food, as some later became. It is important to remain mindful that early modern urban landscapes differed markedly from those of the industrial epoch. In the period 1560 to 1700, they were largely tripartite patchworks of residential, industrial and agricultural buildings. One must try to consider the sources of urban dirt within such aesthetically and practically chaotic scenes.

This chapter is split into several sections. The first explains the sources and disposal of domestic waste, how the drainage systems for liquid waste functioned and how such

⁷⁹ M. Palmer, 'The workshop: type of building or method of work?' in P. Barnwell et al., (eds.), *The Vernacular Workshop from Craft to Industry, 1400-1900* (York, 2004), pp. 2-3; P. Barnwell, 'Workshops, industrial production and the landscape' in Barnwell et al., (eds.), *The Vernacular Workshop*, p. 181.

⁸⁰ G. P. Still, 'Housing in the Two Towns', in Dennison, Ditchburn and Lynch, (eds.), *Aberdeen Before 1800*, p. 107.

systems were shaped by the built infrastructure. The second section discusses privies and chamber pots and analyses Sir John Harrington's water closet invention of 1596. The third section contextualises smell in the early modern mind in relation to health and plague. The fourth describes the sources and disposal of industrial waste; while the fifth and final section discusses urban agriculture and the urban-rural manure trade. This chapter draws from a variety of British towns, providing a wide context for the focus on Edinburgh and York.

Domestic Waste, Drainage Systems and the Built Infrastructure

Domestic waste consisted not only of human excrement and urine; it also included: dirty water from cooking, cleaning and washing; food waste and bones; hearth ashes; building waste, such as rubble and broken stones; and small amounts of non-organic material such as glass and metal. Most contemporaries recycled food waste and sold unwanted possessions, especially clothes, out of necessity, which significantly limited how much refuse was produced.⁸¹ Unwanted materials which were intended to be removed from properties were supposed to be piled on forefronts and in backlands until inhabitants transported, or paid a carrier to transport, such materials out of town, on pack horses or in horse-drawn carts to be buried in the surrounding countryside. In 1586, when Carlisle Castle was repaired at Queen Elizabeth I's expense, 7s 8d was paid each day to 'Martine bone and James Tompson for leadinge the rubbishe and broken stones from the gait house for themselfes and their nages'.⁸² There was undoubtedly a proper location, officially set aside for waste disposal, to which these men travelled. Where there was sufficient space, rubbish pits could be dug on one's own land, obviating transportation of rubbish out of town. When some building work was undertaken on Sheffield Parish Church, in 1622, for example, the Church Burgesses paid

⁸¹ B. Lemire, 'Consumerism in pre-industrial and early industrial England: the trade in second-hand clothes', *Journal of British Studies*, vol. 27 (1988), pp. 1-24.

⁸² The National Archives, E101/545/16: Scottish Marches: Accounts of repairs at Carlisle, 1577-1602, quoted in Skelton, 'Beadles, Dunghills and Noisome Excrements', p. 25.

a labourer 7d for ‘making a pitt & removing of plankes & Rubbish’; whereas in 1691, they chose instead to pay 1s 2d ‘for carriage of Rubbish’.⁸³ Perhaps, by this point, they had run out of open space in which to dig rubbish pits.

Some town councils provided rubbish dumps for inhabitants. In 1573, Berwick Council, ‘for the more comly and cleane kepinge aswell of the stretes as the walles & Rampiers of this towne’, ordered inhabitants not to,

laye or bestowe any of the compost, dust, ashes, or uncleane thinge in any [of] the stretes, or uppon the walles, neither should [they] cast any therof over the walles, but leade or carrye away the same unto suche places as was or shoulde be appointed for the bestoweinge therof wheras poles with baskettes on them have and shoulde be sett.⁸⁴

Presumably, once full, these baskets, erected on poles, which were effectively public rubbish bins, were transported out of town at the council’s expense. This system continued throughout the seventeenth century. Similarly, in Ayr, inhabitants’ muck was removed at the burgh’s expense without any effort required from householders themselves. Between 1551 and 1610, Ayr Council arranged to remove muck and rubbish to the surrounding countryside irregularly, presumably if and when it accumulated to intolerable levels or a prestigious occasion was approaching, using casual and temporary labour such as ‘the boys’ or various townsmen. The occurrence of intermittent, large-scale cleans requiring, as in 1593, 160 horses to heave the muck into the countryside on sledges, suggests that dirt was allowed to accumulate in sixteenth-century Ayr for substantial time periods. From 1611, however, Ayr Council paid particular employees annual salaries to keep the streets clear. Between 1611 and 1616 different individuals were employed for one-year periods, but between 1616 and 1624 David Hunter was employed successively for six pounds Scots annually. There is no reference to Ayr Council receiving money either from the men whom it paid to collect the

⁸³ Sheffield Archives [SA], CB/161: Sheffield Church Burgesses’ Account Book, 1574-1727.

⁸⁴ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

muck from the streets or from the farmers to whom the muck was undoubtedly sold. If Ayr Council paid an annual salary to an employee to collect the muck, one would expect that the council would then have claimed the full amount of money from the sale of that muck to local farmers. If the council received money from these transactions, they should have been recorded in the accounts, but they were not. Notably, these accounts suggest that Ayr's inhabitants yielded their valuable muck to the burgh council without receiving any recompense. There are no references to the council having bought the muck from inhabitants, but the muck removal was funded by the civic purse, which could well mean that the inhabitants exchanged the value of their muck for the cost of its removal.⁸⁵ While what happened to the muck after it left town has been lost from the written record, the system was efficient in terms of street cleanliness because after 1611, irregular public hygiene tasks disappear from the accounts.⁸⁶ Ayr's accounts reveal an unmistakable attitudinal change among the burgh councillors, who regularised civic-funded waste disposal increasingly from the sixteenth into the seventeenth century. As will be discussed in greater depth in the following chapters, this discontinuity seems to have resulted from a nationwide statute, passed by the Convention of Burghs,⁸⁷ urging all towns in Scotland to regulate waste disposal and to clean their streets more efficiently, under the threat of a relatively large fine.

In most towns, a minority of residents stored their rubbish in inappropriate areas and neglected to remove it regularly. In June 1612, for example, Perth Council ordered 'the persones ... that lies fulyie [i.e. rubbish] in the north inche [i.e. the burgh muir] to be waidit [i.e. punished]'.⁸⁸ In 1578, moreover, at Sheffield Court Leet, it was recorded that 'uxor [i.e. the wife of] Sawood, Lawrence Shemeld, Thomas harison & Robert Stanyfurth painter have

⁸⁵ See Oram, 'Waste Management', pp. 11-16 for further information regarding the legal context of dung trading.

⁸⁶ G. S. Pryde, (ed.), *Ayr Burgh Accounts, 1534-1624* (Edinburgh: Scottish Historical Society, 3rd Series, 1937).

⁸⁷ See chapter three, pp. 87-107 for more detailed information on the origins and functions of the Convention of Burghs.

⁸⁸ Perth and Kinross Archives [P&KA], B59/16/1: Acts of Town Council, 1601-1618 (09/06/1612).

laid certeine Mainor or doung in the hie stretes contrarie to a paine laid wherfore everye of them are amerced 4d'.⁸⁹ Furthermore, in 1677, Inverness Council ordered,

intimation to be make be towk [i.e. sound] of drum at the mercat cross be two hours this afternoon requiring [and] comanding all the inhabitants that have any middings & dunghills on the Kings hie way betwixt this & the milne burn sall remove the samen within fourtie eight hours under the pain of confiscation of the middings & fineing of the contraveiner at the Magistrats discretion.⁹⁰

At a Sheriff's Tourn in York, in 1667, moreover, Mr Elwicke was fined 1s 'for not Carrying away his mire at his garden'.⁹¹ That householders were presented at court for neglecting to remove their rubbish from town confirms that in most early modern British towns this task was explicitly their own responsibility.

Whereas cooking pots and dishes tended to be scoured with sand, soap and water within the home, clothes tended to be washed outside. In England, clothes were usually washed by women in large tubs of water away from the home, on riverbanks or in the streets near to wells or sewers. In 1612, for example, Darlington's inhabitants were warned under the pain of 6s 8d that 'none shall wash cloathes fish or suchlike thinges at the tubbwell to putrifie the same'.⁹² At Scarborough's Sheriffs' Tourn, in April 1631, moreover, Mr Francis Tomson was presented 'for his maide washinge clothes at the cundith [i.e. sewer]'.⁹³ And at Sheffield's Great Court Leet, in April 1609, inhabitants were warned under pain of 3s 4d,

That no person or persons shall at any time hereafter wash any clothes, calfe heads, calfe meates or ... other things within three yarde[s] of the towne head well, new hall well, Burtland well or any other common well in and about the same towne for corruptinge the said wells.⁹⁴

⁸⁹ SA, ACM/S/116: A Book of Pains and Amerciaments, Sheffield Court Leet, 1578 (03/04/1578).

⁹⁰ Highland Council Archives [HCA], BI/1/1/5: Inverness Town Council Minutes, 1662-80 (09/07/1677).

⁹¹ York City Archives [YCA], E127: Presentments, fines and amerciaments at Sheriff's Tourn on Ouse Bridge, 1585-1676 (May, 1667).

⁹² Durham County Record Office, Da/DM/5/2: Darlington Borough Book, 1612-1633.

⁹³ North Yorkshire County Record Office [NYCRO], DC/SCB/II/1: Scarborough Corporation Minute and Order Book, 1621-1649.

⁹⁴ J. Leader, (ed.), *Records of the Burgery of Sheffield, commonly called the town trust* (1897), p. 312.

While dirty water from washing dishes and cooking was usually created within, and therefore disposed of directly from, the home, sometimes from windows and doors and into open public spaces, dirty water from washing clothes was far more likely to be discarded directly into a river or an open sewer because clothes-washing was carried out away from the home. Therefore, dirty water from clothes-washing, at least, was highly unlikely to have been thrown out of windows and doors, directly into the streets.

In Scotland, clothes were washed in water-filled tubs under women's pounding feet, usually on riverbanks or near to wells or sewers. This characteristically Scottish method of washing clothes captured foreigners' attention. John Ray visited Dunbar in 1662 and noted Scottish women's 'way of washing their linen is to tuck up their coats, and tread them with their feet in a tub'.⁹⁵ This image depicts washerwomen in Dundee doing exactly that.

*Fig. 7: Washerwomen of Dundee, 1678.*⁹⁶



⁹⁵ J. Ray, *Select Remains of the Learned John Ray* (1662), in Brown, (ed.), *Early Travellers*, p. 231.

⁹⁶ 'Washerwomen of Dundee, as depicted by John Slezer in 1678', taken from J. Slezer, 'Prospect of Dundee', *Theatrum Scotiae* (1874), plate 33, by permission of Special Collections, University of Guelph Library, in E. Ewan and M. M. Meikle, (eds.), *Women in Scotland, c. 1100-1750* (East Linton, 1999), (Illustration no. 7).

Washing clothes sometimes threatened water supplies' purity. Most women washed clothes in tubs, but some did so directly in wells and rivers. In 1638 Dunfermline's councillors forbade inhabitants from 'washing of barrells [of] cloathes ... whairby the said water may be trublit'.⁹⁷ In this case, women were not banned from washing clothes in barrels, but rather from washing so close to the well that the water became contaminated. Similarly, in 1657, Lanark's councillors banned washing clothes at the 'Welgait well' and 'at the burne that the filthe goe into the burne'.⁹⁸ Here, the councillors were concerned about the purity of the well's and the burn's water. Moreover, Edinburgh's inhabitants were prohibited from washing clothes at the North Loch in 1552,⁹⁹ and, in 1668, Inverness's councillors, 'considering the great abuse and prejudice the inhabitants ... [were] daylie susteaneing be the washers of cloath,' banned washing clothes at the River Ness.¹⁰⁰ Stirling's council also banned washing 'ony maner of clais [clothes] at the toune bouirn' in 1522,¹⁰¹ and reiterated this ban in 1610 with the added threat of a £5 fine and 'breking of thair [women's] tubes'¹⁰²; a woman's washing tub was no mean possession. The practice of washing clothes directly in communal sources of water was objectionable to both the community and the authorities because they were motivated to protect water against pollution to ensure that supplies of drinking water did not become dangerous. Notably, Inverness's and Stirling's rivers were not sources of drinking water, but the local governors still prohibited inhabitants from corrupting them with perceived harmful waste materials. In plague years, textiles and furniture were cleaned in running water because contemporaries across Britain recognised running water's purifying effects. It is not obvious from the documents why contamination of these two rivers was regulated, but generating income from fines and protecting the burghs' sources of running water, which they recognised as pure, are potentially motivating factors.

⁹⁷ *Dunfermline Recs.*, p. 186 (20/12/1638).

⁹⁸ *Lanark Recs.*, p. 160 (28/04/1657).

⁹⁹ *Edin. Recs.*, vol. 2, p. 165 (06/07/1552).

¹⁰⁰ *Inverness Recs.*, vol. 2, p. 234 (26/05/1668).

¹⁰¹ *Stirling Recs.*, vol. 1, p. 17 (27/10/1522).

¹⁰² *Ibid.*, p. 124 (30/04/1610).

Waste liquids, such as dirty water from domestic cooking and cleaning, butchery blood and urine, were supposed to be carefully deposited into a local drainage channel. Where they existed, they were usually shared by at least two properties. These channels were known as watergaits, watercourses, conduits and channels when they were open ditches and as syvers or sewers when they were covered or they ran underneath buildings. Grooves carved into stone paving slabs in yards and in front of buildings, specifically to aid and direct the drainage paths of rainwater, were known as run channels. Civic employees were often paid to maintain primary drains which served entire streets and wards. In Perth, for example, David Thompson was paid an annual salary to scour a particular sewer: on 6th June 1631, Perth Council recorded ‘Item david Thomsone for redding [i.e. cleaning] of the watergang beneath Tullitoun wherefoir he gettis 33 li 9d [Scots] from the town yeirlie’.¹⁰³ Sheffield Burgery had a similar arrangement, noting in the town accounts of 1688, ‘then agreed by the Trustees present that John Webster shall have allowed him 30s for money laid out for scoureing and repering the Truelove gutter’.¹⁰⁴ Furthermore, in 1606, Berwick Council paid 3s 6d to ‘Edward Morton and to the Plumers boy and to women which wear gott in to make cleane the diches for the pasage of the water att severall times’.¹⁰⁵ In Midsummer 1634, York Corporation paid 7d ‘for dressing the Gutters’;¹⁰⁶ and, at the Sheriff’s Tourn in Scarborough, in October 1640, the town Chamberlain was apprehended for neglecting his civic responsibility to arrange and fund the maintenance of ‘one sinke or comon watter suer nere ajoininge to Mr John Herysons noysome to the kings people’.¹⁰⁷ In 1682, moreover, Sheffield Burgery paid 6d for ‘mending the Truelove gutter with Lime and sand’.¹⁰⁸ And, in 1671, Stirling Burgh Council ordered,

¹⁰³ P&KA, B59/16/2: Acts of Town Council, 1618-1635.

¹⁰⁴ Leader, (ed.), *Records of Sheffield*, p. 242.

¹⁰⁵ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

¹⁰⁶ YCA, C21: York Chamberlains’ Accounts, 1633-1634.

¹⁰⁷ NYCRO, DC/SCB/II/1/: Scarborough Corporation Minute and Order Book, 1621-1649 (03/10/1640).

¹⁰⁸ Leader, (ed.), *Records of Sheffield*, p. 219.

that the hoill ... wherthrow the said gutter runs presentlie be built upe with stone & lime and a ... breastwark of stone be built therat for stopping the current of the said gutter and that a syver [i.e. sewer] be made therat throw beneath the calsey to convoy the same to the meikle dub [i.e. cess pit into which the burgh's sewers drained] And that the said syver ... be mendit at the mouth and an Iron grait put theron as was of old, And to be mendit alsoe in the midle wher it is decayed and layed with flags...¹⁰⁹

A sewer did not only require investment when it was initially constructed. Substantial sums for materials and labour were required to repair and maintain it to ensure that it continued to function efficiently for the benefit of the burgh. Such sanitation infrastructures were established and maintained throughout the medieval period too, and many communal sewers which helped to drain early modern towns were originally installed under medieval corporations and councils. Nevertheless, such facilities required significant amounts of maintenance regardless of when they were initially constructed.

Similarly, Carlisle Corporation maintained a drainage system of open sewers which ran around the inside of the city walls and down the crown of the main streets to carry liquid waste and rainwater away from dwellings and businesses.¹¹⁰ Seventeenth-century Carlisle's inhabitants inherited this long-established drainage system from their medieval ancestors. H. Summerson found 'conduits' functioned 'to keep the streets clean' throughout the medieval period, having been initially introduced to the city in 1292 by Carlisle's Dominican friars, who, he found, 'were licensed in 1238 ... to bring a water conduit under or through the city walls to their house'; by 1292, the friars had successfully 'built "a gutter enclosed in stone" which carried away their refuse'.¹¹¹ Although the Dominicans were required to obtain a licence in 1238 to bring a water conduit through the city, this is unlikely to have marked the construction and installation of the drainage system itself, given that there had been a major Augustinian community attached to Carlisle Cathedral since the 1130s complete with a large-

¹⁰⁹ Stirling Archives, B66/20/5: Council Record, 1659-1680 (04/11/1671).

¹¹⁰ Skelton, 'Beadles, Dunghills and Noisome Excrements'.

¹¹¹ *Close Rolls, 1237-1242*, pp. 53-54, 227, quoted in Summerson, *Medieval Carlisle*, p. 162. He suggests that friars were 'in many places ... pioneers in the construction of drainage systems'.

scale water-flushed latrine and drainage system of its own. The need to obtain a written licence in 1238 is far more likely to have resulted from the Dominicans' late integration into the rest of the built environment and the urban infrastructure of the city around this time, at which point they had to bring water to their site through urban dwellers' private land, hence the need for a licence. W. Hutchinson's description brings seventeenth-century Carlisle's watercourses to life vividly.

...the kennels or gutters were deep trenches, and stone bridges were placed in many different parts for the convenience of passing from one side of the street to the other. These gutters were the reservoirs of all kinds of filth, which when a sudden heavy rain happened, by the stopping [of] the conduit of the bridges, inundated the streets so as to render them impassable on foot.¹¹²

The watercourses had bridges to facilitate pedestrians' clean passage. In 1628, for example, Thomas Barnefather and John Merlan were ordered to 'lye noe more dung or rubbish on the forestreete neare the bridge of Michaell Bleablocke whrebye the water may haue passage'.¹¹³

While major watercourses and sewers were maintained by most town councils, however, a substantial proportion of urban householders were responsible for scouring the section of the street watercourse which flowed before their property, especially those served by the minor channels in lanes and closes. When neighbours neglected to perform this duty, therefore, channels became blocked with sediment and they had to be prompted to scour them, as highlighted by this 1568 street inspection of Sandgate in Berwick-on-Tweed.

There is a greate slacknes in the officers that sufferithe suche a fowle and noisome Channell to Remayne so filthye all alonge Sandegate extendinge frome Bartholomew bradfurthes house down Thom[as] Jennysons.¹¹⁴

Berwick-on-Tweed street inspection: Sandegate (1568).

¹¹² Hutchinson, *Cumberland*, p. 659.

¹¹³ Carlisle Record Office [CRO], Ca3/2/8: Carlisle Court Leet Rolls.

¹¹⁴ BRO, C1/1-3: Berwick Bailiffs' Court Book, 1568-1601.

In the spring of 1670, moreover, a Subsidiary Manorial Court held in the small township of Newbottle, County Durham, fined an inhabitant 10s for blocking a sewer, noting,

We present [Robert Chilton] for altering of the Cundich which formerly went through a barne ... through which cundich all the newsencis goe, which now hee hath stopt, and hath turne it into the town street, and then into the Common burne whereby the people of the townshipp cannot take upp cleane water for the use of their familys without great danger.¹¹⁵

Presumably, numerous families complained to the court about Robert's inconsiderate actions.

In April 1609, moreover, Sheffield's Court Leet Jurors recorded 'a paine laid that Thomas Horner shall scour his ditch after Sisotfield side and keepe the water in the right course that that breake not into the laine at Uppertorpe gate before Penticost next and so to keep the same at all times' under the pain of 10s.¹¹⁶ And in January 1586, a warden presented Richard Cabot and Cristofer Waide to York's Sheriffs' Tourn for 'not skowring a water sewer in the oxe close'.¹¹⁷

Inhabitants could also be fined for deliberately blocking sewers with solid waste. At Scarborough's Sheriff's Tourn in 1623, for example, Lawrance Welbank was apprehended for 'casting his ... fish, beanes, fish gutts & flecher [i.e. butchery] shells in the gutter against Mr Baliff Thompson his garden in the street very noysom to all passers by'.¹¹⁸ A similar offence was presented at Berwick-on-Tweed's Bailiffs' Court, in 1593,

Item we finde and presente a faulte in sufferinge the water and filthe to issue downe frome Castlegate into the ditches without the newgate, for therbye the said ditche is Stuffd and gorged upp with mire and filthy gorr to the greatte annoyance of the towne.¹¹⁹

In 1655, some Glaswegians had to use stepping stones to enter their homes because 'a great abundance of red [i.e. rubbish] ... had fallin in the gutter and stoppit the current of the

¹¹⁵ Durham University Heritage Collection, MS 8/I: Subsidiary Manorial Court Records, Stockton Division, Box 7, Bundle 1, Item 5.

¹¹⁶ Leader, (ed.), *Records of Sheffield*, p. 315.

¹¹⁷ YCA, E126: Presentments, fines and americiaments at Sheriffs' Tourn on Ouse Bridge, 1585-86.

¹¹⁸ NYCRO, DC/SCB/II/1/: Corporation Minute and Order Book, 1621-1649 (14/10/1623).

¹¹⁹ BRO, C1/1-3: Berwick Bailiffs' Court Booke, 1568-1601. [Exact date unknown]

water'.¹²⁰ Glasgow council ordered the blockage to be cleared to enable clean access to buildings. And, in April 1667, Whitehaven's Court Baron threatened a fine of 3s 4d to 'William Atkinson and William Grayson or any other persons that hath laid any ashes or Rubish or any sort of durt at Mr Craisters shop ... in or neare the water course that they carrie it away before the 25th day of July next'.¹²¹

What is clear from the above extracts is that while early modern sewers were sophisticated and useful facilities, their efficiency depended on inhabitants' compliance and care not to place solid waste and rubbish into them and not to interfere with their course. Scouring secondary watercourses was invariably and unambiguously householders' responsibility. It is important to remember that the majority of householders did not have to be forced to clean their sections of private sewers; indeed, in October 1668, an inhabitant of Whitehaven approached the Court Baron to reclaim her right to do so:

Elleanor Harris widdow pleintes Ann Lawrence the wife of George Lawrence for hindring and stopping the said Elleanor to goe vnto a certaine place on the backside of her house to cleanse the gutter or conduit of water & rubbish as she was anciently accustomed, the stopping whereof is of great annoyance to the said Ellen Harris as she is ready to prove.

Ordered that Elleanor Harris have liberty to goe through the house of the said An Lawrence to cleanse the water course on the backside of her house.¹²²

This case demonstrates explicitly that public hygiene was important to inhabitants, who did not always wait for civic authorities to provide services for them, and that contemporaries were prepared to take action, bottom-up, to uphold the sanitary condition of outdoor spaces themselves.

As long as blockages did not impede their flow, which often occurred, narrow secondary channels near to dwellings directed liquid waste and rainwater into wider, primary

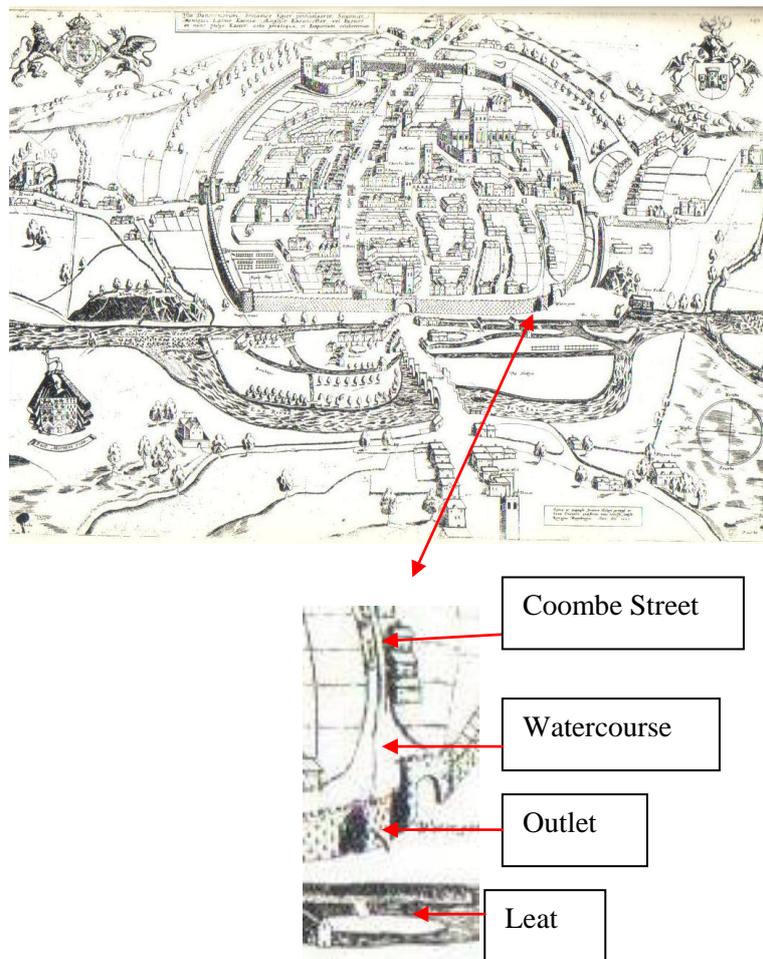
¹²⁰ *Glasgow Recs.*, vol. 2, p. 313 (05/05/1655).

¹²¹ CRO, D/Lons/W8/17/1: Manor of St. Bees Court Book, 1666-1689 (23/04/1667).

¹²² *Ibid.*, (21/10/1668).

channels running down either the crown or both sides of main causeways. That Edinburgh's High Street drains were 'very conveniently contrived on both sides of the street : soe as there is none in the middle'¹²³ impressed Sir William Brereton in 1635. Major drains then usually fed waste into rivers or the sea.¹²⁴ This depiction of contemporary Exeter demonstrates how typical urban sewers drained into proximal rivers.

Fig. 8: Exeter, (1587)¹²⁵



An open sewer can be seen flowing down the centre of Coombe Street, discharging through an opening in the wall into the leat channel, and then into the river. However, landlocked

¹²³ Brereton, *Journal*, p. 29.

¹²⁴ Harrison, 'Public Hygiene', p. 68.

¹²⁵ F. Hogenberg, *Exeter (1587)*: taken from W. Hoskins, *Two thousand years in Exeter* (Exeter, 1960), fig. IV.

towns or those which lacked convenient access to rivers directed their waste into large cess pits such as Edinburgh's North Loch or Stirling's Meikle Dub.¹²⁶

By the later seventeenth century, many main urban streets were paved. A substantial number of them had been paved since the medieval period and increasingly throughout the sixteenth century. They usually rose in the centre to aid drainage. Regarding Carlisle, W. Hutchinson noted in 1794, 'about the beginning of the present [eighteenth] century ... the streets though spacious, were paved with large stones and the centre part or causeway rose to a considerable height'.¹²⁷ In the seventeenth century, Carlisle Corporation had spent substantial sums of money repaving the city's three gates, two bridges, the market place and around the Moothall,¹²⁸ but individual householders were responsible for paving their forefronts – the area before one's property to middle of the street. Neighbours who neglected to pave their forefronts were often presented by civic officials through the local court, or as in this case below from Berwick, by means of a street inspection:

The hiestrete in Castlegate which is yet unpaved is very noysome this winter time especiallie at the upper end of the new cawsey it is growen verye deepe and almoste not passable for horse nor catle. There woulde some good waye be taken for pavinge it up throughe the street.¹²⁹

Berwick Street Inspection, (23/10/1594).

As Emily Cockayne notes, regarding London, Oxford, Bath and Manchester, 'a hotch-potch of surfaces adorned each street; one neighbour might use small pebbles, another large ones, one might use rag-stones, another broken flint-stones'.¹³⁰

¹²⁶ Makey, 'Edinburgh', p. 201.

¹²⁷ Hutchinson, *Cumberland*, p. 659.

¹²⁸ CRO, Ca4/1-3: Carlisle Chamberlains' Accounts.

¹²⁹ BRO, C1/1-3: Berwick Bailiffs' Court Book, 1568-1601.

¹³⁰ Cockayne, *Hubbub*, p. 182.

*Fig. 9: An Example of Contemporary Paving in Dartmouth, Devon (1665)*¹³¹



The lanes and vennels leading off the main streets, however, were often left unpaved. According to Hutchinson, eighteenth-century Carlisle's 'lanes and avenues, even the church road, were not paved and in many places entirely covered with weeds and underwood. The streets, not often trode upon, were, in many parts of them, green with grass'.¹³² Many inhabitants lived along vennels and lanes of bare earth which were harder to clean and which became muddy during heavy rainfall. Unsurprisingly, councils and corporations tended to focus investment available for paving on the most strategically important thoroughfares which experienced the highest volumes of horse-drawn, heavy traffic, often neglecting to pave smaller vennels, which housed only a few inhabitants.

In most towns, householders were expected to keep clear, sweep and pave the area before their property to the middle of the street, known as a forefront, once weekly, usually on Saturday nights after the weekly market and before the Sabbath. In 1676, for example, the Jury of Monckward in York fined 'Widdow Walter in Girdlergate' 13d 'for nott sweepeinge

¹³¹ I am grateful to Dr. Adrian Green for permission to use his photograph.

¹³² Hutchinson, *Cumberland*, p. 659.

her doore'.¹³³ In 1578, the Sheffield Court Leet jurors threatened 'a paine that everie persoune inhabitinge within the Towne of Sheffeld shall haue the strete againste his dore where it hath bene accustomed to be paved before Michelmasse next upon the pane of everie one therin offending vjs viijd'.¹³⁴ Urban inhabitants were well aware that sweeping their forefronts was their own responsibility. By 1560, this practice was centuries old. However, there was an important difference between forefronts above and below the Anglo-Scottish border. In England, major thoroughfares were referred to as 'the King's highway' or 'the King's street'. The streets themselves were crown property and not the private property of the inhabitants, but householders were responsible for cleaning and paving their section of the thoroughfare between their house front and the crown of the street, known as a forefront. English householders were also responsible for maintaining their section of the street drain or sewer which ran either down the crown of the street or down both sides of the street in front of the properties. In Scotland, the forefront, or foreland, was an area of private property fronting the burgh plot that extended only to the edge of the *via regia* proper, which was crown property. The burgh council could make inhabitants responsible for cleaning their section of the causeway, but householders' forefronts or forelands only extended to the edge of the causeway.

While inhabitants were expected to sweep their own forefronts, civic employees were often employed to sweep public areas around wells, market places, bridges, docks, harbours and gates. In February 1579, Berwick Council allotted to a widow enough pasture on which to keep forty ewes for 'kepinge the Cawsey withoute St Marygate nowe done by widow Joweye'.¹³⁵ In Carlisle, various individuals worked on a casual, and sometimes long-term, basis to complete small-scale hygiene tasks, without liveries or contracts. In 1653-54,

¹³³ YCA, E126: Presentments, fines and americiaments at Sheriffs' Tourn on Ouse Bridge, 1585-86.

¹³⁴ SA, ACM/S/116: A Book of Pains and Amerciaments, 1578 (03/04/1578).

¹³⁵ BRO, C1/1-3: Berwick Bailiffs' Court Book, 1568-1601. All civic employees in Berwick were paid in ewes' grass through which they supplemented their income.

William Murhouse earned 8s ‘for swipping Caldew Gate’ for one year, and in 1672-73, Widow Wilson also earned 8s for doing so, but these arrangements only lasted for one-year periods.¹³⁶ Widow Elizabeth Threlkeld, however, was paid 8s to sweep Richard Gate every year between 1653 and 1660.¹³⁷ In 1660, Widow Amy Wallas took over from Widow Threlkeld, and she, too, earned 8s annually until 1673.¹³⁸ Sheffield also made such *ad hoc* payments for street cleaning, such as a payment of 4s in 1623 ‘for sweeping the Bridge and pavement att the churchgates’.¹³⁹

Some towns had a full-time street-cleaner. In Berwick, for example, a Scavenger was appointed, and paid annually every year henceforth, after this entry was made in the town book in 1568:

Their was a common Skavenger apointed for the Clenely kepinge of this towne. So as therby bothe the streates were kepte in swete and cleane order. And alsoe all the dunge filthe and ashe was caried and conveyed to suche ordinarye places at the Rampiers. ... And now by the breache and violatinge of that order the Streates ar altogether abused And heapes of Claye and filthe Lyethe in everye place of the towne. Wheirfor they thincke it were verye neadfull and requisite that the Lorde governor and Councill wolde pleas to bringe to passe that the like order for a co[m]mon Skavinger mighte be now againe appointed And to have his wadges ... And suche other Livinge and Wadges as were sufficientt for that service.¹⁴⁰

Notwithstanding the town Scavenger, however, householders were still expected to clean their forefronts. In October 1594, for example, the following complaint was recorded at the Bailiff’s Court: ‘It is a great abuse & faulte in servants that they are suffered in time of raine to swepe downe the myre & filthe from one to another for they ought everye one to clense up & lay it together w[i]thin them selves & soe to carye it awaye’.¹⁴¹ Clearly, then, having a town Scavenger did not mean that householders were excused from cleaning their forefronts.

¹³⁶ CRO, Ca4/3: Carlisle Chamberlains’ Accounts.

¹³⁷ CRO, Ca4/3: Carlisle Chamberlains’ Accounts; Ca4/139: Audit of Carlisle Chamberlains’ Accounts.

¹³⁸ CRO, Ca4/3-4: Carlisle Chamberlains’ Accounts; Ca4/139: Audit of Carlisle Chamberlains’ Accounts.

¹³⁹ Leader, (ed.), *Records of Sheffield*, p. 113.

¹⁴⁰ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

¹⁴¹ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

In Stirling, one man was awarded the contract to arrange for the removal of waste from Stirling's streets, known as the 'Gait Dichtings', for the privilege of which he paid Stirling Burgh Council £140 Scots annually. In November 1599, Stirling Council recorded: 'Gait Dichtings Set to Archibald Smith for seivin scoir pund'.¹⁴² Inhabitants could accumulate their own private dunghills on their forefronts and sell them privately, but Archibald Smith was responsible for arranging the collection of the muck and rubbish which accumulated in the public causeways, such as manure from horse traffic, muck deposited on the streets by inhabitants and dung and other materials which dropped from carts. It is unlikely that Archibald would have removed the waste himself; he would have employed others to do collect it on his behalf and then paid them for their labour. Archibald would have benefited from either applying the fertiliser to his own crops or selling the muck to local farmers for a higher price than the combined sum of buying the contract from Stirling Burgh Council and paying men to remove the muck from the streets. He could also have used some of the muck on his own land and sold the remainder to local farmers, but what happened to the muck after it left the burgh has been lost from the written record.¹⁴³

While Sheffield Burgery did not employ any street-cleaners, it did provide an ingenious mechanism to aid inhabitants' street cleaning. A small, man-made reservoir, called Barker's Pool, situated at the highest point in the west of the town, near the market place, was fitted with sluice gates which opened into each of the main streets descending from it. During dry weather, when sweeping the streets became difficult and dirt started to accumulate, these sluice gates were opened and water flowed down the streets to enable householders to sweep their forefronts. The water came down Fargate, High Street, Market Street, Water Lane and then down into the River Don.¹⁴⁴ Barker's Pool was cleaned out, kept watertight and repaired

¹⁴² Stirling Archives, B66/20/2: Council Record, 1597-1609.

¹⁴³ See Oram, 'Waste Management', pp. 11-16 for further information regarding the legal context of dung trading.

¹⁴⁴ D. Hey, *A History of Sheffield* (Lancaster, 1998), p. 57.

at the Burgery's expense throughout the period. In 1572, for example, 6d was paid 'to Thomas Creswyke for a shotle [i.e. shuttle or sluice gate] to Barkers Powle'.¹⁴⁵ And, in 1636, 1s 6d was paid 'to James Hodgson for feying [i.e. cleaning] and keeping of Barkers poole'.¹⁴⁶ This unique mechanism is an insightful example of town authorities' endeavours to keep the urban landscape clean. Perhaps it was Barker's Pool which caused The Earl of Oxford's Chaplain to comment on "the health of the place, which few towns so populous enjoy with such constancy as they do" in 1725. He also admired Barker's pool, noting the inhabitants' "opportunity of sweeping into it all their uncleanly encumbrances".¹⁴⁷

A town or city's building tradition could have a significant impact on drainage, street cleaning and waste disposal. Edinburgh featured multi-storey tenement buildings, for example. In 1679, Thomas Kirke noticed some 'seven or eight stories high'¹⁴⁸ and, by 1689, Morer had seen 'one row of buildings ... with fourteen [storeys]'.¹⁴⁹ The human waste emanating from these chronically overcrowded residential mazes was substantial. It is significant that Edinburgh's multi-story tenements had forestairs, running down exterior walls in the street rather than inside of buildings, and that forestairs could fall into a poor state of repair and became unsafe.¹⁵⁰ Indeed, as Morer confirmed, forestairs were 'so steepy, narrow and fenceless, that it requires care to go up and down for fear of falling'.¹⁵¹ This may well explain why a minority of inhabitants residing on upper floors preferred, quite logically and rationally, to throw the contents of cumbersome, heavy chamber pots out of a window or door into the street below, a practice known as 'casting over', rather than to risk injuring themselves by carrying potentially arduous chamber pots down a hazardous, exterior

¹⁴⁵ Leader, (ed.), *Records of Sheffield*, p. 27.

¹⁴⁶ *Ibid.*, p. 136.

¹⁴⁷ Quoted in Hey, *History of Sheffield*, p. 57.

¹⁴⁸ Kirke, *Modern Account*, p. 256.

¹⁴⁹ Morer, *Short Account*, p. 279.

¹⁵⁰ See pp. 186-187 for further information on the poor state of Edinburgh's forestairs.

¹⁵¹ Morer, *Short Account*, p. 279.

staircase. In 1674, for example, Lanark's council ordered inhabitants to 'keep the calsay frie of any watter comeing doun at everie one of ther heid roumes'.¹⁵²

Some properties in Edinburgh and other Scottish towns had jaw holls in their floors or walls through which dirty water, but supposedly no human waste, could be poured from inside houses directly into watercourses.¹⁵³ However, that overcrowded closes usually lacked watercourses, and that dwellings often lacked gutters and jaw holls, meant that a significant proportion of inhabitants had to make a large effort to deposit their liquid waste correctly, especially those inhabitants residing on the upper floors of multi-story tenements. This method of waste disposal was largely beholden to the compliance of householders, necessarily problematic and often became the source of contention between adjacent neighbours. James Duncanson, for example, approached Stirling's burgh court, in 1617, because his neighbour, Patrick Kinross, constructed a jaw holl through which 'water and filth' fell into Duncanson's close 'to his grete herme'; Kinross was ordered to lay drains to protect Duncanson's property from future damage.¹⁵⁴ And, in 1629, David Birrell, also of Stirling, complained that John Robertson's dirty water flowed onto his land; Stirling's burgh court ordered Robertson to divert it through his own stable instead.¹⁵⁵

In November 1671, Andrew Bands, of Perth, complained to the Burgh Council that his neighbour, Malcome Aissons, had allowed his sewer to fall into disrepair and had altered its course which was consequently harming Andrew's land. This type of neighbourhood dispute over drainage nuisances was very common and would normally have been decided by Perth's Dean of Guild Court, but it was instead decided by certain members of the Burgh Council, Baillie Robert Russell, Conveener Robert Anderson, Treasurer Christopher Russell and a

¹⁵² *Lanark Recs.*, p. 195 (15/01/1674).

¹⁵³ Harrison, 'Public Hygiene', p. 69.

¹⁵⁴ Stirling Archives, B66/16/3: Stirling Burgh Court Records (27/11/1617), quoted in Harrison, 'Public Hygiene', p. 69.

¹⁵⁵ Stirling Archives, B66/16/7: Stirling Burgh Court Minutes (03/04/1629), quoted in Harrison, 'Public Hygiene', p. 69.

Merchant councillor, John Bands, because Perth's Dean of Guild was absent from town. In a similar fashion to a Dean of Guild Court, these four men inspected the drainage nuisance itself and decided that,

for the better saiftie of the said andrew bands land and the advantage of the miln dam [that] the said gutter on the bakside of malcome aissons hous run noe farder down that way then to the corner dyke at the south cheeke of the old port at the eist end of the said hous and that the hoill in the said dyke wherthrow the said gutter runs p[rese]ntlie be built upe with stone & lime and a ... breastwark of stone be built therat for stopping the current of the sd gutter and that a syver be made therat throw beneath the calsey to convoy the same to the meikle dub...¹⁵⁶

Significantly, the repair was to be paid for at the burgh's expense, rather than at the expense of the offender, and the Treasurer released sufficient funds to cover the repairs soon after this case was decided, probably because this nuisance posed a risk to the miln dam and the dirt raw port, both of which were integral to the burgh's efficient functioning.

Early modern towns were, in King's words, 'a maze of private ditches running from shops, barns, and other buildings to the common ditches in the streets'.¹⁵⁷ This was also true of Edinburgh and York. These complex networks of open and closed, private and public, main and secondary sewers were designed to drain liquid waste and rainwater only, but they were relatively rudimentary systems which relied largely on inhabitants' efforts and compliance to ensure they flowed efficiently, and it is unsurprising that they often became blocked. The complex webs of ubiquitous main and private sewers which drained early modern British streets were undoubtedly noxious, especially in hot weather, and they only functioned effectively so long as they were not blocked with solid waste and it did not rain heavily. Moreover, sewerage networks were generally more comprehensive in larger, busier, more densely populated and more prosperous urban settlements. The evidence presented above suggests strongly that townspeople across northern England and Scotland perceived

¹⁵⁶ P&KA, B66/20/5: Council Record, 1659-1680.

¹⁵⁷ King, 'How High is too High?', p. 448.

the main street sewers into which their private ditches drained as a service provided and maintained for them at the expense of the civic purse. While a minority of inhabitants had to be prompted to maintain their own sewers and not to block those in main streets, the majority did not because they were necessarily interested in minimising their malodours. Excepting intermittent lapses and failures, these sophisticated constructions successfully drained liquid waste away from dwellings and businesses and without them early modern streets would certainly have been wetter, dirtier and more unpleasant.

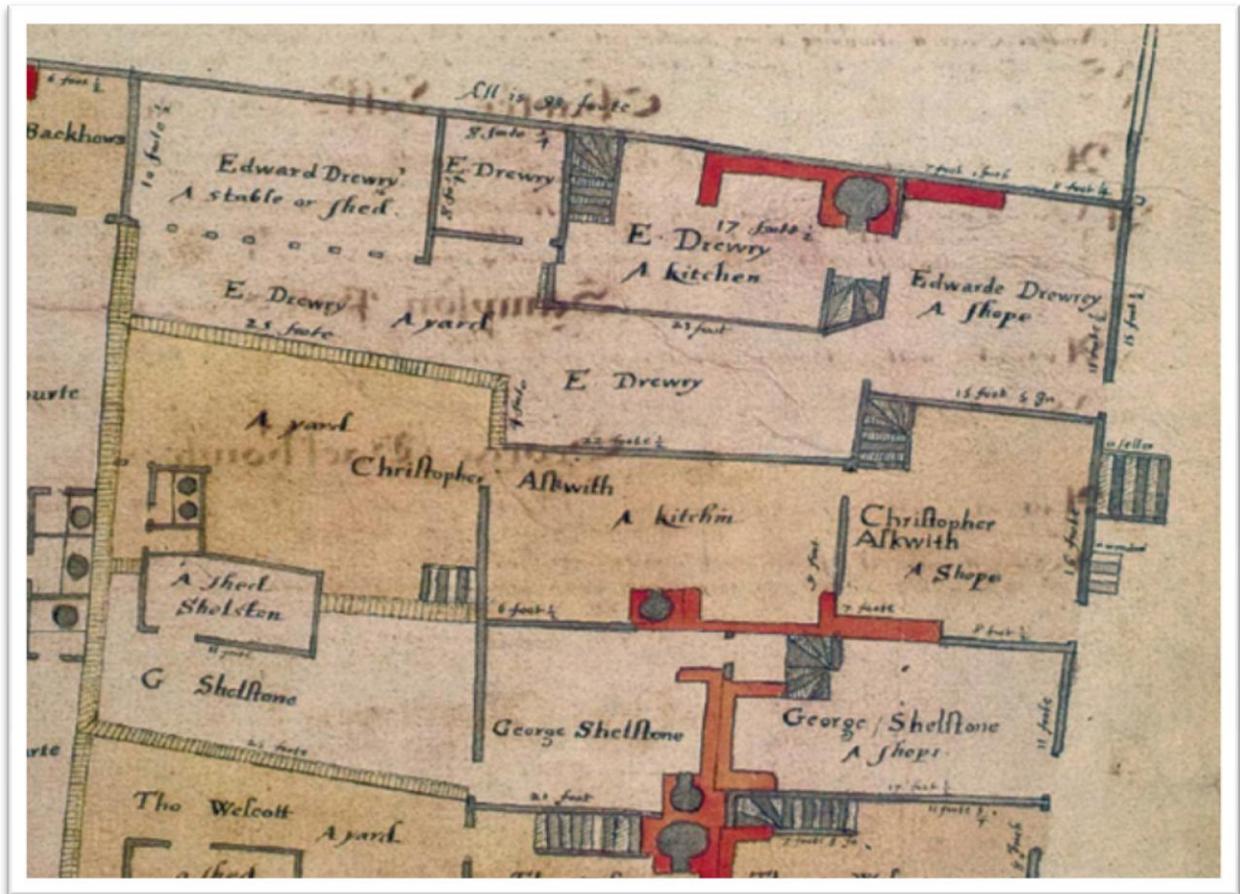
Privies, Chamber Pots and Harrington's Water Closet

Human waste is perhaps domestic waste's most obvious component. Stationary toilets were called privies, but not everyone enjoyed access to one. Most were dry privies, which were deep pits below simple wooden seats, with holes cut out of them, built as separate outbuildings in backlands.¹⁵⁸ They had to be dug out at regular intervals between which lime and sand could be used to cover the waste and thereby suppress its malodour. This 1612 survey of some houses in the West Smithfield area of London, by Ralph Treswell, a mapmaker and surveyor who created many detailed surveys of London buildings, shows the exact location of the privies, in the middle left edge of the plan, symbolised by grey holes within what are clearly seats. There were not enough privies in this particular location for each household to have had exclusive access to one each. These privies might well have been shared by several neighbours who may or may not have upheld strict informal rules governing which neighbours could access which privy.¹⁵⁹

¹⁵⁸ See M. Adams, 'Darlington Market Place: Archaeological Excavations', unpubl. archaeological report, Durham SMR, 4000, 4812, 1994, p. 24.

¹⁵⁹ Access to wells within neighbourhoods was governed in a similar way. Unless one lived nearby the marketplace, the convenience of having a well close to one's dwelling was an amenity with a cost. A complex web of goodwill agreements, leases, rents and maintenance payments dictated who could use private and street wells. Regarding early modern London, for example, Jenner argues 'access to water was mediated by the

Fig. 10: Ralph Treswell's Plan of some Houses in West Smithfield, London, (1612)¹⁶⁰



Town Councils and Corporations were not responsible for emptying householders' private privies, though they could enforce individuals to dig them out if they leaked into the streets or became offensively malodorous. A minority of inhabitants did create an insanitary nuisance by digging their privy pits out infrequently. Nuisance courts, such as The City of London's Assize of Nuisance and Edinburgh's Dean of Guild Court, sent sworn viewers to assess such complaints of nuisance in the urban environment. Their reports are full of information about privies. In February 1547, for example, the London viewers recorded 'there is a jakes whiche is a Noysaunce to the said tenement whiche is partable between the said partie defendaut

micropolitics of the neighbourhood' and 'clusters of relationships...determined who could use particular sources': see Jenner, 'From conduit community to commercial network? Water in London, 1500-1725' in P. Griffiths and M. Jenner, (eds.), *Londinopolis: Essays in the Cultural and Social History of Early Modern London* (Manchester, 2000), p. 251. This was also the case in seventeenth-century Carlisle, where particular householders accessed particular wells, to the exclusion of others.

¹⁶⁰ J. Schofield, (ed.), *The London Surveys of Ralph Treswell* (London: London Topographical Society, no. 135, 1987), p. 141.

and one Maister Norres, Gentilman usher, and oweth of righte to be clensed and repaired at the costes and Charges of bothe the said parties'.¹⁶¹ This privy was shared between two neighbours, and they were expected to work together to keep it clean. Similarly, in 1614, Alexander Bowie, of Steven Law's Close in Edinburgh, complained to the city's Dean of Guild Court that his neighbour, John Moffat, a stabler, had 'tua [i.e. two] privies' in Steven Law's Close which 'daylie breks out and ryns [i.e. runs] in the Laithe houses [i.e. basements] of his said tenement and rottis and consumes the walls thairof in the said close to his great hurt and skaith'. John was ordered to clean the privies out immediately.¹⁶²

Significantly, noisome privies seem to have been much more problematic in the summer months. In April, 1585, for example, Edinburgh Council issued a proclamation ordering that 'nane suffer their privies to gorge, brek, and rin owt in the streits in dew times'.¹⁶³ And, in 1582, Edinburgh Council passed a statute, proclaiming,

...that all persones that has scheildes [i.e. privies] clenye the same if they be full so they break furth nor run in the streets under the pain of 18s and if any open their closets in time of rain so that the filth thereof runs along the street the tenement sall be fined for an unlaw of 18s and that none hold their closets open seeping or running furth but honestly covered under the said pain as when any scheildes are clanyed that the clenyer carie the same honestly and quietly away in the night not fouling the high streets therewith and that none presume to take on hand to empty the dry schields at close heads or cast the water over the stoness upon the high streets under the pain of imprisonment of the doars thereof at the will of the magistrates and payment of an unlaw of 18s by the masters of the houses and booths so often as it is failed.¹⁶⁴

In this document, privies are referred to as 'schiolds'; indeed, contemporaries used an array of names for privies during this period, from 'closets' to 'jakes' or 'jacques', to 'houses of office', 'houses of easement', 'close stools', 'easing chairs' or 'chairs of easement'. The

¹⁶¹ J. Loengard, (ed.), *London Viewers and their Certificates, 1508-1558: Certificates of the sworn viewers of the City of London* (London, 1989), p. 206 [25/02/1547], accessed online version at: <http://www.british-history.ac.uk>, 01/02/2011.

¹⁶² ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

¹⁶³ ECA, SL1/1/7: Edinburgh Town Council Minutes, 1583-1585.

¹⁶⁴ ECA, SL1/1/6: Edinburgh Town Council Minutes, 1579-1583.

nuisance of noxious or leaking privies was relatively rare, in comparison to other insanitary nuisances, such as throwing waste onto the streets, only accounting for 1% of insanitary nuisances in seventeenth-century Carlisle, for example.¹⁶⁵ This suggests that the majority of households with dry privies had them dug out and cleaned sufficiently frequently.¹⁶⁶

Sometimes it is impossible to tell from a documentary reference whether a privy was wet or dry. The ones which were described as having ‘run out in the streets’ may well have been wet privies, with cisterns of water to flush the waste into a relatively watertight vault below or perhaps even through a pipe into a sewer or river. In the maze of Edinburgh’s multi-story tenements, neighbours’ drainage systems were often interconnected. Indoor wet privies were certainly less common than outdoor dry privy pits, but they did exist.¹⁶⁷

Some urban governments funded the maintenance of communal, public toilets, known as common houses of office or easement.¹⁶⁸ The overwhelming majority of families, however, used simple chamber pots or portable indoor commodes known as close stools.¹⁶⁹ Chamber pots, made from pewter, wood, brass, earthenware or glass, were used at night for convenience, and by those without access to a stationary privy, as well as by the elderly and infirm. Buckets and pails were surely also used by those who could not afford chamber pots. The Carlisle City Chamberlains’ accounts for the financial year 1634-35 note a payment of 1s paid ‘for a herring barrell and makeinge it new for a close stoole’.¹⁷⁰ This suggests that inhabitants, too, might have created their own facilities using inexpensive receptacles such as barrels. More elaborate chamber pots with cushioned seats, which were used upon normal chairs, were called plate jakes. Most elaborate of all was the mobile close stool, complete

¹⁶⁵ Skelton, ‘Beadles, Dunghills and Noisome Excrements’, p. 50.

¹⁶⁶ There is no evidence to confirm how often it was advised that dry privy pits should be dug out. Presumably, the frequency at which such pits were emptied depended on several variables, such as the size of the pit, the number of people using the privy and how high the temperature was.

¹⁶⁷ See pp. 182-183 for the Edinburgh Dean of Guild Court case which concerns a wet privy.

¹⁶⁸ See p. 186 for information on the construction of Edinburgh’s public privies.

¹⁶⁹ Sanderson, *A Kindly Place?*, p. 97.

¹⁷⁰ CRO, Ca4/2: Carlisle Chamberlains’ Accounts.

with a storage compartment underneath the seat and removable pans.¹⁷¹ In 1605, George Denton, gent., of Carlisle, died leaving an array of facilities including two pewter chamber pots, ‘ij plate jakes covered with cloth’ and ‘a joined easing chaier with a quisson’ worth 2s 6d.¹⁷² And John Pattinson, gent., of Paternoster Row, died in 1667 leaving ‘one close stool and pann’ worth 16s.¹⁷³ For those of less prosperous social strata than these individuals, however, buckets, chamber pots and outdoor privies were the norm. Joined easing chairs, close stools and plate jakes are more likely to have featured in relatively wealthy households.

In many pre-industrial British towns, it was not uncommon for inhabitants, especially vagrants and young children, to urinate, and even defecate, directly onto outdoor areas which offered seclusion, such as walled churchyards, derelict houses and poorly lit lanes and closes. It is highly probable that vagrants and some of the very poorest people inhabiting overcrowded and impoverished closes possessed no suitable receptacles at all.¹⁷⁴ In 1580, for example, Edinburgh Council prohibited inhabitants from ‘doing thair ease at the said close heids as is maist uncomely to be sene’.¹⁷⁵ A similar statute was passed in April 1586,

proclamioun to be maid discharging all persouns of voiding of thair filth and doing thair eases at the close heids as thai haif done in times past, under the paine of warding thair persouns and punessing of thame that may be tryet or apprehendit at the will of the magestrats and payment of ane unlaw be the maisters of the hous[es] whose servands do the sam, so often as thai failyie.¹⁷⁶

In December 1573, moreover, a proclamation was passed in Berwick-on-Tweed to remind inhabitants,

it is straightlie charged and commanded that no person childe or other shall by the filthe of his owne bodye anoye anye of the stretes lanes or walles of the same

¹⁷¹ L. Wright, *Clean and Decent: The Fascinating History of the Bathroom and the Water Closet* (London, 1960), pp. 65-79.

¹⁷² CRO, Carlisle Probate, Wills and Inventories, 1605.

¹⁷³ CRO, Carlisle, Probate, Wills and Inventories, 1667.

¹⁷⁴ A. Green, ‘Heartless and Unhomely? Dwellings of the Poor in East Anglia and North-East England’, in J. McEwan and P. Sharpe, (eds.), *Accommodating Poverty: the Housing and Living Arrangements of the English Poor, c. 1600-1850* (London, 2010), pp. 69-101.

¹⁷⁵ *Edin. Recs.*, vol. 4, p. 187 (11/11/1580).

¹⁷⁶ ECA, SL1/1/8: Edinburgh Town Council Minutes, 1585-1589.

Towne or the Churchyardes or places of assemblies uppon paine aforesaid to be inflicted either [u]ppon the partie that dothe it, or elles if it be done by an infant uppon suche as have charge over them.¹⁷⁷

Such actions were not the exclusive reserve of vagrants and children, however. In 1671 John Bold of Wigan, supposedly a gentleman, was apprehended for ‘pisseing’ in a well ‘to the great Loss & detriment of the Neiyaborhood’.¹⁷⁸ And, in June 1598, Robert Birrel, an Edinburgh Burgess, noted in his diary, ‘Robert Cathcart [was] slaine pisching att the wall in Peibleis wynd heid be W[illia]m Stewart, sone to Sr W[illia]m Stewart’.¹⁷⁹ Edinburgh Dean of Guild Court, moreover, often had to intervene to clear derelict tenements and areas of waste land when they had been used by inhabitants effectively as open cess pits known as a ‘common jacques’.¹⁸⁰

Contemporaries were capable of developing sufficient waste disposal facilities themselves because this was something which affected them every day. The common misconception that passive urban inhabitants waited idly until their governors implemented macro-scale improvements on their behalves in the nineteenth century is nonsensical. Householders used their own initiative to make their own arrangements in relation to this element of their daily routine. Contemporaries surely made many more ingenious and imaginative contraptions than those which were recorded in the documentary records. We can only learn about the converted herring barrel at Carlisle because the Corporation kept detailed Chamberlains’ accounts, whereas the majority of householders did not. While much of the history of this aspect of everyday life has unfortunately been lost, there are clues which elucidate it in many documents, especially in nuisance court cases. From grand and elaborate

¹⁷⁷ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

¹⁷⁸ Wigan Record Office (Leigh), CL/Wi-34, quoted in King, ‘How High is too High?’, p. 449

¹⁷⁹ R. Birrel, ‘The Diary of Robert Birrel, Burgess of Edinburgh, 1552-1605’, quoted in J. G. Dalyell, (ed.), *Fragments of Scottish History*, vol. 2 (Edinburgh, 1978), p. 46. Although the significant element of this reference in Birrel’s diary is that Cathcart had been killed, it does demonstrate, albeit coincidentally, that urination directly onto the street occurred in Edinburgh at this time. Notably, Cathcart was killed for political reasons and not in outrage *because* he was urinating onto the street, but it is highly likely that the fact that he was urinating enabled his killer to kill him with the element of surprise.

¹⁸⁰ ECA, SL144/1/6-9: Edinburgh Dean of Guild Court Minute Books, [05/10/1664, 22/07/1691, 19/08/1691, 20/07/1692, 28/08/1695, 17/03/1697, 04/05/1698, 14/12/1698, 26/04/1699, 10/05/1699].

contraptions, to simpler wet and dry privies, to close stools and easing chairs, right down to the pails, barrels and buckets used by the poor, contemporaries designed, built and maintained an impressive array of receptacles to facilitate the act of nature which contemporaries called ‘taking their ease’ or ‘easie’. While such technology was arguably rudimentary, the ‘chamber pot in the window’ stereotype does not do justice to the array of ingenious mechanisms which contemporaries devised for use in what was an integral part of their daily lives.

Sir John Harrington invented the first water closet, basically in its modern form, in 1596. The Elizabethan courtier and writer was Queen Elizabeth’s godson, being the son of Isabella Markham, who had served as one of Princess Elizabeth’s maids of honour at Hatfield and who had remained a member of Queen Elizabeth’s Privy Chamber until Isabella’s death in 1579.¹⁸¹

Fig. 11: Sir John Harrington, 1590-1593¹⁸²

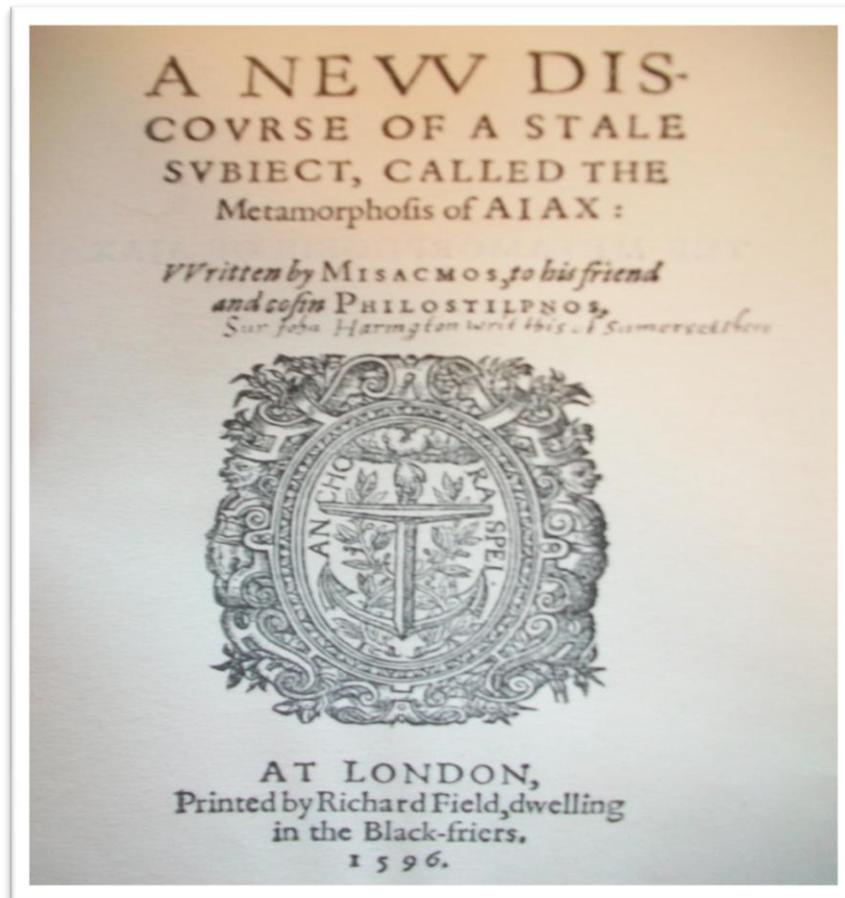


¹⁸¹ J. Scott-Warren, ‘The Privy Politics of Sir John Harrington’s *New Discourse of a Stale Subject, Called the Metamorphosis of Ajax*’, *Studies in Philology*, vol. 93, no. 4 (Autumn, 1996), pp. 412-413.

¹⁸² *Sir John Harrington, 1590-1593*, painted by Hieronimo Custodis, National Portrait Gallery, London.

In 1596, Harrington published *A New Discourse of a Stale Subject called the Metamorphosis of Ajax* as a pamphlet in which he proposed his water closet invention as the solution to the domestic waste disposal problems of the day.

Fig. 12: Title Page of *A New Discourse...*, (1596)¹⁸³



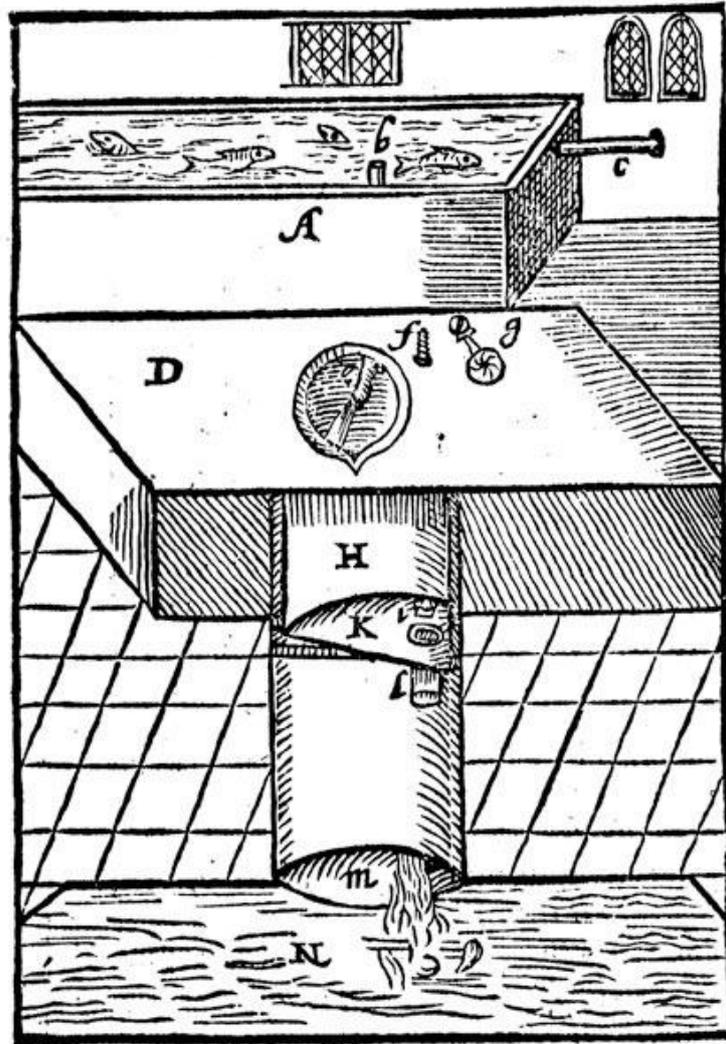
The invention originated from a conversation in the early 1590s between Harrington and several other well-connected contemporaries, including Sir Mathew Arundell and the Earl of Southampton, Henry Wriothesley, at Wardour Castle in Wiltshire.¹⁸⁴ The pamphlet consists of three parts: firstly, the *Metamorphosis Proper* in which he justifies at length why such a high-born man is talking about such low matters. He asks the reader to ‘let a publik benefit expell a private bashfulness’ and argues that discussion of such base matters is necessary for

¹⁸³ E. Donno, (ed.), *Sir John Harrington's A New Discourse of a Stale Subject, called the Metamorphosis of Ajax* (London, 1962), p. ii.

¹⁸⁴ Scott-Warren, ‘Privy Politics’, pp. 414-415.

public benefit at large, the public benefit being sweeter smelling privies. The second section, the *Anatomie of the Metamorphosed Ajax*, is a detailed description, complete with diagrams, about how to construct the water closet, where to obtain various parts and at what price.

Fig. 13: Diagram of the Water Closet Invention¹⁸⁵



Basically, it was a flushing mechanism with a cistern, which automatically stopped the running water after the waste had exited the bowl into an airtight storage vat below, which then had to be emptied. Thirdly, an *Apologie* offers further justification for his public discussion of such a foul subject in the form of a court case in which he is charged with writing about low-born matters.

¹⁸⁵ Donno, (ed.), *A New Discourse*, p. 196.

Though Harrington published under the name Miscasmos, meaning ‘hater of filth’, allegedly as a series of letters between Miscasmos and his cousin and friend, Philostilpnos, meaning ‘lover of cleanliness’, Harrington’s authorship is undoubted and he does actually sign off the last section in his own name. The word ‘Ajax’ refers to a common contemporary word for a toilet or chamber pot, jaques or jakes, and the title was designed to depict a metamorphosis, i.e. the cleaning out, of early modern privies themselves. In his pamphlet, Harrington personifies Ajax as an individual who must be improved:

Sometimes with the heate of his breath he will be readie to overcome a strong man; another time he will take a weake man at the vauntage, and strike him behind with such a cold, that he shalbe the worse for it a moneth after [which is a reference to draughtly guard robes]. Now many have wrastled with him, to seeke to stop his breath and never maime him but he makes them glad to stop their noses, and that indeed is some remedie, for such whose throats have a better swallow, then their heads have capacitie. As some men that are forced at sea to drinke stinking puddle water, do winke and close their nostrils, that they may not offend three sences at once. Now againe, some arme them selves against A JAX with perfumes, but that me thinke doubles the grieffe, to imagine what a good smell this were, if the other were away ...¹⁸⁶

Harrington then goes on to explain how integral good sanitation is to the commonweal, by likening it to competent military defence against inundation.

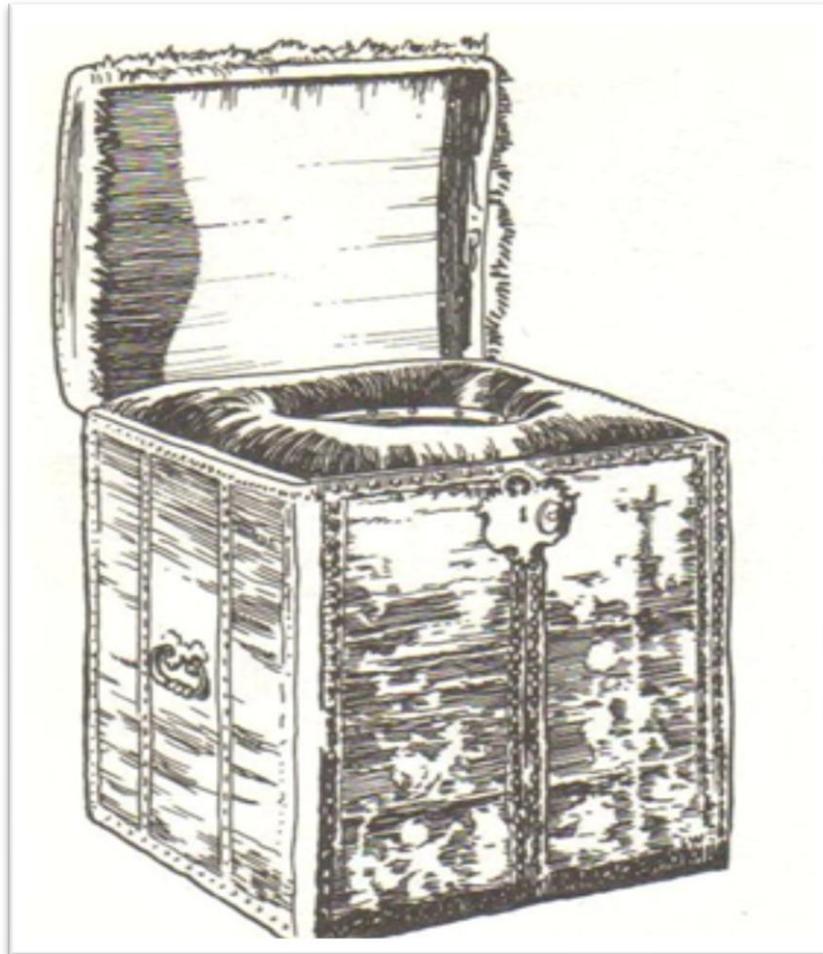
And as in all other things, so by all liklihood in this we now treat of, when companies of men began first to increase, and make of families townes, and of townes cities; they quickly found not onely offence, but infection, to grow out of great concourse of people, if speciall care were not had to avoyd it. And because they could not remove houses, as they do tents, from place to place, they were driven to find the best meanes that their wits did then serve them, to cover, rather then to avoyd these annoyances: either by digging pits in the earth, or place the common houses [i.e. communal privies] over rivers; ... first they were provided for bare necessitie, ... then they came to be matters of some more cost ... & I thinke I might also lay pride to their charge: for I have seene them in cases of fugerd sattin, and velvet...¹⁸⁷

¹⁸⁶ E. Donno, (ed.), *Sir John Harrington's A New Discourse of a Stale Subject, called the Metamorphosis of Ajax* (London, 1962), pp. 78-79.

¹⁸⁷ *Ibid.*, 112-113.

Close stools were indeed sometimes covered in the rather impractical fabric of velvet, as can be seen in this example of a Hampton Court close stool.

Fig. 14: Hampton Court Close Stool, (c.1700)¹⁸⁸



Harrington's description of how to construct his proposed water closet is lengthy and detailed, but he wrote very easy-to-follow instructions, presumably for a craftsman to follow on behalf of the individual in whose house the privy was actually being installed.¹⁸⁹

¹⁸⁸ Wright, *Clean and Decent*, p. 70.

¹⁸⁹ See Appendix A, p. 230.

Fig. 15: Reconstruction of Harrington's Water Closet, on display at Stoke-On-Trent Potteries Museum¹⁹⁰



Admittedly, Harrington's invention was a court joke, which literary historian, Jason Scott-Warren, suggests might have even been designed to earn him notoriety.¹⁹¹ It certainly was a shocking and indeed base subject for someone of his social standing to have published about at the time. Moreover, the pamphlet was never very widely disseminated and it was directed towards the people of his own social stratum; it was never intended as a panacea for the entire population's domestic waste disposal problems. While Queen Elizabeth had one of

¹⁹⁰ Harrington's instructions were so easy to follow, in fact, that a life-size reconstruction has been built and is currently on display at the Stoke-On-Trent Potteries Museum. L. Skelton, Photograph of display: 'Sir John Harrington (sic.) – the first flushing loo?' at Gladstone Pottery Museum, Uttoxeter Road, Longton, Stoke-On-Trent, ST3 1PQ (Photograph taken on 15/07/2008).

¹⁹¹ Warren, 'Privy Politics', p. 437.

Harrington's water closets installed at Richmond, those at court and wider society were largely disgusted by the invention, which was generally ignored, because of its unsavoury connotations. The infrastructure of sixteenth-century towns, even in London, simply could not have coped with the much larger and more problematic volume of liquid waste which Harrington's design would have created. Dry privy pits were far more efficient in the context of pre-modern infrastructure. Indeed, it was the installation of so many flushing toilets in mid-nineteenth century London which drove the urgent need to develop a comprehensive underground sewerage network to carry the much augmented liquid waste. Nevertheless, Harrington's invention, albeit a relatively small technological step, was hugely sophisticated for its time and while sadly it did not solve the waste disposal problems of the day, this 'unsavory discourse' is significant as an insight into one man's proposed solution.

Noxious Crafts and Trades

Sixteenth- and seventeenth-century urban dwellers contended with a myriad of malodorous trades and crafts in their environment – from butchers and fishmongers, to dyers and tanners, to candle-makers and soap-boilers, to skimmers and cloth-bleachers. A rich variety of urban crafts produced a correspondingly rich assortment of malodours and waste materials. Tanners and dyers, who used urine in their production processes, created malodours in their vats and caused a nuisance by drying noxious products over walls in public places, and urban inhabitants found the smell of candlemakers melting tallow (hard animal fat) horrendous. The waste left behind at fishmongers' stalls was malodorous and repulsive and fleshers' deposition of offal in public areas continually annoyed urban dwellers. The confluence of the various smells and waste materials emanating from urban workshops must have been overwhelming, especially in the heat of summer. Urban authorities devoted a great deal of time, effort and resources into suppressing an array of malodorous nuisances in outdoor

public areas. It is clear from the wording of many recorded council discussions, statutes and by-laws that in sixteenth- and seventeenth-century towns and cities, insanitary nuisances offended inhabitants first and foremost because they were malodorous rather than because of their mere physical presence. The regulation of so-called dirty trades, such as butchery, candle-making, soap-boiling, skinning, dying and tanning was an integral part of urban government. These trades in particular produced especially noxious waste materials and their production processes tended to create olfactory offence in streets and other public spaces. But however much inhabitants disliked the pollutants of such crafts, they all needed essential products such as leather, candles and meat, and inhabitants knew that these crafts could not be expelled from urban centres entirely, though they were regulated quite rigorously. Noxious crafts and trades tended to be tolerated to a larger extent than other nuisances, such as malodorous private privies, for example, out of economic interest and the necessity of producing vital products.

In 1592, for example, Edinburgh's councillors recorded 'divers nichtbours hes havilie complenit upoun the candilmakers who, throw rinding and melting of thair tallow ... raises such vile, filthie and contagious savoures that nane may remaine in thair awin houssis'.¹⁹² That these neighbours actually felt that they could not remain in their houses suggests that they perceived candle-making's malodour less as an annoying inconvenience and more as a dangerous health risk which they felt obliged to avoid. Edinburgh Council responded to this complaint by passing a statute prohibiting candlemakers from melting tallow in 'common vinells or other places where the savour thairof may cum to the Hie gait ... or common streits'.¹⁹³ Indeed, noxious trades were often removed from densely populated town centres to more sparsely populated areas on the urban periphery to improve air quality in the most populous neighbourhoods and around important civic buildings where prestigious visitors

¹⁹² ECA, SL1/1/9: Edinburgh Town Council Minutes, 1589-1594.

¹⁹³ ECA, SL1/1/9: Edinburgh Town Council Minutes, 1589-1594.

were entertained. In 1568, for example, Carlisle City's Corporation passed the following bylaw: 'it is orderid that no tanner shall drye anye barke w[i]thin houses but onlye in the common kilnes withoute the cite upon paine of 6s 8d so often as they do the contrary'.¹⁹⁴ It is impossible to say for certain whether this bylaw was passed to reduce the risk of fire or to regulate the malodour of the bark while it dried. That in 1596, John Haithway, a tanner of Carlisle, died leaving a 'lime croke', 'bark', 'working and chipping knives' and a 'tanning vat' in the 'barkhouse' behind his dwelling house in the town, however, suggests that this bylaw might not have been enforced rigorously, if indeed he was actively using the equipment.¹⁹⁵

In October 1663, for example, Kendal's Court Leet Jurors presented and fined John Swale 3s 4d 'for setting the water which he dyes with into the streate, & it standes in a poole in the street'.¹⁹⁶ In Berwick, in 1568, moreover, the practice of washing salmon was prohibited in public places:

That their aughte no Salmon to be washed within the towne, but onely withoute the gates at the riverside:

Item they finde and present by amerciment Recorded that heretofore no freeman nor any others whiche occupied Salmon shoulde presome to washe them within the towne & neither in their houses nor in their backsides. But onely withoute the brig gate or shoregate for avoidinge of corrupte aire and other noisome diseases which good order they finde broken and not observed: wher for we pray that the saide may be putt in execution againe as heretofore it hath bene.¹⁹⁷

And similarly in October 1594, Berwick's salmon-washers were once again reminded not to wash their products in the public streets.

There is suche corruption and stinche all the sommertime in the streets by washinge of salmon in sondrye places in the towne especiallye in the Westerlane and other places issued forthe of George Ordes Rowland Bradeforthes & Davye

¹⁹⁴ CRO, Corporation of Carlisle Order Book, 1639-1654 [including an earlier insert of by-laws dated 1568], Ca2/2/1.

¹⁹⁵ CRO, Carlisle Probate Wills and Inventories, 1596.

¹⁹⁶ Kendal Record Office, [uncatalogued]: Sundry Court Leet Papers, sixteenth and seventeenth centuries.

¹⁹⁷ BRO, C1/1-3: Berwick Bailiffs' Court Book, 1568-1601.

Skelles that is verye like to poison & infect all the towne. The same hath formerlye bene presented & not amended.¹⁹⁸

The bleaching of cloth was also a nuisance in Berwick.

Item dothe finde and present that the water streame issuinge frome the well on the grenes is turned frome the customed course by the bleachinge of clothe in somer time whiche hath ... brede mires and bogges on the grenes to the grete hurte and annoyance of the dwellers there and of the whole towne alsoe.¹⁹⁹

Berwick-on-Tweed Street Inspection, The Greens (1592).

In this case it was not the bleaching of the cloth which was regarded as the nuisance, but the diversion of the watercourse by those who were conducting the bleaching. By moving the channel, the bleachers caused parts of the bleach-greens to become waterlogged, which caused wider inconvenience to the town. At Carlisle City Court Leet, in April 1597, moreover, four glovers, Warwicke Rogersonne, Richard Warwicke, Ingrame Teasdall and Robert Bradfurthe, were each fined 6d for ‘hinging of sheip skines in [the] streat’.²⁰⁰ Leather-producers needed to dry their animal skins, which had been soaked in noxious substances such as urine and dog or bird excrement, in the open air usually draped over walls or fences for long periods of time. It is highly likely, therefore, that the malodours emanating from these skins concerned inhabitants more so than their unsightly appearance. Indeed, sometime later in 1665, Carlisle Court Leet passed the following statute to regulate the city’s glovers, making particular reference to the foul smell of the skins:

(Whereas complainte is made unto us that the glovers of this Citty do frequently hang up there sheepe skins in the shambles to the greate anoyance of the neighbours ther adjacent, by ther loathsome smell and savor they have) wee order that from hence forth noe glovers hand [i.e. handle/work on] any ther but carry them to dry without the walls of this citty upon paine of every defalt – xij d²⁰¹

But the complaints continued and the glovers received a further leet order in 1668:

Wee order that noe glovers or others shall hang up any sheepe skines in the shambles to the greate anoyance of their neighbours and others by ther loathsome

¹⁹⁸ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601.

¹⁹⁹ BRO, C1/1-3: Berwick Bailiffs’ Court Book, 1568-1601, Michaelmas, 1592.

²⁰⁰ CRO, Ca/3/2/18, Ca/3/2/20: Carlisle Court Leet Rolls.

²⁰¹ CRO, Ca3/2/18: Carlisle Court Leet Rolls.

smell but that they carry the same out of the citty to dry upon paine of – xij d every defalt.²⁰²

The word ‘loathsome’ suggests that inhabitants were not simply annoyed by these malodours, as people might be today, but that they literally feared them in a much more serious manner.

While there was some zoning and town planning in urban settlements during this period, in the absence of strictly enforced zoning and town planning, industrial activities were carried out in and around inhabitants’ dwellings. While everyone needed meat, leather and candles, the waste materials and particularly the malodours emanating from noxious crafts and trades’ production processes often reduced the quality of people’s daily lives. Urban governors worked hard throughout the period to curtail the impact of such noxious trades and crafts, often by removing them to peripheral areas of town, but complaints about industrial nuisances continued throughout the period in most towns and cities.

Smell in the Early Modern Psyche

Contemporaries were hugely concerned about industrial nuisances which were malodorous because they perceived them as dangerous, potentially fatal, health risks rather than merely as annoying inconveniences. An understanding of contemporary perceptions of and reactions to insanitary nuisances in this period is ultimately flawed if the way in which urban inhabitants perceived smell is not fully appreciated. In many respects, an insanitary nuisance was defined by its smell and its smell, above any other of its characteristics, was what motivated contemporaries to suppress the nuisance. Reconstructing olfactory perception from written sources is a difficult, but by no means impossible, task. Borough court and council records are full of clues as to which features of the outdoor olfactory environment annoyed, and which features pleased, urban inhabitants. Bio-physicists have researched how the brain’s insula constantly monitors and controls physical reactions to bacteria-filled air, as perceived

²⁰² CRO, Ca3/2/20: Carlisle Court Leet Rolls.

by scent receptors, by creating a perceived ‘bad’ smell in order to motivate an individual’s withdrawal from the area in which the malodorous air is being inhaled.²⁰³ Early modern contemporaries, too, had brains complete with insulas and were therefore necessarily repelled by bacteria-filled air, which they perceived negatively. Contemporaries sought to remove insanitary or dirty features of their urban landscape, which anthropologist Mary Douglas would simply call ‘matter out of place’, because of the malodours which emanated from such nuisances, first and foremost, and only because of their unsavoury, ‘dirty’ or ‘out of place’ appearance, secondarily, though physical obstruction of thoroughfares was also an important motivating factor.²⁰⁴ While non-noxious rubbish which physically blocked streets was unacceptable, contemporaries responded to malodorous nuisances with a special sense of urgency. Indeed, their intense fears that malodours emanating from insanitary nuisances permeated their bodies and had an adverse affect on the composition of their humours fuelled their motivation to improve air quality by complaining to courts about malodorous nuisances and regulating the practice of dirty crafts and trades.

Why were urban dwellers in this period so seriously concerned about the quality, or in their words, the ‘wholesomeness’ or the ‘sweetness’, of the air which they inhaled? That contemporaries judged a place’s cleanliness by its air quality, and described the air in terms of wholesomeness, reveals that they judged air and food in a similar light. They believed that the air which they inhaled could nourish or damage their bodies as much as could the food which they ingested. Indeed, Jenner also found that Londoners ‘perceived themselves as ingesting, almost eating’ their environment, and he notes that ‘smells that we might consider simply unpleasant could be as fatal as mustard gas’ in contemporaries’ minds.²⁰⁵ Early modern people inherited such understandings from their late-medieval ancestors, among

²⁰³ S. Greenfield, *The Private Life of the Brain* (London, 2000); W. Miller, *The Anatomy of Disgust* (Cambridge, 1997).

²⁰⁴ M. Douglas, *Purity and Danger: An analysis of concept of pollution and taboo* (Abingdon, 1966), pp. 46-50, 208.

²⁰⁵ Jenner, “cleanliness and “dirt”, p. 155.

whom Christopher Woolgar found ‘there was an enduring belief in the regenerative or debilitating effects of odours’.²⁰⁶ To late-medieval people, Woolgar highlights, ‘unpleasant smells indicated danger, corruption and even death’, though he emphasises that contemporaries believed that the effects of bad smells on the body ‘varied with the humoural composition of both the odour and the person perceiving it’.²⁰⁷ In the early modern psyche, smell held a symbolic significance above and beyond mere unpleasantness. Indeed, contemporaries deemed it potentially threatening to their physical wellbeing and, understandably, sought to avoid its dangerous properties.²⁰⁸

There is much documentary evidence to suggest that contemporaries’ fears of malodours were reinforced by, and very much heightened during, plague epidemics as a result of contemporaries’ understanding of perceived miasmatic plague contagion. Modern research has now revealed that the black rats, which carried plague-infested fleas, must have flourished among the ubiquitous dirt and refuse in early modern towns. Although Sir Theodore de Mayerne, a physician, submitted a report to King Charles I in 1631 recommending the killing of rats and mice during plague epidemics, contemporaries were largely unaware of the role which rats played in spreading plague.²⁰⁹ Indeed, rats rarely featured in the archival material.²¹⁰ The earliest extant Scottish anti-plague legislation was passed in 1456 to enforce quarantine, the regulation of inhabitants’ movements and the burning of infected buildings. Subsequent legislation to combat plague epidemics tended to be passed by local burgh, non-parliamentary governing institutions due to the relatively weak

²⁰⁶ C. Woolgar, *The Senses in Late Medieval England* (London, 2006), p. 126.

²⁰⁷ *Ibid.*, p. 126.

²⁰⁸ M. Dorey, ‘Controlling Corruption: Regulating Meat Consumption as a Preventative to Plague in Seventeenth-Century London’, *Urban History*, vol. 36, no. 1 (May, 2009); K. Jillings, ‘Preventing Plague in Post-Reformation Aberdeen’, *International Review of Scottish Studies*, vol. 30 (2005), pp. 108-134; Jenner, ‘The Great Dog Massacre’; C. Mullett, ‘Plague Policy in 16th and 17th Century Scotland’, *Osiris*, vol. 9 (1950), pp. 435-456.

²⁰⁹ R. Oram, “‘It cannot be decernit quha are clean and quha are foule.’” Responses to Epidemic Disease in Sixteenth- and Seventeenth-Century Scotland’, *Renaissance and Reformation*, vol. 30, no. 4 (2006-07), p. 16; J. Shrewsbury, *A History of Bubonic Plague in the British Isles* (Cambridge, 1971).

²¹⁰ There is also a distinct lack of references to flies, as one might expect in relation to insanitary nuisances, dung and waste food material. Perhaps flies were so commonplace, that writers did not perceive them as sufficiently noteworthy.

central government.²¹¹ Comparatively, the first English anti-plague legislation dates from 1518 and subsequent plague orders included clauses regarding the removal of middings and increased cleansing of streets.

Of course, some contemporaries attributed plague contraction to God's wrath, and perceived it as a form of divine punishment from which condemned inhabitants had little, if any, means of escape. Carlisle Corporation, for example, was in no doubt that the epidemic of 1597-98 was God's doing, describing those spared from death as 'anye p[er]son to whom god has granted life ether by not contracting the sicknes though beinge in the visited's company daily, or otherwise that have had it & yet it has pleased god to spare them lyffe'.²¹² Most contemporaries understood that plague was contagious and consequently endeavoured to curtail contraction after God had initiated a plague epidemic, but public hygiene improvements were deemed useless by many as deterrents in the first place because, ultimately, in the early modern mentality, God's vengeance was insuperable.

Some urban dwellers, however, perceived malodorous nuisances as sources of potentially fatal plague miasmas. Consequently, during plague epidemics, some contemporaries cleared the streets of dunghills and refuse and swept streets and scoured sewers more frequently – in addition to lighting bonfires in the streets, wearing pomanders and burning incense in plague victims' houses to overpower miasmas. In 1568, the Aberdonian Dr. Gilbert Skeyne wrote a treatise entitled *An Brave Description of the Pest* in which he asserted 'the cause of pest in our private citie [i.e. Edinburgh] is stinkand corruption and filth, which occupyes the common stretis and gaittis', emphasising that plague 'always ... has the cause frome ... corruptioun of the air'.²¹³ However, Archibald Skeldie's book of preventatives, written almost a century later in 1645, diverges from Skeyne's tracts. Skeldie

²¹¹ Oram, 'Responses to Epidemic Disease', p. 22.

²¹² CRO, D/MH/10/7/1: Carlisle Chamberlains' Accounts, 1597-1598, p. 68.

²¹³ Dr. G. Skeyne, *Ane Breve Description of the Pest Quhair in the cavis, signis and sum speciall preseruation and cure thairof ar contenit* (1568) in W. Skene, (ed.), *Tracts by Dr. Gilbert Skeyne, medicinar to his majesty* (Edinburgh: Bann. Club, 6.111, 1860), p. 6.

admitted that hygienic, or in his words ‘humane,’ preventative measures, such as reducing ‘immediat and mediat touching’,²¹⁴ could curtail plague’s spread after a town had contracted it. But he believed, ultimately, if God decided one’s sins warranted a plague contraction, one ‘cannot be secure from the avenging hand of God in any place where they can live’.²¹⁵ He also believed that there was no better preservative than ‘true and unfeined repentance’.²¹⁶ Improving public hygiene to prevent future plague epidemics would have seemed nonsensical to someone of Skeldie’s mentality. But both Skeyne and Skeldie, like most contemporaries, agreed that once a town had contracted plague, it subsequently spread through airborne miasma clouds. Skeyne believed plague ‘alwais ... hes the cause frome the heavins or corruptioun of the air’.²¹⁷ Similarly, Skeldie called plague,

... that infection which commeth of the aire, which is polluted and corrupted, ... by the huge number of unburied carkases of men and beasts, which polluting the aire, breedeth a pestilence to such as live in those places...²¹⁸

This is why people wore sweet-smelling pomanders on clothing and lit bonfires in the streets to overpower plague-infested air. It is important, however, to bear in mind Oram’s observation that Skeyne’s work potentially overshadowed and consequently impeded the circulation of other more ‘modern’ medical texts regarding plague contagion during the early seventeenth century.²¹⁹ For example, the eradication of mice and rats as possible vehicles for the transmission of plague was ordered as early as 1647 in Aberdeen, possibly originating from De Mayerne’s report to King Charles I in 1631. Oram highlights this as ‘evidence for the circulation of ideas relating to epidemics, plague prevention and cures within academic and other intellectual circles that is otherwise invisible in the literary record’.²²⁰

²¹⁴ A. Skeldie, *The Only sure Preservative against the Plague of Pestilence* (Edinburgh, 1645), p. 5.

²¹⁵ *Ibid.*, p. 3.

²¹⁶ *Ibid.*, p. 29.

²¹⁷ Skeyne, *Breve Description*, p. 5.

²¹⁸ Skeldie, *Preservative against Plague*, p. 10

²¹⁹ Oram, ‘Responses to Epidemic Disease’, p. 16.

²²⁰ *Ibid.*, p. 16.

Local governors clearly linked the phenomena of malodour and infection, or plague, in their minds. In October, 1585, for example, Edinburgh's councillors declared,

Finding that the middings, muck, and filth in the common closes, venells, old walls, and other places out of houses and suchlike ... lying in the said places, is dangerous and an occasion of infection, therefore ordain the baillies or quarter masters to pay such persons as will clenye and remove the said rubbish.²²¹

These examples reveal that an unambiguous link existed in contemporaries' minds between malodorous nuisances and plague contagion. This explains why contemporaries perceived such noxious nuisances as dangerous rather than as merely annoying. Regarding sixteenth-century Aberdeen, moreover, Patricia Dennison notes that there was a 'long established' and 'widely-held notion' that plague was spread through a 'miasma of noxious air that adhered to infected people and the things and spaces around them' and she highlights the 'association of stinking dung-heaps and middens with infection'.²²² Similarly, regarding sixteenth-century Venice, Jo Wheeler emphasises 'an analysis of contemporary perceptions of stench is essential to understanding the increasing regulation of the urban experience in the sixteenth century' because 'in [contemporary] medical theory ... stench was equated with disease'.²²³ She even goes as far as to suggest that to sixteenth-century Venetians, the air 'literally reeked of death' during plague visitations.²²⁴ At such times, malodours were neither merely unpleasant nor unwholesome, but they actually threatened death. It is difficult to comprehend just how terrifying this was, but it explains the logic of removing malodorous nuisances, lighting bonfires in the streets, wearing pomanders and burning incense in plague victims' houses. Jenner concludes that in the sixteenth and early seventeenth centuries, 'the idea of cleanliness was bound up with that of sweetness' when people were principally concerned about the malodours of noxious trades, refuse and human waste. After the 1660s, however, by which time the threat of plague had passed, he argues that London's authorities became more

²²¹ ECA, SL1/1/7: Edinburgh Town Council Minutes, 1583-1585.

²²² E. P. Dennison, G. Desbrisay and H. Lesley Diack, 'Health in the Two Towns', in E. P. Dennison, D. Ditchburn and M. Lynch, (eds.), *Aberdeen Before 1800. A New History* (East Linton, 2002), p. 73.

²²³ Wheeler, 'Stench in Venice', p. 25.

²²⁴ *Ibid.*, p. 27.

concerned about keeping thoroughfares physically passable and less concerned about air quality. He calls this ‘the shift in concern from corruption to obstruction’.²²⁵ Improving public hygiene to improve air quality was the right action for the wrong reasons, but contemporaries’ conception of plague contagion explains why contemporaries were so afraid of malodours, certainly to a greater extent in the sixteenth and early seventeenth centuries, though intense fears of malodours did continue after 1660, perhaps not in London, but certainly in northern English and Scottish towns, as the thesis will demonstrate.

Urban governors and the majority of urban inhabitants respected the water in and around their townscapes, and made significant efforts to protect water purity in wells, streams, rivers and harbours. Berwick’s Bailiffs, however, seem not to have been hugely concerned about disposing of waste into the River Tweed downstream from the town and thereby into the sea, even waste material which they feared had the potential to poison water and spread plague, just as Edinburgh’s councillors did relatively little to prevent inhabitants from sweeping filth down the closes on the north side of the high street into the North Loch. Significantly more effort seems to have been made to protect the purity of water which was used for drinking and cooking, with the exception of harbours, which were quite highly regulated. Inhabitants would not have drawn their drinking water from harbours, but they were busy places which were important for trade. Harbours had the potential to become malodorous and unpleasant, and in contemporaries’ minds potentially poisonous by creating airborne miasma clouds which they believed led to plague infection, had inhabitants been permitted to dispose of their waste in and around them. Wrigley suggests that contemporaries became increasingly rational between 1650 and 1750, and that people living in pre-modern society, in the period before 1650, displayed non-rational modes of thought. While there was an increasing trend towards more rational modes of thought towards the end of the seventeenth century, irrational ideas that foul-smelling miasma clouds emanating from

²²⁵ Jenner, “cleanliness” and “dirt”, p. 155.

malodorous material could permeate the skin, thus causing disease, were present until at least 1700.²²⁶ While contemporaries went to huge lengths to protect their urban landscape, their own streets and neighbourhoods, harbours and the wells and streams from which they drew their drinking water, there were other aqueous receptacles which they used in a less careful way and regulated far less rigorously. The distinction they made was entirely logical and thus rational. With limited fiscal resources, they protected their drinking water first and foremost while disposing of their waste into other aqueous receptacles from which they did not draw drinking water.

The meanings which contemporaries attached to certain features of their urban landscape are complex and somewhat ambiguous, but it is clear that contemporaries' perception of the dirt and waste which peppered their urban landscapes was integral to the way in which the built, urban environment was experienced on a daily basis. Indeed, as Jill Steward and Alexander Cowan highlighted in their innovative study of early modern urban sensory history,

[i]n ... early modern ... cities ... the history of the senses was bound up with their material and cultural development, contributing to the way that the urban environment was experienced, understood and represented by those who inhabited it.²²⁷

Contemporaries perceived dirt and dung in a deeply symbolic way, and sometimes they used it specifically as a way of disrespecting others by signifying their immorality metaphorically. Martin Ingram found that the victims of rough ridings, who were paraded through communities sitting backwards on a horse, were 'pelted with filth' en route.²²⁸ Urban dwellers demonstrated that they found dirt offensive by throwing dung at opponents during arguments. In 1574, Glasgow's burgh court found Jonet Dunlop guilty of 'casting of dirt at

²²⁶ L. Wrigley, 'A Simple Model of London's Importance in Changing English Society and Economy, 1650-1750', *Past and Present*, vol. 37, no. 1 (1967), pp. 44-70.

²²⁷ J. Steward and A. Cowan, 'Introduction' in J. Steward and A. Cowan, (eds.), *The City and the Senses. Urban Culture since 1500* (Aldershot, 2007), p. 11.

²²⁸ M. Ingram, 'Ridings, Rough Music and the Reform of Popular Culture', *Past and Present*, vol. 105 (1984), p. 93.

hir [Agnes Martene's] windo and filing hir stuff sett thair'; Agnes must have retaliated because she was also 'fund in the wrang for casting furth of weshe [i.e. urine] at ... Jonet'.²²⁹ Moreover, in 1629, William McLay threw Duncan Thomson's infant son into Stirling's Meikle Dub (cesspit);²³⁰ Thomson was sufficiently angry to take McLay to court. These cases prove that contemporaries were deeply offended when dirt encroached upon their person; they understood throwing dung as an explicit symbol of disrespect.

In conclusion, in the context of pre-modern towns and the regulation of waste disposal and insanitary nuisances, the aspects of the environment which were regulated most rigorously, we can assume, are the ones which contemporaries cared the most about. While contemporaries lacked an in-depth understanding of the link between dirt and disease, they protected water purity in a simple, but progressive way: the right action undertaken for the wrong reasons. The way in which sixteenth- and seventeenth-century urban dwellers perceived malodours' impact on their health was neither irrational nor illogical in their minds. They might have sought to suppress malodours for what we can see with the benefit of hindsight were the wrong reasons, but it was, albeit coincidentally, the correct action. Ridding the streets of refuse, and especially of edible food waste, would have impeded rats' survival. Sixteenth- and seventeenth-century urban dwellers' intense fear of malodours, inherited from their medieval ancestors, fuelled efforts to enhance urban air quality by cleaning streets, regulating noxious trades and managing waste disposal more efficiently. Through the improvements made in municipal street cleaning systems in towns and cities across sixteenth- and seventeenth-century Europe, and through the implementation of better and more rigorously enforced hygiene by-laws, many European towns and cities became cleaner, more pleasant olfactory environments in which to live and work. In sixteenth- and seventeenth-century towns, breathing sweet-smelling air was hugely important to

²²⁹ *Glasgow Recs.*, vol. 1, p. 11, (18/05/1574).

²³⁰ Stirling Burgh Court, B66/16/7, (17/08/1629), quoted in Harrison, 'Public Hygiene', p. 68.

contemporaries because they believed it enhanced their health and wellbeing whereas they believed that evil-smelling air, conversely, would adversely affect their health at best and potentially endanger their lives at worst. It is important to remain mindful that it was contemporaries' perceived need to breathe 'sweet and clean' air in order to preserve their health, wellbeing, and sometimes even their lives, rather than aesthetic considerations, which fuelled their efforts to improve public hygiene first and foremost; and for this reason, sixteenth- and seventeenth-century urban dwellers might well have been more concerned about outdoor sanitation than are their twenty-first-century descendants today.

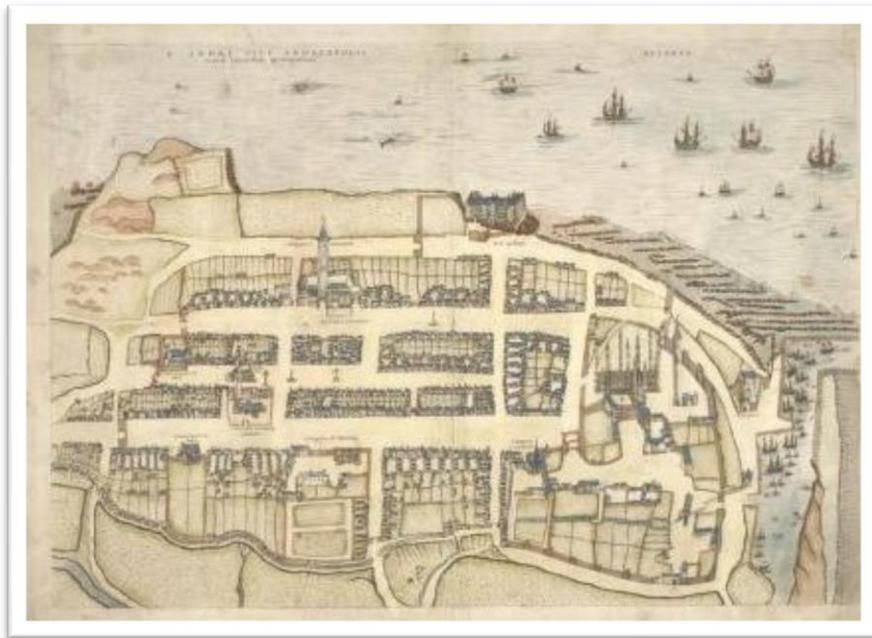
Urban Agriculture and the Urban-Rural Manure Trade

Writing in 1655, Robert Seymore noted that Dorset farmers 'use all sorts of dung indifferently for all sorts of arable land. Shovellings of streets, and highways, with straw or weeds rotted amongst it'.²³¹ For this reason, manure was a valuable resource. Large volumes of it were produced in the backlands of pre-modern towns. Townhouses often stood in front of long narrow backlands, also known as rigs or crofts in Scotland and burgage plots in England, upon which livestock could be raised, horses stabled and crops grown. They were demarcated when the medieval burghs and towns were originally planned.²³² St. Andrews' backlands can be seen clearly below.

²³¹ R. Seymore, *An Account of the Husbandry used in some parts of Dorsetshire*, Royal Agricultural Society of England, *Classified Papers*, X (Agriculture, 3), paper no. 10 (1665), quoted in L. Brunt, 'Where there's muck, there's brass: the market for manure in the industrial revolution', *Economic History Review*, vol. 60, no. 2 (2007), p. 338.

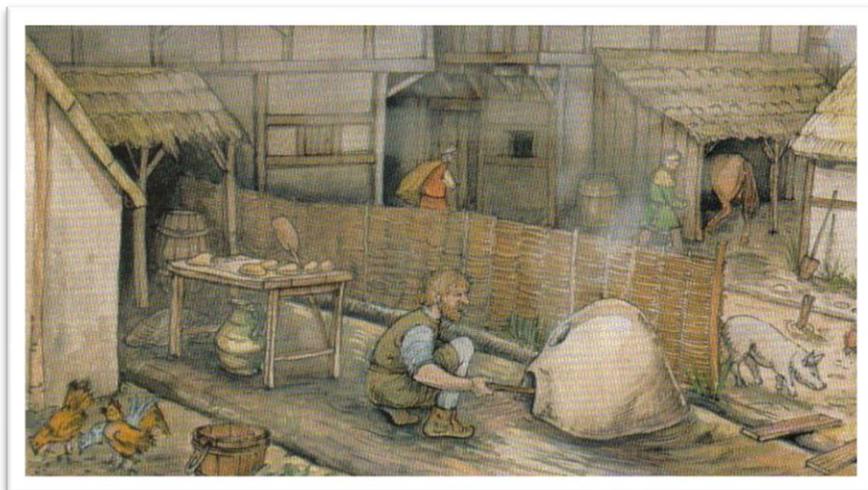
²³² E. P. Dennison, 'The Built Environment, 650-1300', in D. M. Palliser, (ed.), *The Cambridge Urban History of Britain*, vol. 1, 600-1540 (Cambridge, 2000); Palliser, 'The Origins of British Towns', in Palliser, (ed.), *The Cambridge Urban History of Britain*, vol. 1, 600-1540; Palliser, T. Slater and Dennison, 'The Topography of Towns, 600-1300', in Palliser, (ed.), *The Cambridge Urban History of Britain*, vol. 1, 600-1540.

Fig. 16: John Geddy's 'Bird's Eye View' of St. Andrews, 1580.²³³



The reconstruction in fig. 17 below of Aberdeen's medieval backlands, moreover, depicts the typical setting in which many urban dwellers were still living and working by the early modern period:

Fig. 17: Reconstruction of Aberdeen's Medieval Backlands.²³⁴



²³³ J. Geddy, *The Bird's Eye View*, (1580), originally entitled: *S. Andre sive Andreapolis Scotiae Universitas Metropolitana*, taken from The National Library of Scotland, 'Town Plans/Views, 1580-1769' at <http://www.nls.uk/maps/early/towns.cfm?id=215>. (Website accessed: 17/03/2007).

²³⁴ Taken from E. P. Dennison, D. Ditchburn and M. Lynch, (eds.), *Aberdeen Before 1800. A New History* (East Linton, 2002), Plate 12.

Hens', pigs' and horses' presence behind both residential quarters and business workshops was common to all early modern towns and cities. In addition to human, domestic and industrial waste, therefore, urban inhabitants had also to deal with substantial volumes of agricultural waste. Agricultural waste formed a large proportion of urban dirt. Though cows were primarily kept on common pastures beyond the town, townspeople also typically kept milk cows, hens for eggs, and both pigs and geese for meat, on their backlands. Moreover, burgesses usually stabled a horse for their own transportation. Therefore middings built up amongst buildings as a matter of course. That urban dwellers engaged in agriculture not only increased urban dirt's physical volume, but also created the potential for free-ranging animals to spoil inhabitants' efforts to contain such dirt:

...in the churchyard they [pigs] haue cassin up ... graves and uncoverit dead corpses ... and they ... doe converse in all the filthie dunghillis, middings, gutters and sinkes of all sorts of excrements and by their working ... spoill the streets...²³⁵

And, in 1574, Berwick's inhabitants were warned not to let geese or swine wander freely in the streets or on the ramparts.

Item that no person or persons shall kepe any swine or geese to rune abroade in the strete or upon the rampers or walles of this towne. But shalbe forfeited to any that shall take them. And that it shalbe lawfull for any mane to kill all such Curr, doges as ar found ... either barking or bawlinge which is contrarye [to] the Statute of this towne.²³⁶

It was such a serious offence because free-roaming swine or geese could deposit their own waste on the streets, eat and trample crops, rummage in sewers and charge into market stalls and dunghills, damaging goods and spreading carefully piled animal manure across the streets. In 1661, John Bushbie of Carlisle was fined 3 s for 'his swine goeing unringed in the streets ... & other places'.²³⁷ In 1668, moreover, John Broadwood, gent., also of Carlisle, was

²³⁵ *Abdn. Counc.*, vol. 4, p. 143 (09/08/1654).

²³⁶ BRO, C1/1-3: Berwick Bailiffs' Court Book, 1568-1601.

²³⁷ CRO, Ca3/2/16: Carlisle Court Leet Rolls.

fined 3s 4d ‘for his swine going in Thomas Howels garthen unringed’;²³⁸ and in 1672, Thomas Lowson, of Finkle Street, was fined 6s 8d ‘for suffereing his Barne end to ly downe soe that the swine goes through to Thomas Hewells Gardon’.²³⁹ Such offences must have annoyed Carlisle Corporation because inhabitants had been given the facility of Kingmoor complete with a herdsman specifically to avert this nuisance. Many inhabitants could not or would not take advantage of Kingmoor and stubbornly kept their swine in insecure pig pens in their backlands. Clearly, Broadwood, a gentleman, could afford to keep his swine on Kingmoor, but stubbornly chose not to, presumably for convenience. Agricultural activity, however necessary for urban inhabitants’ survival, was clearly impractical in densely populated urban settings. All towns regulated the presence of livestock to some extent.

Middings inevitably ensued from raising livestock and stabling horses on the backlands which, for many, provided essential components of familial diet and income. Expelling manure from the towns entirely would have severely endangered inhabitants’ livelihoods. Moreover, middings could be sold to local farmers as fertiliser. In 1612, Dunfermline’s burgh council ordered some stable owners to remove ‘all impure matters’ down the back road because loading manure onto carts in front of James Kinghorne’s tenement offended him.²⁴⁰ In this case, it is highly probable that these stable owners sold the manure from their stables to a local farmer and this is why it was periodically loaded onto carts in front of the tenement. Indeed, men even fought over this valuable commodity. In 1564, after having borrowed eight muck loads from James Duff, of Inverness, James Kar subsequently claimed he ‘misknew [forgot] how monye [many]’ he had borrowed.²⁴¹ This angered Duff sufficiently to approach Inverness’s burgh court to ensure he received his

²³⁸ CRO, Ca3/2/20: Carlisle Court Leet Rolls.

²³⁹ CRO, Ca3/2/22: Carlisle Court Leet Rolls.

²⁴⁰ *Dunfermline Recs.*, p. 96 (12/03/1612).

²⁴¹ *Inverness Recs.*, vol. 1, p. 117, (25/10/1564). Dung trading was regulated by legal contracts, which resulted in some court cases when dung was short measured and contracts were contravened. See Oram, ‘Waste Management’, pp. 11-16 for further information regarding the legal context of dung trading.

muck's full value.²⁴² Dunghills were an immovable fact of life for pre-industrial urban dwellers, but they were noxious if they were not properly maintained and cleared away sufficiently frequently, and their deposition had to be regulated to protect inhabitants' property and to keep streets physically passable for the purposes of trade and facilitating access to businesses and dwellings.

Manure was highly valuable in the early modern period and while dunghills were seen in a negative light when they became excessively noxious or blocked thoroughfares, it is important to remain mindful of their economic value and how important they were in the context of the integrated household economy which was not yet fully specialised, and which had largely retained its medieval pattern. Throughout the sixteenth and seventeenth centuries, many urban inhabitants across Britain took responsibility for their own manure and removed it out of town themselves to apply to their own arable land, sold it directly to a local farmer or arranged for it to be removed and sold by a middle man. Inhabitants were careful to heap solid rubbish and manure separately because the latter was a valuable fertiliser. Manure mixed up with lots of domestic and industrial rubbish would have been less desirable to local farmers, who bought urban dunghills to fertilise their arable land; though some fragments of rubbish were inevitably taken away with the manure, as revealed by modern archaeologists who recover ubiquitous fragments of early modern urban rubbish in rural fields. Dung trading between townsmen and farmers was probably negotiated verbally, perhaps when farmers came to urban markets, which would explain why they have left few traces in the written records. Townsmen who owned arable land in local manors surely used urban dunghills to improve their own arable land's fertility; others might have sold their urban dunghills to middle men, who transported them to nearby farms. In any case, arable farmers definitely

²⁴² Indeed, middings were so integral to pre-industrial life that even royal palaces featured them. John Damien, an alchemist and King James IV's friend, attempted ambitiously to fly from Stirling Castle to France in September 1507 wearing artificial wings. After having taken flight from the castle, he fell into a dunghill. N. Macdougall, *James IV* (East Linton, 1997), p. 288.

used animal and human waste which had been produced in towns as fertiliser. An East Lothian agricultural improver, Baron John Hamilton Belhaven, published a pamphlet in 1699, entitled *Advice to the Farmers in East Lothian*, in which he advised ‘If your Grounds ly within three Miles of a Burgh or Village, it is worth your pains to lead Dung all the Summer time, and lay it upon your Wheat Fauch, especially having a Cart way thereto’.²⁴³ Sir John Archer noted the application of dung on his arable land in his diary: on 5th January, 1663, he noted ‘dung spread’.²⁴⁴ Moreover, Joan Thirsk discovered that ‘farmers around Newcastle-on-Tyne ... used to cart dung from the town to their fields’ and ‘boats which carried corn and malt down River Colne and River Lea to London brought back manure on the return journey’.²⁴⁵ According to Liam Brunt, manure trading occurred ‘mainly in towns’, after which farmers ‘shipped the fertilizer back to their farms by horse and cart’; notably, he found ‘all available waste products were traded’, including human excrement.²⁴⁶

Significantly, in May 1651, the landowners around Perth sent a supplication to King Charles II, who was crowned at nearby Scone on New Year’s Day that year, complaining that the Provost of Perth, Andrew Grant, had,

infix certain stakes or posts of great timber in the midst of his majesty’s ... highway within the Castle Gavel Port of the said burgh and by an act has discharged the whole inhabitants thereof to sell refuse or muck to the supplicants, through which neither cart nor sled can have access to the said burgh ... for transporting ... muck and refuse for bettering the supplicants’ lands adjacent to the said burgh according to use and custom ... and that the buying and transporting of the said muck not only occasions the streets of the said burgh to be cleaned but also renders commodity to the inhabitants thereof, owners of the same muck.²⁴⁷

²⁴³ J. Hamilton Belhaven, Baron, *An Advice to the Farmers in East Lothian how to Labour and Improve their Ground or The Countrey-man’s Rudiments* (1699), p. 35.

²⁴⁴ Huntingdon Library, San Marino, HM MS 70160: Diary of Sir John Archer, 1663.

²⁴⁵ J. Thirsk, ‘The Farming Regions of England’ in J. Thirsk, (ed.), *The Agrarian History of England and Wales, volume IV, 1500-1640* (Cambridge, 1967), pp. 27, 52.

²⁴⁶ *Ibid.*, p. 363. Oram, ‘Waste Management’, pp. 11-16.

²⁴⁷ *Acts of the Parliament of Scotland*, Stirling, (23/05/1651). Downloaded from: www.rps.ac.uk. [Website accessed: 03/04/2009]

Evidently, there was a healthy trade in manure and refuse between Perth's inhabitants and local arable farmers. In Stirling, too, inhabitants sold their muck to landward farmers. In October 1672, Stirling Council passed a proclamation, entitled 'Act anent the Carying of fulyie [i.e. refuse] out of the Town', forbidding

the haill nighbours and others to tack any muck out of the Towne unles they ingadge themselves to bring ther haill grindable cornes growing upon the ground of lands that they carie ther fuilyie to to the townes milnes ... under the paine of five pounds scottis money'.²⁴⁸

Thereby, Stirling Council maximised its income by ensuring that farmers whose corn grew with the aid of the burgh's muck used the burgh mill, for which Stirling received a fee, to grind their corn. Muck was also transported out of Inverness to the surrounding countryside. In December 1677, Inverness Council promulgated the following act:

... considdering & finding the harme & prejudice that the bridge susteanes throw transporting & carieing of dung & muck alongest the samen, therfor the Magistrats & Counsell prohibit & discharge all the inhabitants to carie or transport any muck or dung alonges the said bridge in time comeing be any maner of way nather be cairts, slaides, whell barows or be creills on horseback under the paine of ten pundes scots toties quoties.²⁴⁹

Unfortunately, regulatory documents, references to contracts of supply, complaints of breaches of contract and the court cases arising from such instances are the only archival vestiges of the oral early modern urban-rural manure trade,²⁵⁰ but selling manure to be used as fertiliser was clearly common in this period, and it is a hugely important aspect of public hygiene in that it provided an easy means of removing manure from urban centres. As Brunt concludes, 'there was an active and sophisticated market for manure by 1770 ... despite the lack of formal scientific knowledge, farmers in 1665 ... used manure rationally and in a similar fashion to the farmers of 1840'.²⁵¹ Donald Woodward laments the severe lack of

²⁴⁸ Stirling Archives, B66/20/5: Council Record, 1659-1680 (05/01/1672).

²⁴⁹ HCA, BI/1/1/5: Inverness Town Council Minutes, 1662-1680 (17/12/1677).

²⁵⁰ Davidson, et al., 'Past urban waste disposal', pp. 778-783; Oram, 'Waste Management', pp. 1-17.

²⁵¹ Brunt, 'Where there's muck', p. 367.

farmers' and urban sellers' records, but concludes that the use of off-farm fertilisers, which often included urban waste, 'undoubtedly did rise' between 1500 and 1800.²⁵² Clearly, the presence, smell, sale and transportation of manure was integral to urban life in this period.

Conclusion

This chapter has characterised and contextualised the environmental challenges faced by pre-industrial urban governors and communities in the period 1560 to 1700, emphasising the large extent to which inhabitants were directly engaged in the day-to-day functioning of the systems and processes which managed waste disposal in urban settlements. Waste consisted of domestic, industrial and agricultural material and pre-industrial urban streets hosted a chaotic array of domestic, industrial and agricultural activities. Each town had its own unique dividing line between householders' and civic authorities' public hygiene responsibilities. Contemporaries surely understood exactly where this line lay, and the majority of inhabitants fulfilled their obligations without complaint. That most urban governments in this period did not fund regular municipal refuse and night soil collections would not have seemed unreasonable to inhabitants because they produced relatively little unusable rubbish, manure was sold easily to local farmers and contemporaries were unfamiliar with the idea of having a right to publicly-funded rubbish collections. Not every urban inhabitant wanted their urban governors to get rid of their manure as soon as possible. Many of the middling sorts whose livestock produced large volumes of manure had a vested interest in storing it on their property until they could either sell it to local farmers as fertiliser or apply it to their own arable holdings. It is possible that those urban inhabitants who were more directly involved in the production of primary foodstuffs, largely of the middling sorts, viewed manure as personal property and retained it on their properties for longer periods of time and either sold

²⁵² D. Woodward, "'An Essay on Manures': changing attitudes to fertilization in England, 1500-1800", in J. Chartres and D. Hey, (eds.), *English Rural Society, 1500-1800: Essays in Honour of Joan Thirsk* (Cambridge, 1990), p. 276.

it or used it themselves whereas those who were less directly involved in food production, largely the very rich and the very poor, may well have begun at earlier stage to view manure as an unwelcome and unsavoury waste material to be expelled from the burgh as soon as possible, preferably at the expense of the public purse.

Establishing the cultural attitudes and values of early modern people towards the cleanliness of outdoor, public spaces is the key task of this thesis. The way in which sixteenth- and seventeenth-century urban dwellers perceived malodours' impact on their health was neither irrational nor illogical in their minds. They might have sought to suppress malodours for what we can see with the benefit of hindsight were the wrong reasons, but it was, albeit coincidentally, the correct action. Ridding the streets of refuse, and especially of edible food waste, would have impeded rats' survival. Contemporaries' intense fear of malodours, inherited from their medieval ancestors, fuelled efforts to enhance urban air quality by cleaning streets, regulating noxious trades and managing waste disposal more efficiently. In sixteenth- and seventeenth-century towns, breathing sweet-smelling air was hugely important to contemporaries because they believed it enhanced their health and wellbeing whereas they believed that evil-smelling air, conversely, would adversely affect their health at best and potentially endanger their lives at worst. It is important to remain mindful that it was contemporaries' perceived need to breathe 'sweet and clean' air in order to preserve their health, wellbeing, and sometimes even their lives, rather than aesthetic considerations, which fuelled their efforts to improve public hygiene first and foremost.

Chapter 3

The Legal, Governmental and Administrative Structures of Environmental Regulation in Edinburgh and York

Introduction

Throughout the period 1560 to 1700, managing and regulating the drainage and disposal of the large amount of domestic, industrial and agricultural waste produced within the urban centres of Edinburgh and York occupied a significant proportion of the respective cities' governors' time and effort. Today, public hygiene matters are managed exclusively by separate administrative departments within large-scale and complex urban councils, but in 1560 waste disposal and street cleaning was a truly integral part of the whole, overarching system of government by which a city's 'commonweal' was maintained. In a typical weekly council meeting, drainage and waste disposal problems, such as a blocked sewer or the disposal of offal, tended to be discussed between or even alongside other urban problems, such as card-playing, begging or forestalling. This seamless system of urban government had been established and handed down by Edinburgh's and York's medieval predecessors. In Edinburgh, the original systems continued from 1560 well into the seventeenth century, until they eventually began to give way, under the pressure of population increase, to more specialised systems featuring committees and sub-councils which were appointed specifically to deal with particular urban problems, including waste disposal and street cleaning, in a much more focused manner. In York, however, where the population remained relatively stagnant, the medieval systems continued fairly similarly right up until the end of the seventeenth century, albeit with a few modifications.

The chapter begins by describing and explaining the systems which Edinburgh's and York's governors inherited in 1560, before explaining how and why these systems were

modified from decade to decade and then finally describing the very different and unprecedented systems which the cities' respective governors passed onto their eighteenth-century descendents in 1700, albeit featuring some purposely preserved continuations from the systems of 1560.

The Inherited Systems, 1560

Edinburgh

Across Scotland, burghal affairs were debated, resolved and managed by a Burgh Council of men, consisting of a Provost, two, three or four Baillies and a body of elected councillor burgesses who assembled regularly, usually once weekly, to discuss various local issues which required deliberation, as well as to renew old burgh statutes and to design and promulgate new ones. Edinburgh Council met every Friday morning in the Tolbooth on the High Street to discuss a diverse range of typically urban problems and areas of city government, from defence to gambling to forestalling, and of most importance here, issues pertaining to waste disposal, drainage and street cleaning. In addition to discussing matters which they felt needed attention, they also responded to petitions from inhabitants and sometimes mediated in disputes between neighbours. While Edinburgh Council was subservient to Scotland's national governing institutions, and sometimes had to obey direct orders regarding outdoor sanitation from the Scottish Parliament, the Privy Council of Scotland and the Convention of Burghs, for the most part it enjoyed significant autonomy over these areas of city government and it certainly exerted the most influence over the management, efficient functioning and improvement of waste disposal, drainage and street cleaning in Edinburgh throughout the period.

The Dean of Guild Courts, consisting of the Dean of the Merchant Guild and his council of various craftsmen and merchants of the Guildry, presided over mercantile issues, such as indentures and trade disputes, as the court's title suggests, but it also decided

questions of neighbourhood, such as boundary disputes, the obstruction of neighbours' window light, the safety of new or modified buildings, access rights and, of most importance here, drainage and insanitary nuisances. Burgh courts held no supervisory jurisdiction over Dean of Guild Courts, which were established in around two-thirds of royal burghs in this period.²⁵³ Edinburgh Dean of Guild Court had jurisdiction over a relatively wide area beyond Edinburgh itself: the old royalty of the burgh, encompassing Canongate, West Port, Potterrow, Pleasance and Leith.²⁵⁴ Complaints of neighbourhood were submitted by a Pursuer, usually the heritor of the property being offended on their tenant's behalf, against the heritor, i.e. the owner, of the tenant who had failed to 'keep neighbourhood', known as the Offender. The Dean of Guild and his council always undertook a physical inspection of the property or properties in question before passing judgement in the form of a court Decree,²⁵⁵ and a Court Officer travelled around the city on the Dean of Guild's behalf, issuing warnings, executing warrants and summoning individuals to appear at court. Thirty seven men who served as Edinburgh's Dean of Guild between 1551 and 1650 had also served on Edinburgh Council; twenty four of those men were hereditary burgesses and one had earned his burgh status through an apprenticeship.²⁵⁶ Some of these men served on several councils. George Suttie, James Ruchaid and James Stewart were listed as councillors on six or more occasions and Suttie served as Dean of Guild successively between 1643 and 1650.²⁵⁷ Helen Dingwall concluded, 'the political affairs of Edinburgh were firmly in the hands of those who had the sort of background deemed necessary for the maintenance of the merchants' aims and ideals'

²⁵³ D. Walker, *A Legal History of Scotland: The Seventeenth Century*, vol. 4 (Edinburgh, 1996), pp. 324-325.

²⁵⁴ J. Campbell-Irons, *Manual of the Law and Practice of the Dean of Guild Court: With Synopsis of the Law, relating to Building Restrictions, Servitudes, etc* (Edinburgh, 1895), pp. 33-54.

²⁵⁵ At least one Dean of Guild Court Decree survives: Innes vs. Paterson, 15/06/1692. National Archives of Scotland, 'Edinburgh and Leith Papers, 1329-1851 – Decree of Guild Court in favour of Robert Innes against John Paterson, for obstructing vennel with middings', RH9/14/68.

²⁵⁶ H. Dingwall, 'The Importance of Social Factors in Determining the Composition of the Town Councils in Edinburgh 1550-1650', *The Scottish Historical Review*, vol. 65, no. 179 (1986), p. 22.

²⁵⁷ *Ibid.*, p. 23

and that 'election to civic duty was subject to similar controls in 1650 as had applied in 1550'.²⁵⁸

Edinburgh's outdoor sanitation did not fall exclusively under the jurisdiction of the city's local institutions, however. At certain times, national institutions, such as the Privy Council of Scotland, the Convention of Burghs and even the Scottish Parliament, interfered in Edinburgh's waste disposal issues. This extract from the Scottish Privy Council Register, recorded in March 1619, for example, permits a useful insight into Scottish Privy Councillors' reception of and reaction to the typically condemnatory nature of travel literature written by visitors to the country:

...[Edinburgh] is now become so filthie and uncleane, and the streits, vennalls, wyndis, and cloisis thair of so ouerlaide and coverit with middings, and with the filthe and excrementis of man and beast, as the nobilmen, counsallors, senators, and utheris his Majesteis subjectis quho ar ludgeit within the said burgh can not have ane clene and frie passage and entrie to thair ludgingis ... And forder this schamefull and beistlie filthienes is most detaistabill and odious in the sicht of strangers, quho, beholding the same, ar constrained with reassoun to gif oute mony disgracefull speichs aganis this burgh, calling it a most filthie pudle of filth and uncleanness, the lyk quhair of is not to be seine in no pairt of the world...²⁵⁹

The words 'with reassoun' speak volumes, suggesting that while the Privy Councillors thought that the travellers' descriptions were 'disgracefull', they admitted that they were not completely unjustified. Evidently, civic pride in relation to Scotland's capital city was strong, Scotland's Privy Councillors cared about travellers' perception of it, and, moreover, the cleanliness of Edinburgh's streets was clearly a nationally significant, arguably political, issue.

Scotland's national, representative, exclusively urban assembly, The Convention of Burghs, which had jurisdiction over Scottish incorporated towns and which assembled commissioners from burghs across Scotland to debate and resolve specifically urban issues, was a remarkably effective facility of which there was no equivalent institution in England.

²⁵⁸ Ibid., p. 22-23.

²⁵⁹ *RPCS*, vol. 11, pp. 530-531 (04/03/1619).

While Scottish burgh officials had been meeting formally to discuss urban issues, such as the enforcement of burgh laws, weights and measures and trade regulations, since at least the thirteenth century, and the Convention of Burghs started to meet as a truly representative assembly as early as 1487, the Convention emerged as what Alan MacDonald calls a ‘virtually autonomous national institution’ after 1500 and began to meet more regularly from the 1550s onwards.²⁶⁰ As well as discussing legislation and regulations which affected all Scottish burghs, it also controlled the admission of burghs to parliamentary status and was even able to veto the monarch’s decisions in relation to urban affairs.²⁶¹ From the 1580s, incorporated burghs were regularly sending their commissioners to attend the ‘general’ convention of burghs, held every July in a different burgh each year.²⁶²

Disposing of waste and keeping streets and other public places relatively clean was more challenging in an urban than in a rural context; rural waste disposal problems never equalled those in the burghs because the countryside was less densely populated, and landward Scots were able to dispose of their waste directly onto their cottage gardens and fields. Consequently, urban, far more so than rural, squalor became the object of foreign visitors’ condemnation. The increasingly serious problem of inadequate outdoor sanitation in Scottish burghs in general, but particularly in Edinburgh, attracted the attention of the Convention of Burghs several times throughout the period. Indeed, the problem of Edinburgh’s insanitary streets became such a nationally significant issue that it was even raised and discussed in the Scottish Parliament.²⁶³ It is therefore important to consider Edinburgh’s outdoor sanitation provision, waste disposal and street cleanliness in a much wider administrative, governmental and legal context than that of its smaller counterparts.

²⁶⁰ A. MacDonald, *The Burghs and Parliament in Scotland, c.1550-1651* (Aldershot, 2007), pp. 6-8, 186.

²⁶¹ *Ibid.*, pp. 186-187.

²⁶² *Ibid.*, pp. 6-8.

²⁶³ ‘Act for Cleansing the Streets of Edinburgh’, *APS*, Edinburgh, 08/06/1686. Downloaded from: www.rps.ac.uk (website accessed 27/04/2010).

York

In sixteenth- and seventeenth-century York, a range of legal and administrative authorities and institutions regulated and managed waste disposal and environmental regulation. This was a complex edifice of simultaneous and competing bodies with overlapping functions and jurisdictions, yet each and every one of these institutions were integral to the functioning of environmental regulation in the city. The table below splits the fines received by the Chamberlain for insanitary nuisance and street cleaning offences according to the court which extracted the fine and demonstrates the relative importance of York's wardmote court.²⁶⁴

*Fig. 18: Insanitary Nuisance Fines exacted from various Courts in the City of York, 1559-1687*²⁶⁵

Court:	Wardmote		Searchers of Occupations		Sessions of the Peace		Sheriff's Tourn		Sessions of the Peace and Wardmote [mixed]		Sessions of the Peace, Wardmote and Exchequer [mixed]		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
-	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	-
1559-1687	549	48	44	4	68	6	66	6	282	25	143	12	1,152

York had been a 'county corporate' since 1396, which meant that it was legally and administratively separate from the county of York. The county's Sheriff and Justices of the Peace had no jurisdiction in the city, which was governed instead by two of its own Sheriffs and its twelve aldermen, who acted as Justices of the Peace.²⁶⁶ Citizens of York, therefore, were restricted to using courts within the city only, except for the Westminster courts and the Council of the North.

York Corporation was tripartite: a senior council consisting of an annually elected mayor and twelve aldermen; a junior or 'Privy' council, known as the 'Twenty-Four', two Sheriffs, a recorder and a town clerk; and there also existed a common, but more representative, council of forty-eight men, drawn from the searchers of the city's guilds.²⁶⁷

²⁶⁴ See Appendix C, pp. 232-233 for more detail.

²⁶⁵ From 61 extant years of total received fines.

²⁶⁶ Palliser, *Tudor York*, p. 60.

²⁶⁷ *Ibid.*, p. 61.

The senior and junior councils, the main body of around thirty-five men, met in the Council Chamber on Ouse Bridge or the Common Hall on Coney Street between once and a few times weekly to discuss urgent city matters whereas the common council met only occasionally. However, when the senior and junior councils met effectively as a court to pass an official bylaw, they usually made a point of stating in the preamble to a bylaw, 'it is ordered by this Court with the consent of the Com[m]on Counsell'.²⁶⁸ As well as discussing citywide, macro-scale waste disposal problems and designing appropriate solutions to keep the streets passable and the city functioning, the Court of Mayor and Aldermen also sometimes decided legal disputes between neighbours in areas such as boundaries and drainage, which often involved insanitary nuisances. Sessions of this court were conducted on an ad hoc basis within council meetings and hearings were simply slotted between discussions of other city issues. Although the mayor, aldermen and councillors were elected annually, many served on more than one council for successive years.

The Sessions of the Peace, both petty sessions and quarter sessions, were conducted by a quorum of any three of the mayor and aldermen in their role as Justices of the Peace.²⁶⁹ This court presented and fined inhabitants for a large array of offences, from eavesdropping to card-playing, to slander, to petty violence, to insanitary nuisances, to failure to carry out neighbourhood duties such as cleaning one's forefront. Each parish had its own constable, who was responsible for disbursing poor payments, but constables also sometimes paid one-off sums to inhabitants for conducting urgent waste disposal duties within the parish. The corporation also delegated responsibility to the constables to ensure that the by-laws they passed were promulgated, implemented and adhered to in their own bounds. They had particular responsibility to ensure that all householders cleaned their forefronts thrice weekly, and especially after markets had ended, for example. Two wardens were appointed to each

²⁶⁸ YCA, B37, (03/02/1652).

²⁶⁹ Palliser, *Tudor York*, pp. 62, 79.

ward annually and were sometimes referred to as the officers of the wards. Wardens were senior to the constables of as many as six respective parishes which fell within their jurisdiction and the corporation often charged the wardens of the wards with implementing by-laws and changes to street cleaning systems made by York Corporation.

Building disputes had been viewed and surveyed throughout the medieval period by the searchers of the carpenters and tilers, who possessed significant expertise and knowledge in these areas. Many building disputes involved insanitary and drainage nuisances and thereby the searchers of the occupations of carpenters and tilers came to have an influence over environmental regulation. This court of the searchers of occupations was responsible for extracting many of the fines in the Chamberlains' accounts pertaining to insanitary nuisance, street cleanliness and waste disposal and it continued to exert a strong influence over the regulation of insanitary nuisances throughout the seventeenth century. Sheriff's Tourn and the Wardmote Courts were York's court leets, which were held twice yearly, and which functioned to fine inhabitants who had been presented as a result of the wardens' street inspections for having contravened city bylaws. This court had traditionally dealt with insanitary nuisances and minor infringements on properties throughout the medieval period, but it became increasingly less important into the early modern period, as the sessions of the peace became more active in the city.

Change Over Time, 1560-1700

Edinburgh

In 1560, both Edinburgh Town Council and Edinburgh Dean of Guild Court had joint jurisdiction over deciding complaints of neighbourhood in the city. However, a Decree Arbitral, passed by Edinburgh Council on 03 March 1583/84, which clearly stated 'the said dene of gild and his counsall to beir the haill burding in deciding all questiouns of nichtbourheid ...and na nichbouris wark to be stayet' by anyone but him, changed this

situation, effectively giving sole jurisdiction over neighbourhood disputes to Edinburgh's Dean of Guild and his council.²⁷⁰ The decision to delegate all cases of neighbourhood to the Dean of Guild was perhaps designed to alleviate an increasing workload for the council or even simply to rationalise, organise and simplify its workload by allowing the Dean of Guild to take over that particular area of city government. This is an example of a clear move from an overarching, overlapping and wider system of environmental regulation to one which was more specialised and better organised. Indeed, as Margaret Wood observed in 1940,

It was undoubtedly the increase in building which produced the Neighbourhood Court ... with the increasing number of houses many other problems were bound to arise, and, as such problems recurred and became complicated, it is a natural step to the appointment of a court to deal with them and to relieve the Council of the work.²⁷¹

Had Edinburgh Council continued to decide questions of neighbourhood itself in addition to its other responsibilities and jurisdictions, they soon would have started to spend less time on each case, perhaps even having been forced out of necessity to stop visiting the properties to inspect the nuisances before making a decision. Consequently, this important area of environmental regulation would have suffered and sanitary conditions could have worsened markedly. As Wood observes, the delegation of this jurisdiction to the Dean of Guild and his Council was timely and well considered. One can see with the benefit of hindsight that this decision was beneficial to Edinburgh's inhabitants in the long term. However, Richard Roger observes that the Dean of Guild Court 'exerted absolute power both before and after the Decree in matters relating to building control'.²⁷² It is true that even after the Decree, Edinburgh Council decided a few cases of neighbourhood, but the Dean of Guild and his council decided the overwhelming majority of such disputes.²⁷³

²⁷⁰ ECA, SL1/1/7, Edinburgh Town Council Minutes, 1583-1585.

²⁷¹ M. Wood, 'The Neighbourhood Book', *The Book of the Old Edinburgh Club*, vol. 23 (1940), p. 89.

²⁷² R. Roger, 'The Evolution of Scottish Town Planning' in G. Gordon and Brian Dicks, (eds.), *Scottish Urban History* (Aberdeen, 1983), p. 76.

²⁷³ For example, *Stevensone vs. Rutheid and Huntar*, 1662: ECA, SL1/1/21, Edinburgh Town Council Minutes, 1661-1662.

There is no evidence to suggest that the two institutions were in fierce competition to decide cases of neighbourhood or that Edinburgh Town Council decided a few cases after the Decree explicitly against the Dean of Guild's will or without his knowledge. The two institutions may well have been communicating frequently, working together towards common goals in relative harmony. The 1583/84 Decree was subsequently ratified on 12 September 1600, when the Dean of Guild gained further powers to reverse and modify Decrees, providing that he informed Edinburgh Council of any such modifications:

That when the deine of gild or gild counsall hes past or passis to visit ony nichtbourheid and hes productet and produces thair decreitt obsolvitour or condamniture thairupoun, the partie, whether he be persewer or defender, gif he finds him self hurt be the said decreit, sall instantlie before thay pas from the grund to the deine of gild and his brether that he estems and thinks that decreit wranguslie gevin and reclame to the greit counsall and thairupoun consigne in the hands of the deine of gild ane unlaw of fourtie schillings and offer to give in his bill to the greitt counsall the nixtt counsall day conteining the points and heids.²⁷⁴

That Edinburgh Council confirmed and extended the Dean of Guild Court's jurisdiction over cases of neighbourhood sixteen years after the original Decree Arbitral, suggests that the system was working well and that it was in the council's interests to extend the Dean of Guild's power.

As is explained more fully in the next chapter, in October 1682, Edinburgh Council delegated the whole area of street cleaning and waste disposal in the city to a 'constant comittie', which was appointed to oversee a street cleaning team of thirty muckmen, and which met each Friday immediately after Edinburgh Council's weekly meeting.²⁷⁵ By 1684, this committee, headed by a General Scavenger with two overseers working under him, supervised a highly centralised team of thirty muckmen. This delegation of one area of urban management to a separate, albeit subservient, body of men marked a significant transition in urban administration. Edinburgh's councillors were under immense pressure, as a result of an

²⁷⁴ ECA, SL1/1/11, Edinburgh Town Council Minutes, 1600-1609.

²⁷⁵ ECA, SL1/1/30, Edinburgh Town Council Minutes, 1681-1684. See pp. 127-130 for much a more detailed explanation of how Edinburgh Council centralised the city's street-cleaning.

expanding population and consequently augmented waste, to create a system capable of maintaining a basic standard of street cleanliness in such a frequently visited and nationally significant city. It is clear that they appointed a street cleaning committee, not because they wanted to change the administrative systems of the council, but because they could see that the increasing problem of dirty, insanitary streets needed more focused attention than they were able to devote to it. This administrative discontinuity was born out of practical necessity first and foremost. Practical necessity, therefore, inspired the beginning of a gradual shift towards more bureaucratic modes of administration.

York

Increasingly, over the course of the period 1560-1700, York's Sessions of the Peace court gradually took over the traditional jurisdiction of York's Court Leet, the Wardmote Court, and it started to regulate more prosaic contraventions, including street cleaning offences and insanitary nuisance. In this respect, York's Wardmote courts reflected the national pattern of the decline in importance of court leets over the course of the early modern period.²⁷⁶ Appendix C shows the relative importance of the various courts which were responsible for regulating the environment throughout the period. However, the change in the respective courts' functions was more the result of a nationwide pattern than of definitive action taken by York Corporation to improve the regulation of the environment. Whereas Edinburgh Council was forced, under the pressure of the escalating problems ensuing from an increasingly densely populated and dirtier city, to rationalise and simplify their regulatory system, making a purposeful effort to improve environmental regulation, by delegating neighbourhood nuisances to the Dean of Guild Court, York Corporation saw no apparent

²⁷⁶ F. Hearnshaw, *Leet Jurisdiction in England, especially as illustrated by the records of the Court Leet of Southampton* (Southampton, 1908); W. Hudson, (ed.), *Leet Jurisdiction in the City of Norwich in the XIIIth and XIVth Centuries* (1891).

need to simplify the complex and overlapping system which had been passed down to it by the medieval predecessors and it took no action to reorganise the courts which regulated insanitary nuisances in the city. This can be explained by the immense population increase in Edinburgh compared to the relatively stagnant population in York. Seemingly, early modern urban councils were reluctant to make significant changes to the systems which they had inherited from their predecessors unless they were forced to do so by significant demographic changes which rendered such systems inadequate.

Despite the lack of demographic pressure in York, the corporation did make some efforts to devote more focused attention to waste disposal problems in isolation from the array of other urban problems which they had to solve. The corporation rationalised and developed their administrative mechanisms for managing this area of city government significantly. As is discussed much more fully and on a more practical level in the next chapter, the corporation appointed four Scavengers, one for each ward, to clean and remove waste from the streets on three days each week and the corporation charged inhabitants for this non-negotiable, citywide service.²⁷⁷ This heavily centralised and markedly different street cleaning and solid waste disposal system was designed to reduce the city's reliance on individual householders' compliance. The 'constables of everie parishe' collected 'the money assessed upon the inhabitants within ther severall parishes for the skavengers', and this money was collected twice yearly at the Annunciation and Michaelmas, from 1581 henceforth. In addition to the scavengers receiving 'all the donge and filth for their paines', the constables had 'to pay the skavengers wages'.²⁷⁸ This marked change in the city's waste disposal was promulgated and explained to inhabitants through the medium of their parish churches.²⁷⁹

²⁷⁷ YCA, B27, York Corporation House Book, 1577-1580 (13/04/1580).

²⁷⁸ YCA, B27, York Corporation House Book, 1577-1580 (21/10/1580).

²⁷⁹ See pp. 143-172 for much more detailed information on York's street-cleaning system.

In September 1654, moreover, in response to inhabitants' continual waste disposal in a prohibited area, a small party of three council officials were sent to survey 'the waiste peece of ground at staith'.²⁸⁰ To all intents and purposes, York Corporation effectively delegated this specific task to a committee with a specific objective. Whether or not they viewed environmental regulation as a separate part of urban government, worthy of special, focused attention, they certainly perceived this as an issue which required the exclusive attention of a team consisting of three men. Just as in Edinburgh, where a committee was appointed to oversee street-cleaning across the whole city, this delegation seems to have resulted from the pressure of augmented waste, albeit in one particular location rather than the whole city. It is remarkable that both cities took the similar steps of appointing a committee to deal with sanitation problems, albeit on very different scales. This distinctly more modern, focused treatment of problems marks an important discontinuity in the respective cities' administration, management and government. Between 1560 and 1700, the systems and processes designed to prevent insanitary nuisances and problematic accumulations of waste underwent acute change in Edinburgh and relatively minimal modification in York. Both Edinburgh Council and York Corporation responded to their respective sanitation challenges quickly, efficiently and with an increasingly proactive approach.

The Systems in 1700

Edinburgh

By the late seventeenth century, Edinburgh Council had successfully created a highly centralised and well organised street cleaning system which managed this area of urban government underneath, but separately from, Edinburgh Council. This is a shining example of what could be done towards solving early modern urban waste disposal problems, but it has to be said that it was born out of necessity rather than foresight; adaptation rather than an

²⁸⁰ YCA, B37, York Corporation House Book, 1650-1663 (27/09/1654).

explicitly progressive movement of reform. It was unfortunate that increasing horse-drawn traffic and population growth absorbed much of the improvement which should have ensued from the development of this street cleaning committee. Foreigners continued to complain about Edinburgh's insanitary conditions into the eighteenth century, and even Edinburgh's proud burgh councillors admitted, in February 1681, that despite their best endeavours Edinburgh was 'still mor dirtie then formerlie'.²⁸¹ That the councillors rose to the challenge and confronted Edinburgh's street cleaning problem is far more important than their ultimate failure to combat it once and for all.

Since 1584, the Dean of Guild Court had held almost exclusive jurisdiction over neighbourhood disputes, including insanitary nuisances, which enabled it to devote specialised, focused and adequate attention to resolving such nuisances to satisfactory conclusions for the benefit of Edinburgh's inhabitants and the citywide standard of sanitation and air quality. Having only one court to deal with such disputes was beneficial because the Dean of Guild and his council were experienced in hearing such cases, understood the details and complexities of such disputes and were consequently better equipped to make fair and consistent judgements.

The systems which were designed to manage waste disposal and environmental regulation in Edinburgh, which were passed down to Edinburgh's eighteenth-century governors, were very different from those which had been handed down from the medieval governors in 1560. The systems were certainly better organised and more efficient from an administrative perspective. However, they were not necessarily better equipped to deal with the waste produced by the much larger population which resided in Edinburgh in 1700 than the systems present at the start of the period had been equipped to deal with the waste produced by the much smaller population living in the Edinburgh of 1560. While the systems undoubtedly improved in actual terms, they might well not have improved in relative terms.

²⁸¹ ECA, SL1/1/30: Edinburgh Town Council Minutes, 1681-1684.

York

York's waste disposal systems and processes, too, became increasingly centralised between 1560 and 1700. However, while householders' responsibilities decreased somewhat, after the introduction of the scavenger system in 1580 – the most significant change in this area of city government over the course of fourteen decades – inhabitants still retained much of their traditional responsibilities due to the survival of the medieval forefront system alongside the scavenger system. While the scavengers were paid by means of what was essentially a tax on householders to remove as much waste as a man put out at his door and to clean the main thoroughfares thrice weekly, in reality householders were still responsible for cleaning their forefronts, scouring their gutters and removing a large proportion of their own waste, or at least moving it to a designated disposal point in their ward or parish or transporting it to boats on the Fosse so that it could be transported down the river to Tang Hall pastures near Heworth.

Environmental regulation in York functioned in a primarily top-down manner, with orders originating from the corporation to the officers of the wards, then to the constables and then down to the inhabitants through the medium of their parish churches. Householders seemingly had no choice but to obey such orders. Inhabitants could petition the corporation to complain about nuisances which were reducing their daily life quality or to request liberty to implement solutions to insanitary nuisances themselves, such as the erection of a locked door to prevent inhabitants from dumping rubbish on one's land. They could also organise their own informal waste disposal methods and facilities within their own neighbourhoods, such as communal dunghills. Inhabitants could also flout bylaws and dump their rubbish where they saw fit, taking care to remove it beyond the city walls, or taking it down to the Staith, even though such behaviour was officially forbidden. On the surface, the official records give a misleading impression that York Corporation tried to control the city's inhabitants by limiting their dirty, unthoughtful and chaotic waste disposal arrangements and techniques. But in

reality they came up against a lot of resistance from inhabitants who made significant efforts to shape waste disposal themselves, even by flouting bylaws and dumping rubbish where they saw fit, which forced the corporation, eventually, to make such informal waste disposal locations official, by building walls around what were already functioning as established waste disposal locations.

While there was a distinctly and unmistakably more serious tone as well as a numerical increase in the council discussions and bylaws pertaining to this area of city government in the first half of the seventeenth century, and the corporation clearly made a significant effort to improve street cleanliness to combat plague during that period, for the most part of the period 1560 to 1700, the corporation reacted to problems on an ad hoc basis. Apart from establishing the scavenger system in 1580, and several minor innovations throughout the seventeenth century in terms of allocating specific locations at which to bury offal, managing the movement of livestock and regulating the sale of urban muck to local rural farmers to be used as fertiliser, waste disposal processes and systems remained relatively stagnant. Indeed, the medieval forefront system, which was dependent on householders' accountability, survived intact right up to the turn of the eighteenth century and despite the need for several reminders to inhabitants to perform their duty to keep their forefronts clean, it seems to have functioned quite well.

Such continuity in environmental regulation undoubtedly resulted from the city's stagnant, perhaps even declining, demography, which meant that the corporation was never forced to adapt this area of city government to meet the increasing needs of an accelerating population and its augmented waste. The fact that bylaws and reminders of previously passed bylaws were repeated several times throughout the period, does not infer that the system was failing. In terms of the lengthy period of fourteen decades, it is an achievement that such bylaws only needed to be promulgated every few years, sometimes only once a decade.

Conclusion

The governmental, legal and administrative systems which were handed down intact from the medieval governors in 1560 underwent far more significant changes in Edinburgh between 1560 and 1700 than they did in York. This historically important and revealing difference can be explained largely by Edinburgh's population increase and York's demographic stagnation. However, Edinburgh should not be viewed as having boasted the more progressive, modern and proactive council. If anything, Edinburgh Council was far more reactive than proactive, and they overhauled the way in which waste was managed in the city because they had no other choice in the face of population expansion and consequent augmented waste. While Edinburgh Council arguably handed over a far more rational, more efficient and reformed organised system for managing urban waste than that handed over by York Corporation in 1700, Edinburgh's inhabitants produced more waste in a smaller area and therefore that city needed an improved system whereas York did not. Similarly, London needed a more efficient system for handling its waste than Edinburgh. The systems which were handed down to eighteenth-century Edinburgh and York cannot be compared equally because the cities were so different in character, function and demography. They should be compared in the context of the problems they were designed to manage and regulate. Had York experienced a similar demographic increase, then its Corporation, too, might well have designed a much more robust and efficient system for managing the city's waste. Similarly, had Edinburgh's population stagnated between 1560 and 1700, its councillors might not have felt the urgent need to alter, and thereby modernise, their system. It can be argued, therefore, that in the light of York's demographic stagnation, York Corporation perhaps went to greater lengths to improve this area of urban government, certainly above and beyond what was required in relation to the size of their waste disposal problems, than did Edinburgh Council.

Chapter 4

The Management of Waste-Disposal and Street-Cleaning in Edinburgh and York

Introduction

In both the sixteenth and the seventeenth centuries, householders held a relatively high level of responsibility over disposing of their waste and keeping streets and other outdoor public areas clean, but corporations and councils carried out, oversaw and regulated a significant proportion of the work involved. Undoubtedly, inhabitants understood that street cleaning and the removal of waste from their streets was integral to the ‘commonweal’, but they certainly did not view these elements of urban life as the exclusive responsibility of their local governors. That inhabitants were obliged to maintain the cleanliness of the area directly before their doors, often under the threat of a fine, explains why most people were so careful when disposing of their household and industrial waste. Contemporaries were necessarily interested in minimising the time which they would have to spend cleaning their forefronts; they were also interested in keeping the area around their homes clean and sweet-smelling for theirs and their family’s wellbeing and life quality, and they were motivated to contribute to neighbourhood and civic pride. It would be misleading to assume that all neighbours came out willingly to sweep their forefronts in a harmonious and idyllic fashion, and it is important to bear in mind that a minority of householders neglected their duties in this respect. However, as this chapter demonstrates, the majority of householders did not have to be coerced into keeping their forefronts clean and disposing of their waste efficiently; most performed these duties willingly and unproblematically. This chapter outlines how certain elements of street cleaning and waste disposal duties were undertaken by civic employees and managed by local governors in Edinburgh and York, where the line lay between the city governors’ and inhabitants’ responsibilities, how and why these systems were modified over the course of fourteen decades, and how far the respective systems differed from one another.

Edinburgh

Waste disposal problems, and the systems and processes which were consequently designed to prevent such problems' recurrence and to maintain a relatively clean outdoor environment in Edinburgh, were not invented in 1560. Medieval Edinburgh's governors had been tackling such problems for centuries and by 1560, long-established and well considered systems and processes were already in place. In 1560, the population of inner Edinburgh was around 12,500, and while the population increase in this period was not as rapid as it would later become in the seventeenth century, by 1592 it had increased by about 20% to around 15,000.²⁸² During the later sixteenth century, neighbourhoods in Edinburgh were far more socially cohesive and less transient than they would subsequently become in the seventeenth century because they contained fewer immigrant residents.²⁸³ There was also significantly more open space in the later sixteenth century, before the influx of immigrants in the seventeenth century drove more intensive infilling of closes than had occurred in the sixteenth century, the erection of even higher, multi-story tenements and the subdivision of those tenements. Before 1600, at least, there was more open space in which inhabitants could supplement their income through urban agriculture.

Fig. 19: Categorised Council Minutes (Statutes and Discussions) pertaining to Waste-Disposal and Outdoor Sanitation, 1560-1599²⁸⁴

-	1560-1569	1570-1579	1580-1589	1590-1599	Total:	
-	No.	No.	No.	No.	No.	%
Solid Waste-Disposal	5	1	13	6	25	37
Dirty Trades	7	-	9	2	18	27
Combination	2	1	5	4	12	18
Livestock	1	-	4	2	7	10
Liquid Waste-Disposal	1	1	1	-	3	5
Street-Cleaning	1	-	-	-	1	2
Water Purity	-	-	-	1	1	2
Total:	17	3	32	15	67	100
Percentage:	25	5	48	22	100	-

²⁸² Dingwall, *Late Seventeenth-Century Edinburgh*, pp. 13-16.

²⁸³ *Ibid.*, pp. 13-16.

²⁸⁴ ECA, SL1/1/3-10: Edinburgh Town Council Minutes, 1558-1600.

Between 1560 and 1599, issues pertaining to sanitation in general were recorded in the burgh council minutes a total of sixty-seven times, ranging from as few as three in the 1570s to as many as thirty-two in the 1580s.²⁸⁵ Solid waste disposal dominated council discussions during this period, accounting for 37% of separately recorded discussions relating to this area of city government, which surely resulted from the preponderance of urban agriculture and the consequent production of large amounts of manure, in what was still a relatively sparsely populated city with plentiful open space and backlands. By far the largest sub-category of such discussions related to the regulation of ubiquitous heaps of manure, known as middings or dunghills, which were stored on wasteland or inhabitants' private forefronts and which peppered Edinburgh's landscape throughout this period, largely as a result of relatively heavy involvement in necessary urban agriculture in backlands.²⁸⁶ Although at this time the backlands were already starting to become built up, there was more open space on which to raise animals and grow crops between 1560 and 1599 than there would be in the seventeenth century. Two other sub-categories within the area of solid waste disposal were the transportation of rubbish out of the city and inhabitants' taking their 'ease' or 'easie' in public places. In November 1580, for example, Edinburgh Council prohibited inhabitants from 'doing their ease at the said close heids as is most uncomely to be sene ... under the paine of x li so often as they fail'.²⁸⁷ A similar statute was passed in April 1586,

... proclamatioun to be maid dischargeing all persouns of voiding of thair filth and doing thair easies at the close heids as they have done in times past, under the paine of wairding thair persouns and punessing of thame that may be tryet or apprehendit at the will of the magestrats and payment of ane unlaw be the maisters of the houses[es] whose servants do the sam[e], so often as they fail.²⁸⁸

²⁸⁵ This compares to totals of thirty-one and 151 in the first and second half of the seventeenth century, respectively. In the first half of the seventeenth century, they ranged from one discussion in the 1620s to twelve in the 1640s and in the second half of the seventeenth century, they ranged from thirteen in the 1660s to fifty-one in the 1680s.

²⁸⁶ See chapter two for more detailed information about the manure trade, pp. 78-85.

²⁸⁷ ECA, SL1/1/6: Edinburgh Town Council Minutes, 1579-1583.

²⁸⁸ ECA, SL1/1/8: Edinburgh Town Council Minutes, 1585-1589.

These ordinances suggest that some of the poorer inhabitants who lived in the closes may well have lacked stationary privies and indoor facilities, such as close stools and perhaps even chamber pots.²⁸⁹ It is impossible to draw firm conclusions, but that these inhabitants went deliberately to the close heads to take their ‘easie’ does suggest a degree of consideration. It was easier for the muckmen to collect waste from the close heads with a horse and cart than it was to shovel it into a wheel barrow, wheel it up the steep hill to the close head and then onto the horse and cart at the top of the close. It could also have been a deliberate attempt to deposit waste away from their own dwellings down in the closes. Given that it was easier for the muckmen to collect waste from the close heads than down in the closes, it is more likely that the council was objecting to the fact that inhabitants’ were defecating directly onto the street, the manner in which the waste was being deposited, which was ‘uncomely to be sene’, rather than to fact that the waste itself was being deposited at the close heads. As far as the council minutes and accounts show, Edinburgh Council only maintained a few public privies in the tolbooth, the college and prison and it funded the construction of two new public privies, one near the entrance of the Fleshmarket and another ‘at some close foot at the land mercate’, in 1684.²⁹⁰ However, neighbours could well have constructed and maintained semi-private privies for the use of several adjacent households, which never entered the written record. It is impossible to say exactly how many private, semi-private and public privies there were in Edinburgh, but it is highly likely that there were many more than the written records suggest. While solid waste disposal was clearly the most pressing issue in the later sixteenth century, street cleaning was only discussed the second least frequently, receiving less attention than dirty trades, liquid waste disposal and livestock.

²⁸⁹ For further discussion of the ownership of waste-disposal receptacles in East Anglia and North East England, see A. Green, ‘Heartless and unhomey? Dwellings of the Poor in East Anglia and North-East England’, in J. McEwan and P. Sharpe, (eds.), *Accommodating poverty: the housing and living arrangements of the English poor, c. 1600-1850* (2010), pp. 69-101.

²⁹⁰ See p. 189 for more detailed discussion of this public privy. Notably, there is no significant correlation between the location of Edinburgh’s public privies and the locations in which the highest numbers of reported insanitary nuisances occurred. See pp. 193-201.

The second most frequent category of discussion at council meetings during this period was that of dirty trades, accounting for 27% of discussions. Indeed, dirty trades seem to have been much more problematic in this early period than they subsequently became in the seventeenth century, when the population of inner Edinburgh increased much more rapidly. The overwhelming majority of the time during which Edinburgh Council discussed dirty trades, was spent regulating the city's fleshers – particularly where they slaughtered their livestock and how they disposed of their malodorous and unsavoury offal waste. Edinburgh Council also spent a significant amount of time regulating the candlemakers, whose production process of melting tallow down to form candles was extremely malodorous and consequently became a perennial source of contention and complaint among the inhabitants. This complaint, for example, was submitted to Edinburgh Council in March 1592/93:

... divers nichtbours hes heavilie complenit upoun the candilmakers who throw rinding and melting of their tallow in their forebuiths and forehouss[es] contrer[y] to the statutes of the toun raises such vile, filthie and contagious savoures that none may remaine in thair own houses[es]; thairfore that no maner of persoun, candilmakers or others be thame selffs thair servands and doares tak upoun hand be day or nicht in time cuming to rind or melt talloun or cracklings in forebuiths, forehouss[es], common vinells or other places whair the savour thairof may cum to the Hie gaitt Kowgaitt or common streits, under the paine of an unlaw of 10 li so often as thay fail.²⁹¹

This is typical of the way in which neighbours took their own initiative to protect the micro-scale outdoor environment in which they lived and worked against malodorous nuisances which were reducing their life quality to the extent that they felt that 'none may remaine in thair own houssis'. For the inhabitants who submitted this petition to Edinburgh Council, the malodorous smell of candle-making clearly fell below their collectively upheld standard of air quality.²⁹²

²⁹¹ ECA, SL1/1/9: Edinburgh Town Council Minutes, 1589-1594.

²⁹² Edinburgh Council also discussed walkers, furriers and lime-slakers in relation to environmental regulation, but very rarely indeed. There is no extant evidence of an effort to regulate tanners, soap-boilers, dyers or any other so-called dirty trades, though several tanners who operated on the shore of the Nor' Loch do appear in the Dean of Guild Court minutes in relation to building nuisances. Perhaps they did not cause any sufficiently significant pollution problems to warrant Edinburgh Council's attention.

The issue of regulating the presence of livestock in public areas did attract Edinburgh Council's attention, but it was by no means a major issue within the context of overall environmental regulation, only having been referred to ten times in total between 1560 and 1700, and only accounting for 10% of total discussion in the period 1560 and 1600. However, seven of the ten discussions across the whole period occurred between 1560 and 1600, suggesting that livestock was a more serious issue in this period than it was throughout the seventeenth century. Sheep, nolt [i.e. cattle] and oxen were supposed to be kept in fields beyond Edinburgh, whereas small numbers of pigs, hens, geese, horses and milk cows were often accommodated in backlands. Inhabitants were required by local statute to keep the latter group of livestock, especially swine, securely bound, which contemporaries termed as being 'in band', on their properties in order to prevent them from causing damage, insanitary nuisances and general havoc on the streets and on neighbours' property. Allowing one's livestock to roam freely in public areas was a serious offence, and potentially problematic in the context of outdoor sanitation, because free-roaming swine and other animals could deposit their own waste on the streets, rummage in sewers and charge into market stalls and dunghills, damaging goods and spreading carefully piled manure across the streets. Curtailing free-ranging livestock's presence on urban streets complemented local governors' wider attempts to improve sanitation. The majority of discussions and statutes pertained to swine, which were not only raised by fleshers, but also on a much smaller scale by inhabitants who housed them in small enclosures known as 'cruives' on their backlands. This statute regarding swine was passed in 1592, for example,

Item for the honestie and clenes of this toun it is ordanit auld statute that all maner of persons having swine within this burgh ... either tak thame and put thame furth of the toun or els keep thame in festnes or bands so that none be sene upoun the streets or common vennells under the paine of warding of the persouns owners thairof will thay pay ane unlaw of 18 schillings so oft as thay failyie.²⁹³

²⁹³ ECA, SL1/1/9: Edinburgh Town Council Minutes, 1589-1594.

And this statute was passed in 1590 regarding fleshers' cattle having been kept in the kirkyard,

The sam day for divers guid causes and consideratiouns it is thocht expedient statute & ordaines that na flesher plaice thair nolt or guidis in the kirk feild yaird under the paine of xl d to be taine of each heid fund thairunto and ordains the baillies to caus putt the sam to execution and the deikin of the fleshers to adverteis the samin.²⁹⁴

It required substantially less labour and effort for a flesher to slaughter his livestock closer to the point of sale and further from the land on which he was grazing it. It is unsurprising that the fleshers took advantage of grazing their cattle in the kirkyard, close to their workshops. Despite its religious connotations, in practical terms the kirkyard was essentially a piece of open land in what was still a pre-modern, heavily agricultural city in the later sixteenth century. Similarly, in Aberdeen, although cows were principally kept on the burgh muir, sometimes contemporaries inexpediently grazed them on pasture within the burgh. For example, in 1579, Aberdonian councillors stipulated 'na cattell sall haff pastuir of gress upoun ... this brught'.²⁹⁵ Fleshers frequently moved cattle from the burgh muir to workshops to slaughter them, but leaving them in the streets overnight was unacceptable across Scotland. As late as 1664, Glaswegian fleshers were ordered not to 'suffer their kyne to stand on the hie streits in the night time'.²⁹⁶ Regulation was essential to ensure that fleshers grazed their livestock outside of the burgh and not on key open spaces such as kirkyards.

Liquid waste disposal was discussed infrequently during this period, perhaps because liquid waste drained away relatively quickly, and had less potential to create long-term, obstructive, malodorous nuisances. Liquid waste disposal systems across early modern urban Britain tended to have been constructed from an eclectic range of available materials, and repaired in a piecemeal manner by successive generations of tenants over time. Like most early modern urban centres, Edinburgh had an intricate web of major and minor ditches or

²⁹⁴ ECA, SL1/1/9: Edinburgh Town Council Minutes, 1589-1594.

²⁹⁵ *Abdn. Counc.*, vol. 1, p. 33 (24/07/1579).

²⁹⁶ *Glasgow Recs.*, vol. 3, p. 43 (15/10/1664).

sewers, but the drainage infrastructure was largely uncovered and it was by no means comprehensive. John Harrison claims that in Scotland, sewers were generally known as watergaits or watergangs when they were open ditches and as syvers or syres when they were covered or they ran underneath buildings, but the Dean of Guild minutes refer to many ditches which are clearly open sewers as 'syres', suggesting that there was significant overlap between the use of such terms.²⁹⁷ Jaw holls or cobils were vertical pipes, usually made of lead, which drained liquid waste from inside dwellings into outdoor sewers. Grooves carved into stone paving slabs in yards and in front of buildings, specifically to aid and direct drainage paths, were known as run channels.²⁹⁸ As long as blockages did not impede their flow, which occurred quite often, narrow secondary watergaits or syres near to dwellings directed liquid waste and rainwater into primary watergaits or syres running down either the crown or both sides of main causeways. Major drains then usually fed their waste into rivers or the sea.²⁹⁹ However, Edinburgh, being a landlocked burgh, drained its liquid waste from the north side of the city into the Nor' Loch and the liquid waste from closes descending from the south side of the high street drained into the Cowgate.³⁰⁰ The Nor' Loch could not have been as appallingly insanitary as one might imagine, however, because Edinburgh Council referred to the swans which inhabited the loch in the 1690s:

The Councill having considered ane bill given into them by George Wilsone cordiner and Rachael Crawford his spouse narating that ther wes ane house built for the swans in the north loch to shelter them in the winter time within ane close pertaining to him at the north loch side and soe craved that the Councill would either grant to him ane yearly rent of twenty pound for all years bygone and twenty four pound yearly in time coming or else to cause remove the said house off his propertie.³⁰¹

²⁹⁷ Harrison, 'Public Hygiene', p. 69.

²⁹⁸ M. H. B. Sanderson, *A Kindly Place? Living in Sixteenth-century Scotland* (East Linton, 2002), p. 75; Harrison, 'Public Hygiene', p. 69.

²⁹⁹ Harrison, 'Public Hygiene', p. 68.

³⁰⁰ Makey, 'Edinburgh in Mid-seventeenth Century', p. 201.

³⁰¹ ECA, SL1/1/33: Edinburgh Town Council Minutes, 1689-1691.

While a significant amount of liquid waste from the north side of the city was undoubtedly manually swept and washed with rainwater down into the loch, it was sufficiently large to accommodate that liquid waste without becoming unbearably malodorous.³⁰²

One particularly contentious issue within this area of environmental regulation was the issue of jaw holls and cobills, which were a common source of contention between neighbours because they were often shared by two or more properties and frequently fell into disrepair, typically causing them to leak liquid waste into communal areas. Edinburgh Council also discussed the issues of stagnant, insanitary puddles in public areas, resulting from inadequate drainage, and they discussed the issue of inefficient drainage from public wells. The deposition of liquid waste directly onto the streets was far less problematic than that of solid waste, which explains why Edinburgh Council discussed it far less frequently than solid waste disposal. Undoubtedly, many inhabitants emptied dirty water down the street instead of pouring it carefully into sewers without causing any major problems and many contemporaries undoubtedly urinated directly onto the streets unproblematically. Water purity was discussed only once in the later sixteenth century, but *ad hoc* payments were made throughout the period for cleaning public wells, suggesting that while liquid waste disposal was not a major priority for Edinburgh Council, they were certainly not indifferent to water purity. In the financial year 1591-92, for example, city treasurer Jhoun Macmorane paid 13s 4d scots for ‘clenyng of St Margarets well’ and 15s for clenyng of the new well’.³⁰³

³⁰² Towards the end of the eighteenth century and throughout the nineteenth century, Edinburgh’s increasing volumes of liquid waste began to drain into several burns descending from the city via various routes into the sea. Leith, the New Town and the western and southwestern suburbs drained into the Water of Leith and down to the sea at Leith; the southern suburbs drained to the Jordan or Pow Burn and down to the sea at Portobello; and the Nor’Loch, Cowgate and Meadows of the old town drained into Craigentenny burn, the original Foul Burn. These burns became known as the ‘foul burns’ of Edinburgh, but they were not known as such before 1700, when liquid waste was far less problematic due to the rarity of wet, flushing privies and the relatively smaller population. Between 1560 and 1700, some of Edinburgh’s liquid waste would have inevitably drained from the Nor’Loch, Meadows and Cowgate into the Craigentenny burn and down to the sea, but there are no references to this burn, or to any ‘foul burn’, in the council minutes between 1560 and 1700, which suggests that such drainage did not cause any significant problems for the city. See P. Smith, ‘The Foul Burns of Edinburgh: Public Health Attitudes and Environmental Change’, *Scottish Geographical Magazine*, vol. 91, no. 1 (1975), pp. 25-36.

³⁰³ ECA, uncatalogued (removed from the Silver Safe): Treasurer’s Accounts, 1581-1596.

Between 1600 and 1650, the population of inner Edinburgh increased significantly, by a further 25%, from around 15,000 in 1592 to at least 20,000 by the mid seventeenth century.³⁰⁴ Consequently, this area of urban government was placed under significant strain as increasing amounts of waste were produced in the city. The removal of the Scottish court to England in 1603, however, drew a lot of prestigious visitors' and observers' attention away from Edinburgh and towards London, which may have reduced the pressure to keep the streets sparkling clean at least somewhat. Waste disposal and environmental regulation were discussed a total of thirty-one times during this period, fewer than the preceding four decades and significantly fewer than the 151 discussions in the second half of the seventeenth century.

Fig. 20: Categorized Council Minutes (Statutes and Discussions) pertaining to Waste-Disposal and Outdoor Sanitation, 1600-1649³⁰⁵

-	1600-1609	1610-1619	1620-1629	1630-1639	1640-1649	Total:	
-	No.	No.	No.	No.	No.	No.	%
Solid Waste-Disposal	1	5	-	1	4	11	36
Combination	2	1	-	1	3	7	23
Street-Cleaning	-	1	1	1	2	5	16
Dirty Trades	1	2	-	-	1	4	13
Liquid Waste-Disposal	-	1	-	-	1	2	7
Livestock	1	-	-	-	-	1	3
Water Purity	-	-	-	-	1	1	3
Total:	5	10	1	3	12	31	100
Percentage:	16	32	3	10	39	100	-

As in the preceding four decades, solid waste disposal dominated council discussions of this area of city government, accounting for 36% of discussions. During this period, Edinburgh Council was focusing on removing accumulations of muck and rubbish in public areas around the city, but they were also working towards designing a more permanent, proactive system, integrated with street cleaning. In the financial year 1649-50, for example, city treasurer John Liddell paid 26s 8d scots for 2 'new schoulls for clenying & dighting the filth from about St Geills church' and 40s for 'for 3 new schod schoulls for dighting &

³⁰⁴ Dingwall, *Late Seventeenth-Century Edinburgh*, pp. 13-16.

³⁰⁵ ECA, SL1/1/10-17: Edinburgh Town Council Minutes, 1600-1653.

cleansing away the filth fra [i.e. from] about the parliament hous[e]'.³⁰⁶ Indeed, the city treasurer's accounts even recorded one payment for removing rubbish from a private garden, that of the Earl of Haddington. In the financial year 1626-27, city treasurer James Rae paid 3 li 4s scots to a man 'that caried away the red from the earle of hadingtounes bak gar[den]'.³⁰⁷ Many inhabitants accumulated middings on their own private forefronts and transported the muck away sufficiently frequently to their own arable land or else sold it to local farmers privately. Muck which was deposited in public areas, however, caused problems in terms of the flow of thoroughfares and malodorous nuisances if the muck was left unremoved for lengthy time periods. The council spent a great deal of time and energy removing muck which had been dumped anonymously at public locations, however, they may well have benefited from selling the muck which they collected from such locations to local farmers.

The respective issues of privies and casting filth into public areas were categorised as part of this broad category of solid waste disposal. As well as passing statutes to ensure that inhabitants cleaned out their own privies sufficiently regularly, to prevent them from overflowing, leaking or becoming 'noysome', Edinburgh Council also maintained the public privies in the tolbooth, the college and prison. In the financial year 1625-26, for example, city treasurer George Suittie paid 12s scots to two workmen for 'redding the previes in the prissone hous'.³⁰⁸ And, in the financial year 1626-27, moreover, city treasurer James Rae paid seven pounds scots 'dichting the latrens in the colledge this yeir' and three pounds scots for '30 laid of sand to the [college] latrine'.³⁰⁹ In the financial year 1627-28, furthermore, city treasurer James Rae paid 4 li 16s scots for '12 laid of lime to the latrine' in the college.³¹⁰ The college was the city's university, which was paid for and established by the burgh in 1582 and was referred to in council minutes and accounts as 'the college'.

³⁰⁶ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1636-1650.

³⁰⁷ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1623-1636. The Earl of Haddington was a prestigious title in the Scots Peerage.

³⁰⁸ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1623-1636.

³⁰⁹ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1623-1636.

³¹⁰ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1623-1636.

Street cleaning had become much more important by this period, receiving the second largest amount of attention compared to the second lowest amount of attention in the previous four decades. This category only accounted for 16% of discussions in this period, but they largely concerned citywide, macro-scale street cleaning, in stark contrast to the micro-scale repetitive discussions about the cleaning of particular streets and closes which had characterised the discussions of this topic in the preceding four decades. This suggests that local governors were taking a distinctly proactive approach to cleaning the entire city rather than merely reactively cleaning particular streets if and when they became intolerably dirty. The issue of appointing a scavenger was also given a significant amount of attention. The traditional, medieval system of street cleaning, whereby householders were expected to clean their own forefronts to the crown of the causeway,³¹¹ was clearly becoming impracticable in such a densely populated city complete with multi-story tenements and Edinburgh's councillors began to search for a more centralised alternative. It was in this period that Edinburgh's governors really began to embrace the challenge of revolutionising the city's street cleaning processes and systems. On 6th July 1608, the Convention of Burghs met at Selkirk and passed a statute which pressurised burgh councillors in Edinburgh and in burghs across Scotland to take more definitive action to improve waste disposal. It stipulated that in each burgh 'particular actis and statutes are sett down for removeing of all sic filth' and that each burgh shall 'put the samyn to dew executioun mair cairfulle and delegantle nor hes bene done heirtofore' under the pain of forty pounds Scots.³¹² Consequently, on 21st October 1608, Edinburgh Council recorded that 'the Kingis Majestie be his letter directed unto the burrowes' has, 'desyret that the burrowes suld tak ane substantiall ordour for purging of

³¹¹ 'Cleanse the Causeway' was a popular phrase in Scotland during this period. It literally meant to clean the street, but it was often used metaphorically to describe street riots. For example, it was used in relation to political events in 1520, when the rival Hamiltons and Douglasses were feuding after the arrest of Sir George Douglas, and the friction continued, culminating in the Edinburgh street battle known as 'Cleanse the Causeway' when seventy-two were killed, including Sir Patrick Hamiltoun. Donaldson, *James V-James VII*, p. 35.

³¹² *RCRBS*, vol. 2, p. 254 (06/07/1608).

thair townes fra [i.e. from] the filth and middings' at the 'conventioun haldin at Selkirk in July last'.³¹³ The sanitation ordinance passed at the 1608 Selkirk Convention, therefore, may well have inspired an attitudinal change among Edinburgh's councillors, who subsequently worked towards improving long-term street cleanliness by developing an innovative city-wide street cleaning system which took shape over the course of the seventeenth century.

In April 1633, inhabitants were instructed to deposit their waste onto the streets daily before 6am.³¹⁴ The councillors then commissioned the baillies to 'agrie with sum honest man for keeping ane horse and kairt', with which to collect the waste each morning, and they employed others 'to pas with quheill barrowis [i.e. wheel barrows]' to carry dirt to the close heads.³¹⁵ In December 1648, Edinburgh's councillors expanded this nascent street cleaning system by exacting 12d from each substantial householder to finance 'carieing away the mucke and keiping the streitt and vennells of this brugh clean'.³¹⁶ The street cleaning taxes were used to purchase more horses, carts, and employees, known as muckmen, to load the carts. Indeed, there is much evidence of purchases of equipment with which to clean the streets in the treasurer's accounts around this time. In the financial year 1644-45, for example, city treasurer John Faireholme paid to William Patoun, a smith, three pounds scots for '4 great batts of Iron with 4 great pinns of Iron maid for the corpe cairts that caried the rubbish of the streits'.³¹⁷ And in the financial year 1645-46, city treasurer John Jowssie paid 1 li 12s for 'a Carre sadell to a mucke leader' and 16s for 'five cast of flaring nails to naill two cuppe sladds to carrie filth out of the cittie'.³¹⁸ Clearly, Edinburgh Council were making significant investments in providing employees with suitable equipment in order to improve the cleanliness of the streets, in the face of an increasing population density and the expansion of dirty trades.

³¹³ ECA, SL1/1/11: Edinburgh Town Council Minutes, 1600-1609.

³¹⁴ ECA, SL1/1/14: Edinburgh Town Council Minutes, 1626-1636.

³¹⁵ ECA, SL1/1/14: Edinburgh Town Council Minutes, 1626-1636.

³¹⁶ ECA, SL1/1/17: Edinburgh Town Council Minutes, 1648-1653.

³¹⁷ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1636-1650.

³¹⁸ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1636-1650.

Dirty trades accounted for 13% of council discussions relating to waste disposal and environmental regulation. In this period, the council made numerous official attempts to move Edinburgh's slaughterhouses away from residential properties. And in 1618, for example, even the Privy Council intervened to ban the fleshers from depositing 'the blood and filth of slauchtered goodis upoun the streitis,' and it ordered them to transplant their slaughter houses to 'remote pairts of the burgh ... whair thair is no houses'.³¹⁹ Though noxious trades could not be expelled from the burghs entirely, because they produced vital goods for urban populations, regulating their activities in busy central streets was integral to enhancing the urban environment's olfactory and aesthetic qualities. Edinburgh's, Glasgow's, Stirling's and Aberdeen's burgh councils, as well as Scotland's Privy Council restricted fleshers. In 1522, for example, Stirling's fleshers were banned from publicly slaughtering livestock because of its unsightly appearance and unpleasant smell: 'no fleschor ... sla[y] ... any flecht but on the baksyid [i.e. backlands] or in thar bouis [i.e. booths]'.³²⁰ Moreover, in 1670, Aberdonian fleshers faced a similar ban: 'no flesher ... kill or slay any of the fleshes upon the streets, or befor ther dores looking thereunto'.³²¹ Similarly, in 1666, Glaswegian councillors ordered 'non[e] of the fleshouris within this burgh ... to tak upon hand to kill, slay or blood any kine, oxen, bull, sheip or lamb ... in view of the hie streit'.³²² That two Glaswegian fleshers, James Jhonstoune and Robert Brume, were apprehended in 1606 for 'slaying of ky [i.e. cattle] in the foirgait, contrar[y] [to] the statutes'³²³ suggests that such rules were upheld. Although these statutes were all passed primarily to hide unsightly and noxious slaughters from public view, they may also have aimed, secondarily, to curtail the deposition of offal and blood into public streets. It is significant that the city's surgeons do not feature in either the council minutes or Dean of Guild Court minutes for inadequate

³¹⁹ *RPCS*, vol. 11, p. 311.

³²⁰ *Stirling Recs.*, vol. 1, p. 17 (27/10/1522).

³²¹ *Abdn. Counc.*, vol. 4, p. 270 (27/10/1670).

³²² *Glasgow Recs.*, vol. 3, pp. 84-85, (20/09/1666).

³²³ *Glasgow Recs.*, vol. 1, p. 253, (09/09/1606).

disposal of human blood and other forms of human excreta, which would have been produced as a result of the various procedures which the surgeons carried out on their patients, which they would have been responsible for discarding. Rather than signifying that human blood caused less offence to inhabitants than animal blood and offal, it is far more likely that the city's surgeons buried such waste efficiently without ever creating a problem which was sufficiently significant to have entered the written council records.³²⁴ If the surgeons had deposited large amounts of human blood and other forms of human excreta in the streets, neighbours would surely have complained to the council or approached the Dean of Guild Court to have the nuisance suppressed. It is possible, however, that this occurred, but nobody complained to the court and therefore this nuisance never entered the written record.

Only 7% of discussions related to liquid waste disposal. The largest sub-category of discussion pertaining to liquid waste disposal were issues relating to maintaining the efficient flow of the city's web of open and closed sewers which ran down most main streets and down some closes. Indeed, there are many references to payments for work on the city's sewers in the treasurer's accounts. In the financial year 1673-74, for example, city treasurer James Southerland paid two masons, George Gigo and Hew Stoddart, 20 pounds scots for '22 days work at the syre in and beneath the correction hous and the syre of leith wynd leading therto'.³²⁵ Sewers inevitably sometimes became blocked with solid waste and overflowed into streets, closes and even into subterranean floors of properties, known as 'laich' or 'laithe' tenements. Sewers might have been uncomplicated, but they were well considered, planned and laid in convenient places. Indeed, that Edinburgh's High Street drains were 'verye conveniently contrived on both sides of the street: soe as there is none in the middle' impressed Sir William Brereton in 1635 when he visited the city.³²⁶ Sometimes, inhabitants

³²⁴ Similarly, there are no references to inadequate disposal of human blood or other excreta by the surgeons in York.

³²⁵ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1666-1690.

³²⁶ Brereton, *Journal*, p. 29.

impeded the flow of sewers by building bridges over them for the purposes of crossing them when they ran near to their properties, as described in this record of a discussion at a council meeting in September 1655,

... as be severall acts of counsell and proclamations emitted [to] the heretors [i.e. owners] of the lands of the Cowgait were ordained to remove thair brigstains from befoir thair laiche hous[es] which doeth stop the current of the watter and overflow the streits Which hitherto hes never beine fullie obeyit notwithstanding of all the certifications therin contened Thairfoir the provest baillies and counsell ordaines of new againe the hail heretors of the foir tenements of the cowgait to remove their brigstains from befoir the laiche hous[es] betwix [this day] & the twentie day of september instant with certification incaice of failie The samen will be broken and removed upoun thair awine chairges beside punishment of thair persone at the will of the magestratts.³²⁷

Although heretors were expected to maintain the sections of the sewers which flowed past their properties, and they had liberty to construct small-scale edifices to facilitate convenient drainage from and access to their properties, Edinburgh Council could and did intervene to regulate such constructions if and when they became problematic in terms of causing damage to neighbours' properties or preventing efficient drainage of liquid waste both within respective neighbourhoods and citywide.

Exploring Edinburgh Council's attitudes towards the issue of water purity in this period is arguably anachronistic, being a characteristically modern-day concern. But, while contemporaries were yet to understand the link between dirt and disease fully, they certainly understood that allowing dirt and rubbish to pollute the water supply was not conducive to good health or the commonweal. The issue was discussed explicitly and unambiguously, albeit only once, in a statute, passed in 1649, which forbade inhabitants from placing middings near to wells and from allowing their horses to drink at the public wells, thus suggesting that the councillors were well aware of the potential dangers of allowing muck to come so close to the water supply. The other two discussions regarded cleaning wells, which are somewhat ambiguous in that the councillors could well have been more concerned about

³²⁷ ECA, SL1/1/18: Edinburgh Town Council Minutes, 1653-1655.

the aesthetic appearance and tidiness of the wells, rather than the dirt on the well having had the capacity to contaminate the water supply, but it is certainly significant that people at this time devoted civic resources to cleaning wells. In the financial year 1635-1636, for example, city treasurer Charles Hamiltoun paid 10s scots for ‘2 new buckettis to dicht the wells’.³²⁸

In the second half of the seventeenth century, the population of inner Edinburgh increased even further by about a third from around 20,000 in the mid seventeenth century to approximately 30,000 by 1700.³²⁹ This population increase must be appreciated in the context of the relatively small geographical area of Edinburgh, which put extreme pressure on housing, and forced the subdivision of tenements and the infilling of closes even more rapidly than, and in addition to, the population increases of the previous decades. In the first half of the seventeenth century, Edinburgh lost many of its most prestigious visitors after the royal court moved south to London in 1603. The later seventeenth century saw a reverse trend as many elites flocked from London to Edinburgh following the decision in 1680 by King Charles II to appoint the Duke of York as Lord High Commissioner of Scotland, and James’ consequent residence at the Palace of Holyrood House.

Waste disposal and environmental regulation were discussed a total of 151 times during the later half of the seventeenth century, which far exceeded the total number of discussions of this area of city government over the previous ninety years. Clearly, Edinburgh Council was under unprecedented pressure to improve and centralise the city’s waste disposal processes and systems as a result of both the practicalities of the population increase and political pressure from Scotland’s national governing institutions.³³⁰

³²⁸ ECA, uncatalogued (removed from the Silver Safe): Treasurer’s Accounts, 1623-1636.

³²⁹ Dingwall, *Late Seventeenth-Century Edinburgh*, pp. 13-16.

³³⁰ See p. 95, an extract from the minutes of the Scottish Privy Council urging Edinburgh Council to take action to improve sanitary conditions in 1619: *RPCS*, vol. 11, pp. 530-531 (04/03/1619).

Fig. 21: Categorized Council Minutes (Statutes and Discussions) pertaining to Waste-Disposal and Outdoor Sanitation, 1650-1699³³¹

-	1650-1659	1660-1669	1670-1679	1680-1689	1690-1699	Total:	
-	No.	No.	No.	No.	No.	No.	%
Street-Cleaning	13	-	15	21	6	55	36
Combination	9	4	5	9	5	32	21
Dirty Trades	10	4	1	11	1	27	18
Solid Waste-Disposal	5	4	4	7	3	23	15
Liquid Waste-Disposal	4	1	-	2	4	11	7
Livestock	1	-	1	-	-	2	1
Water Purity	-	-	-	1	-	1	1
Total:	42	13	26	51	19	151	100
Percentage:	28	9	17	34	13	100	-

Street cleaning became yet more of a priority in the second half of the seventeenth century, dominating council discussions of this area of city government, accounting for 36% of such discussions in this period, and overtaking solid waste disposal as the most prevalent category in the previous two periods. An increasingly progressive attitude towards improving and adapting the processes and systems pertaining to the city's street cleaning became especially pronounced towards the end of the seventeenth century, and particularly in the 1680s, when a third of the total council discussions between 1560 and 1700 took place, almost certainly as a direct response to the Duke of York's residence in 1680 at the Palace of Holyrood House.

As can be seen in the table below, there was an unmistakable increase in discussions and statutes pertaining to street cleaning over time, especially towards the end of the seventeenth century. The councillors of the later seventeenth century were making significant efforts to reduce inhabitants' street cleaning responsibilities in order to keep the streets of this increasingly busy city clear and relatively clean.

³³¹ ECA, SL1/1/11-17: Edinburgh Town Council Minutes, 1600-1653.

Fig. 22: *Edinburgh Council Minutes pertaining to Street-Cleaning, 1560-1699, by Decade*³³²

Decade	No. of Street-Cleaning Discussions and/or Statutes
1560-1569	1
1570-1579	0
1580-1589	0
1590-1599	0
1600-1609	0
1610-1619	1
1620-1629	1
1630-1639	1
1640-1649	2
1650-1659	13
1660-1669	0
1670-1679	15
1680-1689	21
1690-1699	6
Total:	61

In November 1677, in a desperate attempt to combat insanitary streets, the councillors ordered the ‘wholl muckmen to be daylie and hourly imployed to cleange the streits’,³³³ and in October 1682, a ‘constant comittie’ was appointed to oversee the street cleaning team which met each Friday immediately after Edinburgh Council’s weekly meeting.³³⁴ By 1684, this committee, headed by a General Scavenger with two overseers working under him, supervised what had become a highly centralised team of thirty muckmen. Each night, the muckmen parked their carts at twenty locations to which inhabitants carried their waste after 10pm, and they emptied their carts each morning at the midding steads (holding dumps) at 7am in the summer and at 8am in the winter. This was carried out in addition to collecting solid waste which was deposited on the streets. However, in 1687, the muckmen stopped collecting waste from the streets, and instead only removed waste from the twenty locations where they parked their carts each night, but they still raked and cleansed the streets and the closes three times a week, and the Canongate and Cowgate in the winter. The following

³³² ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

³³³ ECA, SL1/1/29: Edinburgh Town Council Minutes, 1677-1680.

³³⁴ ECA, SL1/1/30: Edinburgh Town Council Minutes, 1681-1684.

contract, between Edinburgh Council and Archibald Home, General Scavenger in 1687, provides a useful insight into exactly how Edinburgh's team of muckmen functioned:

... to keep and maintaine twentie close cairts well pitched and tarred with ane cover of an tarr saile over each of them with two horses for each cairt at least which carits they are to be sett in such places of the streets as the magistrates shall appoint for receiveing of the excrements of this cittie ... to provide and maintaine upon their charges and expenses thirtie muck men beside twentie cairts and to cause the muck men thrice in the week raick the high streets of Edinburgh and closes therof and the high streets of the Cannogate and Cowgate in the winter time. And in the summer time when the streets are filthie and when dry either in summer or winter to sweep the same in the winter time befor nine a clock in the morning and in the summer time befor[e] seven a clock in the morning.³³⁵

The tar sails were used to protect the valuable muck against the potentially damaging effects of rainfall and evaporation, but they would also have had the effect of reducing the emission of malodours into the air. The street-cleaning system was adapted in 1692, when the muckmen were given the extra duty of patrolling the streets between 9pm and midnight every Saturday to report anyone pouring waste from windows.³³⁶ This adaptation is hugely significant and could even mark the origins of a city 'police' force. The task of a 'police' force is to enforce polite behaviour, which is essentially what these muckmen were doing.

It is clear that in this period, street cleaning taxes began to be exacted from substantial householders. For example, Lady Elphinstone, of Penicuik in Midlothian, had to pay street cleaning taxes because she owned a townhouse in Edinburgh. Three of her partially printed receipts have survived, for the years between 1687 and 1689; the second one states 'received by me from the Lady Elvingston the summe of 38sh Scots Money, and that for their proportion for cleanging the streets, viz. from Candlemass 1687 to Candlemass 1688'.³³⁷ These surviving receipts are in partially printed form and clearly represent a much larger volume of mass produced receipts which were printed, filled in and exchanged for street

³³⁵ ECA, SL1/1/32: Edinburgh Town Council Minutes, 1686-1689.

³³⁶ ECA, SL1/1/34: Edinburgh Town Council Minutes, 1692-1694.

³³⁷ National Archives of Scotland, GD/18/1914: Papers of Clerk Family on Penicuik, Midlothian, 1373-1966 – Receipts to the Lady Elphinstone for annuity tax and proportion for street cleaning, 1687-1689.

cleaning taxes from inhabitants at this time.³³⁸ In 1690, moreover, the constables of Edinburgh petitioned the Provost, Baillies and Councillors for ‘the privilege to be free of paying of any stent or inquisition for cleinseing of the streets for the yeres wherin we s[er]ve as Constables’ in recognition of their extra work duties, ‘throu[gh] the outstanding of the Castle and troublesome times your petitioners wes put to great trouble pains & expencess both be night & day’.³³⁹ It is unclear whether or not this request was granted because there is no reference to a decision either on the document or in the council minutes, perhaps because the decision was conveyed orally, but the constables’ request proves that street cleaning taxes were being collected.

Thus, by the late seventeenth century, Edinburgh Council had successfully created a highly centralised and well organised street cleaning system – a shining example of what could be done towards resolving early modern urban waste disposal problems. It is lamentable that increasing horse-drawn traffic and population growth absorbed much of the improvement which its development should have earned. Foreigners complained about Edinburgh’s insanitary conditions into the eighteenth century, and Edinburgh’s councillors admitted, in February 1681, that despite their efforts, Edinburgh was ‘still mor dirtie then formerlie’.³⁴⁰ However, that contemporaries rose to the challenge and confronted Edinburgh’s sanitation problems is far more important than their ultimate failure to combat it once and for all.

Dirty trades accounted for 18% of discussions in this period. In 1655, Edinburgh Council ordered the fleshers to move their slaughterhouses to between ‘the Muse well and the West port’,³⁴¹ and in 1662, it banned leasing High Street booths to be used as slaughterhouses outright.³⁴² Despite such official action, nevertheless, some fleshers continued to conduct

³³⁸ See pp. 145-146 for detailed information on how street cleaning taxes were collected in York.

³³⁹ National Archives of Scotland, RH9/14/66: Petition of the Constables of Edinburgh, 1690.

³⁴⁰ ECA, SL1/1/30: Edinburgh Town Council Minutes, 1681-1684.

³⁴¹ ECA, SL1/1/18: Edinburgh Town Council Minutes, 1653-1655.

³⁴² ECA, SL1/1/21: Edinburgh Town Council Minutes, 1661-1662.

their trade near to residential properties. However, that only 2% of extant insanitary nuisance cases dealt with by Edinburgh Dean of Guild Court pertain to dirty trades suggests that Edinburgh's fleshers were not causing an intolerable offence to a significantly large proportion of inhabitants.³⁴³

Solid waste disposal accounted for 15% of discussions in this period, especially concerning the transportation of muck out of the city. Edinburgh produced substantial amounts of manure which was sold to local farmers who used it to fertilise their arable land. Indeed, in 1795, a Granton farmer, George Robertson noted,

From Edinburgh and Leith are obtained about 40,000 cartload[s] of street-dung annually, which is commonly expended on the lands within 5 miles of town, though there have been a few instances in which it has been carried by sea to a greater distance. For collecting this manure, arising from the sweepings of the streets, which are for this purpose arranged into districts, the town employs scavengers, and the farmers in the neighbourhood furnish carts to carry it daily to byplaces, without the walls of the city, laying it together in dunghills, from which at their leisure they drive it to their lands. It costs from 1s to 1s 6d a load, of about a cubic yard each. Stable-dung is sometimes sold at a dearer rate, particularly where it is exchanged for straw (the whole dung for the whole litter) when it may cost perhaps 3s 4d. Thirty or 40 load to an acre is the usual allowance, and which has always the greatest effect when laid on new from the streets, but this, however, is only practicable in small quantities, great part of it being kept a whole year before it can be applied.³⁴⁴

Assuming that Robertson's estimate was accurate, and that greater Edinburgh and Leith produced 40,000 cartloads of manure in 1795, with a population of approximately 83,000, then greater Edinburgh and Leith may well have been producing as many as 22,650 cartloads of muck in 1700, with an approximate population of approximately 47,000.³⁴⁵ It is unsurprising, therefore, that the regulation of middings occupied such a large proportion of Edinburgh Council's time and energy. Middings were clearly a ubiquitous feature of Edinburgh's landscape and muck was integral to pre-modern urban inhabitants' way of life.

³⁴³ See chapter five for a detailed discussion of the minutes of Edinburgh Dean of Guild Court, pp. 172-192.

³⁴⁴ G. Robertson, *General View of the Agriculture of the County of Mid-Lothian: with Observations on the means of its Improvement* (Edinburgh, 1795), pp. 141-142.

³⁴⁵ M. Flinn, et al., (eds.), *Scottish Population History: from the seventeenth century to the 1930s* (Cambridge, 1977), pp. 198-199.

The team of muckmen was functioning well, and removing inhabitants' muck and rubbish much more efficiently as a result of improvements made to the system over time. However, some accumulations of muck and rubbish still required special attention and sometimes workmen still had to be employed to perform waste disposal tasks on an *ad hoc* basis if and when obstructions were caused by heaps of dung or rubbish which had been left in inappropriate locations. Indeed, the treasurer's accounts show that Edinburgh Council sometimes funded the removal of such accumulations of muck and rubbish from particular public areas from 1560 until around the 1680s when such entries disappear from the accounts. In the financial year 1666-67, for example, city treasurer James Currie paid 20 li 6s scots to 'the 4 men that caried away the rubish & stones out of the parliament close for the Convention of Estats'.³⁴⁶ In the financial year 1675-76, moreover, city treasurer Mungo Woods paid 8 li 13s 4d scots for 'taking away redd from Forresters wynd foott'.³⁴⁷ And in the financial year 1674-75, city treasurer James Southerland paid 2 li 8s scots for 'clanyng the new well within from all sand and filth'.³⁴⁸ The absence of such *ad hoc* jobs after 1680 surely resulted from the fact that by this time inhabitants were efficiently removing rubbish from the streets to the muckmen's carts which were parked each night at twenty permanent locations across the city.

The table and pie chart below show the broad categories of issues pertaining to waste disposal and outdoor sanitation which were raised and discussed at meetings of Edinburgh Council throughout the period, including both official statutes and general discussions.

³⁴⁶ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1666-1690.

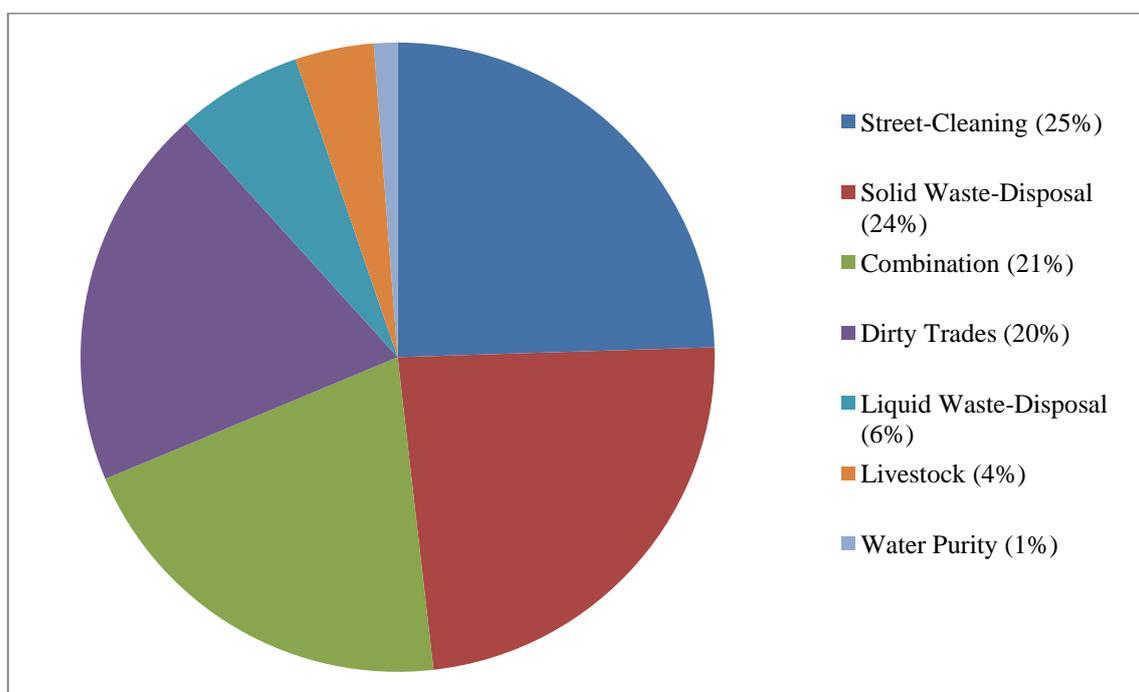
³⁴⁷ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1666-1690.

³⁴⁸ ECA, uncatalogued (removed from the Silver Safe): Treasurer's Accounts, 1666-1690.

Fig. 23: *Categorised Minutes of Statutes and Discussions at Edinburgh Council Meetings pertaining to Waste-Disposal and Outdoor Sanitation, 1560-1699*³⁴⁹

Categories of issues	Number of recorded discussions	Percentage of recorded discussions
Street Cleanliness	61	24.5
Solid Waste-Disposal	59	23.7
Combination of two or more categories	51	20.5
Industrial Waste-Disposal and Dirty Trades	49	19.7
Liquid Waste-Disposal	16	6.4
Livestock	10	4.0
Water Purity	3	1.2
Total:	249	100

Fig. 24: *Pie Chart showing Categorised Statutes and Discussions of Issues pertaining to Waste-Disposal and Outdoor Sanitation at Edinburgh Council Meetings, 1560-1699*³⁵⁰



Over the course of the entire period under discussion, the categories of street cleanliness and solid waste disposal were discussed most frequently, closely followed by industrial waste disposal and dirty trades. Issues pertaining to liquid waste disposal and livestock demanded substantially less attention from the city's councillors and water purity was discussed very infrequently indeed. These patterns are unsurprising in the context of a densely populated,

³⁴⁹ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

³⁵⁰ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

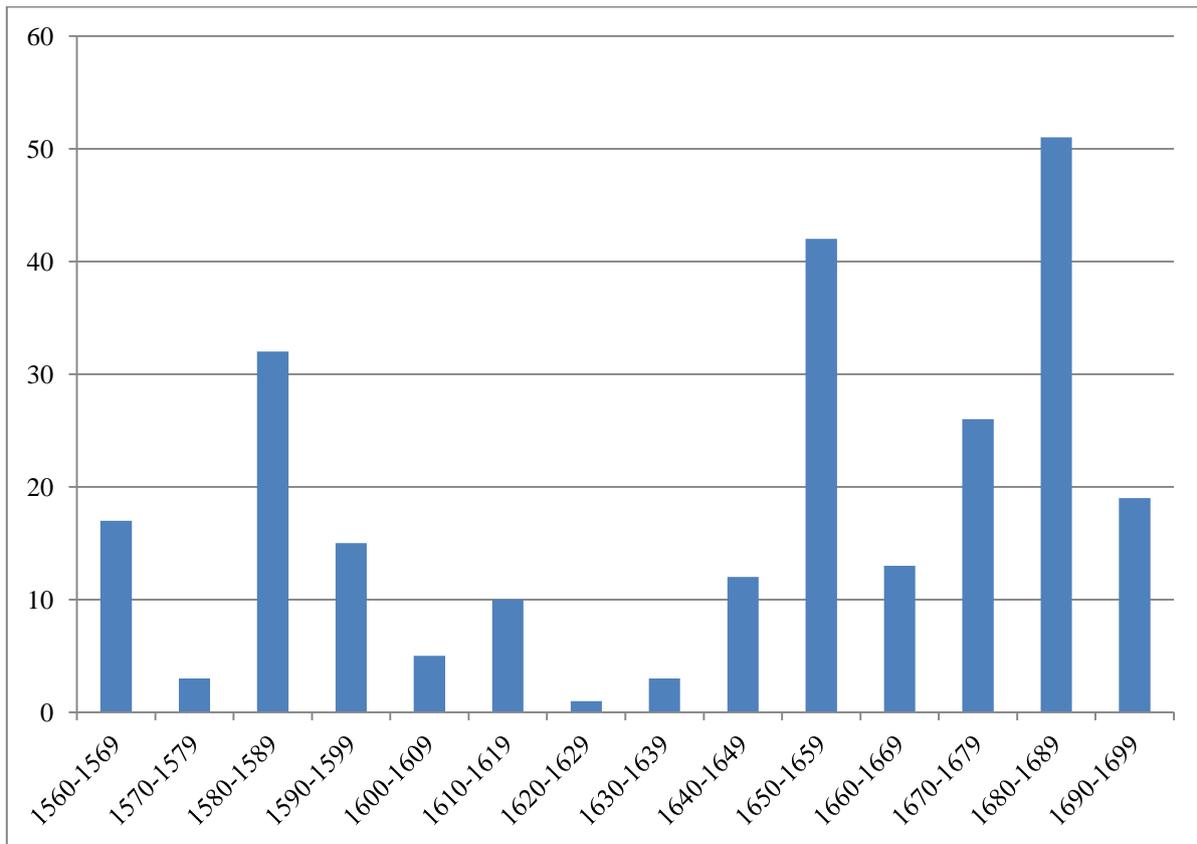
pre-modern city, in which large amounts of solid waste, especially manure, were generated and where dirty trades, such as candle-making and the flesher craft, were necessarily undertaken on a large scale in order to satisfy the needs of a swelling population. It is highly likely that Edinburgh Council discussed the most urgent matters most frequently, those which were causing the largest problems in the city's daily functioning, thus suggesting that the areas of street cleanliness, solid waste disposal, and to a lesser extent dirty trades, were most problematic and were under the most severe pressure whereas the areas of liquid waste disposal, livestock and water purity were either functioning relatively well or were not important priorities within city government.

Fig. 25: Categorized Minutes of Statutes and Discussions at Edinburgh Council Meetings pertaining to Waste-Disposal and Outdoor Sanitation, 1560-1699, by Decade³⁵¹

Categories of issues:	Solid Waste-Disposal	Street-Cleaning	Combination of two or more categories	Dirty Trades	Liquid Waste-Disposal	Livestock	Water Purity	Total:
1560-1569	5	1	2	7	1	1	-	17
1570-1579	1	-	1	-	1	-	-	3
1580-1589	13	-	5	9	1	4	-	32
1590-1599	6	-	4	2	-	2	1	15
1600-1609	1	-	2	1	-	1	-	5
1610-1619	5	1	1	2	1	-	-	10
1620-1629	-	1	-	-	-	-	-	1
1630-1639	1	1	1	-	-	-	-	3
1640-1649	4	2	3	1	1	-	1	12
1650-1659	5	13	9	10	4	1	-	42
1660-1669	4	-	4	4	1	-	-	13
1670-1679	4	15	5	1	-	1	-	26
1680-1689	7	21	9	11	2	-	1	51
1690-1699	3	6	5	1	4	-	-	19
Total:	59	61	51	49	16	10	3	249

³⁵¹ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

Fig. 26: Bar Chart showing the number of Statutes and Discussions per decade at Edinburgh Council Meetings pertaining to Waste-Disposal and Outdoor Sanitation, 1560-1699³⁵²



If, however, the categorised council minutes, both official statutes and general discussions, are split into respective decades, as shown in the table and bar chart above, more complex and precise patterns become apparent. Between 1560 and 1700, there was significant variation in the frequency with which Edinburgh Council discussed issues pertaining to environmental regulation, ranging from as little as one single discussion in the entire decade of the 1620s to as many as fifty-one discussions in the 1680s. It is impossible to say with any certainty whether this implies that all areas of environmental regulation and waste disposal were functioning so well in the 1620s that they required hardly any discussion at all by Edinburgh Council or rather that this decade in particular was one of marked indifference to issues pertaining to outdoor sanitation. Similarly, were these areas of city government failing so badly in the 1680s that they commanded Edinburgh Council's frequent

³⁵² ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

attention or was this simply a period of time during which the city's governors were especially conscientious about sanitation and therefore were making a special effort to try to improve sanitation systems and processes even though they were functioning relatively well? That in 1680 King Charles II appointed the Duke of York as Lord High Commissioner of Scotland, and that James' residence at the Palace of Holyrood House in Edinburgh prompted many English elites to flock to the city, may well have increased Edinburgh Council's motivation to upgrade street cleanliness in the presence of so many prestigious visitors. However, this is not to say that elites were more sensitive to malodours than the general populace. Rather, Edinburgh Council was more motivated to impress powerful and prestigious elites by presenting them with a more pleasant environment than they were to improve conditions for the inhabitants. The 1680s may well have been a time during which the city governors were especially conscientious about the cleanliness of the streets rather than a time during which the city was producing significantly more waste or inhabitants were disposing of waste in a more problematic manner. It is also significant that one of the peaks in the discussion of and the passing of orders to regulate this area of urban management, in the 1580s, coincides with a decade of particularly severe plague epidemics. The peak in the 1650s may well have been a reaction to the similarly severe plague epidemics Edinburgh suffered in the 1640s, which would still have loomed large in governors' and inhabitants' recent memories in the 1650s.

Though Edinburgh Council's top-down provision is important, there is much evidence to prove that inhabitants did not wait helplessly for such official intervention, but rather that they were proactive in improving and maintaining the sanitary standard of their neighbourhoods from the bottom, upwards. In September 1653, for example, five householders petitioned Edinburgh's council to apply for permission to clean the foot of their close. Edinburgh Council recorded,

...the Counsell taking to consideratioun the supplication presented to them be W[illia]m Mitchell, James Broun, Williame Hutchiesone, Mr Thomas Rig and Hercules Junken makand mentioun that qr they have certane tenements and housses ... at the fute of forresters wynd att the bak of the which land ther is a close east ward wherin fleshers and others cast in hudge middings of filth and consumes ther houses and mightilie annoyes the inhabitants of the samen that they cannot abid therin ... Humblie desiring a warrand to clenye that p[ar]t and to keip all clein by bigging up the fute of the close at least putting up a door on the fute and another a little above wher ther is no doors nor passages ... The Counsell ... grants warrand to them to put on a doore at the fute of the closse and another in the midst of the closse to be patent all the day long and fast in the nighttime and their doors to continue dureing the counsells pleasure.³⁵³

These neighbours did not wait passively and helplessly for Edinburgh Council to take action to improve their neighbourhood, but took the initiative proactively to improve their micro-scale environment themselves. Similarly, in October 1664, William Monteith and William Douglas, neighbours in Lies Close, complained to the Dean of Guild Court about,

... ane passage or transcomeing from lies clos to hearts close and which through the badnes of the times when the English were in Edinburgh were spoiled with middings and red [i.e. rubbish] and hes so continued ever since and seeing that ... the said passag aught to be clanyed and declared to be ane opin passage & pertain to there house for serveing the sam and ane opin passag in all time comeing and they ordained to clang the sam and build ther dyke and yaitt [i.e. gate] thereof.³⁵⁴

After inspection, the Dean of Guild and Council declared,

the place compleaned of is ane wild Jacks not only prejudiciall to nighbours by the smell bot also dangerous for young ones comeing that way and not decent to be within ane civill burgh and that it lies upon them as dewtie to sie the sam redrest Therfor grants judge and warrand to the compleaners to clanye and dight the place above specified mak the sam clean of dirt filth water & excraments and ordaines the sam to be ane opin passag for serveing the nighbours.³⁵⁵

In this complaint, the minutes note that such a filthy close was ‘not decent to be within ane civill burgh’. In a similar vein, the following words introduced a 1650 waste disposal regulation in Edinburgh Council’s minutes: ‘taking into their consideratioun the filthines of

³⁵³ ECA, SL1/1/18: Edinburgh Town Council Minutes, 1653-1655.

³⁵⁴ ECA, S1144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

³⁵⁵ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

the hie streitts and closes the lik wherof is not to be sein in any civill cittie'.³⁵⁶ Significantly, they wrote that similarly filthy streets were not to be found in any civil city, rather than in any *other* civil city. Therefore, in their minds, Edinburgh's filthy streets prevented it from taking its place as a civil city; thus, revealing the synonymy of cleanliness with civility in officials' minds. Clearly, contemporaries' desire to fulfil a perceived prerequisite of being termed a civil city motivated them to enhance street cleanliness.

Street cleanliness was integral to the 'common weal' and crucially underpinned the efficient government of a civil city. The inhabitants who complained to the Dean of Guild Court about Lies Close were clearly passionate about improving the standard of cleanliness in the outdoor environment of their neighbourhood. Undoubtedly, many more such bottom-up initiatives were taken by neighbours themselves, but negotiated verbally and without recourse to official bodies, and therefore have not survived in the medium of the records of official burgh institutions. Similarly, neighbours in the Low Countries worked together to force urban governors to improve the environment. On 30th October 1633, neighbours living in the Hoogstraat, the Poel and the Drabstraat in Ghent complained about the erection of a salt refinery. The urban government supported the neighbours, discontinuing the refinery's activities. Henceforth, buildings which produced noxious fumes could not be erected until the entrepreneur had obtained the written permission of their neighbours.³⁵⁷

Contemporaries responded to malodorous nuisances with a special sense of urgency, due to their belief in miasmatic transmission of plague and the potentially unwholesome properties of malodour in general. Therefore, one would expect to see a greater level of concern leading up to and during the warmer months of the year, when malodours were especially strong and intolerable, than during the colder months, when malodorous nuisances

³⁵⁶ ECA, SL1/1/17: Edinburgh Town Council Minutes, 1648-1653.

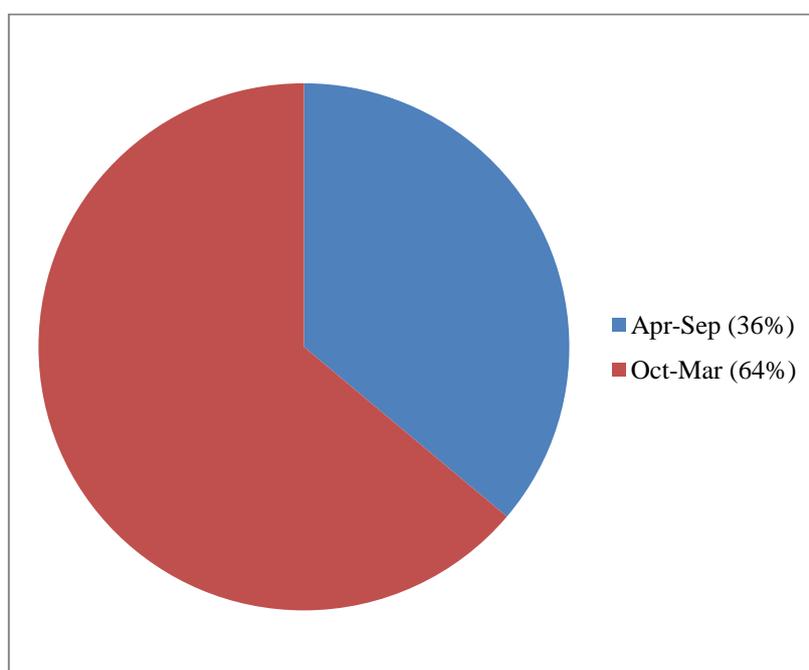
³⁵⁷ Deceulaer, 'Implications of the Street', pp. 197, 205. Deceulaer notes the absence of formal neighbourhood organisations in the low countries in the middle ages, highlighting that they played no formal institutional role in the administration of justice or in the policing of the town until after 1584.

were more tolerable. However, as the table and pie charts below show quite clearly, the opposite was true.

Fig. 27: *Categorised Statutes and Minutes of Discussions at Edinburgh Council Meetings pertaining to Waste-Disposal and Outdoor Sanitation, 1560-1699, by Calendar Month*³⁵⁸

Categories of issues:	Solid Waste-Disposal	Street-Cleaning	Combination of two or more categories	Dirty Trades	Liquid Waste-Disposal	Livestock	Water Purity	Total:	%
January	4	3	4	2	1	1	-	15	6.0
February	3	5	-	4	-	-	-	12	4.8
March	6	7	5	10	-	-	-	28	11.2
April	8	6	6	2	-	1	1	24	9.6
May	3	-	2	-	4	-	1	10	4.0
June	4	4	2	3	1	-	-	14	5.6
July	2	3	2	2	3	-	-	12	4.8
August	4	3	3	1	-	-	1	12	4.8
September	1	4	7	1	5	-	-	18	7.2
October	13	10	7	12	1	5	-	48	19.3
November	5	12	7	6	1	3	-	34	13.7
December	6	4	6	6	-	-	-	22	8.8
Apr-Sep	22	20	22	9	13	1	3	90	36.1
Oct-Mar	37	41	29	40	3	9	-	159	63.9
Total:	59	61	51	49	16	10	3	249	100

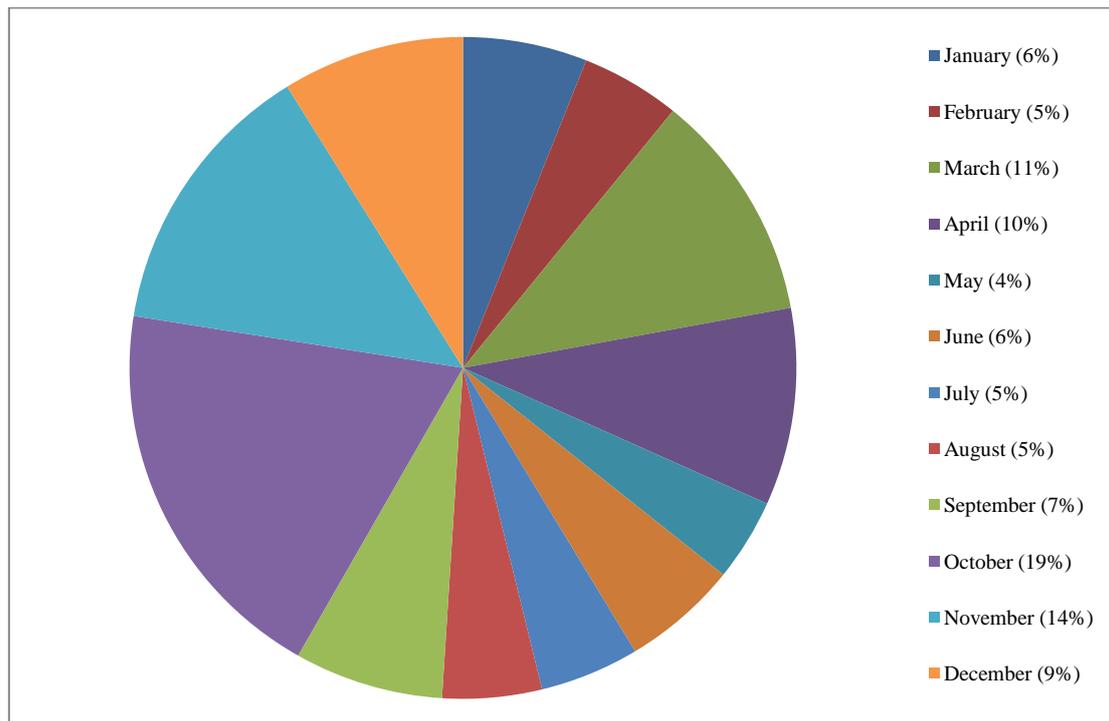
Fig. 28: *Pie Chart showing Edinburgh Council Minutes pertaining to Waste-Disposal and Outdoor Sanitation in Warmer and Colder Months, 1560-1699*³⁵⁹



³⁵⁸ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

³⁵⁹ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

Fig. 29: Pie Chart showing the Distribution of Edinburgh Council Minutes pertaining to Waste-Disposal and Outdoor Sanitation across Calendar Months, 1560-1699³⁶⁰



In fact, issues pertaining to sanitation were discussed most frequently in the month of October and in the following month of November, which is consistent with practical issues of administration because the feast of Michaelmas in October marked the end of one administrative and financial year and the beginning of another for Edinburgh Council. As the next year's Provost, Baillies, Treasurer, Councillors and other burgh officials took their oaths and the burgh's accounts were audited and the next year's begun, October, and to a lesser extent November, was a natural time at which to renew old statutes or to promulgate new ones pertaining not only to environmental regulation and sanitation, but to all areas of city government. The relatively longer hours worked by many urban inhabitants during the months of extended sunlight, however, may also explain the lesser extent of concern, as reflected in Council discussions of such matters, throughout the summer months.

Temperature, however, may well explain the relatively high numbers of discussions and statutes pertaining to outdoor sanitation in March and April, which together account for

³⁶⁰ ECA, SL1/1/3-36: Edinburgh Town Council Minutes, 1558-1701.

20.9% of all discussions and statutes throughout the period. Perhaps, with previous hot summers and the unpleasant experience of consequent malodorous nuisances in mind, Edinburgh Council took steps, proactively, as the warmer weather approached, to try to prevent malodours from escalating out of control in the forthcoming warm weather. This may also represent a catch up after the winter months, during which less attention may well have been paid to this area of urban management and also during which short daylight hours could well have encouraged increased deposition of waste material. This statute, passed by Edinburgh Council in April 1585, to regulate inhabitants' privies, seems to have been passed in direct response to the imminent hot weather:

Statutes and ordans for avoiding of all filth and evill savour wherby any inconvenient may arise in this somer seasoun that na maner of persouns suffer thair swine to pas in the hie streits, commoun clossis or vinells or furth of bands in any oppin places fra this day furth under the paine of slauchter of the swine and payment of ane unlaw of xl s so oft[en] as thai failyie and the owner to be putt in the thevs hoill or tolbuith until the unlaw be payet. Siclike that none suffer thair priveis to gorge, brek and run out in the streits, bot that thay caus the sam be cleneyit in dew times nor to haif any filth or middings lyand on the said streits above thre hours at anes under the paine of xl s and punishment of thair persouns at the will of the magestrats.³⁶¹

Perhaps badly maintained privies had proven particularly noxious in previous hot summers. The timing of this order is revealing. That it was passed purposely in preparation for 'this sommer season' suggests that the malodours emanating from such leaking privies, which were much more severe in warmer than in colder weather, concerned officials far more than the mere physical presence of privy waste and middings on the streets, which would have been as problematic in winter as in summer. When Edinburgh's councillors prohibited stable owners from piling middings near to wells, in April 1649, they stressed their carelessness 'espeaciallie now in the sommer time'³⁶² Dirt's smell was stronger during hotter months, between April and September, than it was during colder months, between October and March, whereas its appearance was equally unsavoury throughout the year.

³⁶¹ ECA, SL1/1/7: Edinburgh Town Council Minutes, 1583-1585.

³⁶² *Edin. Recs.*, vol. 8, p. 197, (18/04/1649).

Mark Jenner maintains that official documents such as council minutes and bylaws should be regarded as ‘formulaic rather than describing an empirically observed state of affairs’.³⁶³ But statutes and bylaws were clear and direct responses to councillors’ and civic employees’ empirical observations and inhabitants’ complaints. Admittedly, sections from previous statutes were sometimes reiterated verbatim to remind inhabitants to conform to previous stipulations. Indeed, councillors forbade loose swine within Aberdeen in 1696 using an almost identical copy of a former statute passed in 1654.³⁶⁴ Although most urban records were written in a formal style, they are not entirely ‘formulaic’; indeed, a significant few are highly opinionated. Statutes, council minutes and bylaws do permit valuable insights into urban officials’ perceptions of dirt. For example, that Glaswegian councillors thought, in 1638, that it was ‘cumlie ... decent ... and credible ... to have the calsayes frie of middings,’³⁶⁵ suggests that, conversely, they found streets filled with middings indecent and unworthy of credit. Far from having been written in a mechanical and ‘formulaic’ style, as Jenner would argue, this statute is loaded with the councillors’ attitudes and values. Rather than merely writing the midding regulation into the council register, they explained why they felt it was necessary. These councillors had a specific standard of public hygiene below which they perceived Glasgow’s streets to have fallen, and this statute conveys vividly both their desire to improve street cleanliness and their negative perception of dirt.

The frequency with which environmental regulation was discussed at meetings of Edinburgh Council is important, as are the categories of the environmental issues discussed. Top-down provision of facilities, services and regulation formed the foundation of environmental regulation in this period, despite the relatively high level of responsibility which inhabitants held over how they disposed of their waste and how they undertook

³⁶³ Jenner, “cleanliness and “dirt”, p. 144.

³⁶⁴ *Abdn. Counc.*, vol. 4, pp. 143, 319-320 (09/08/1654 and 30-09/1696). The similarities of these statutes can be observed in Appendix B, p. 231.

³⁶⁵ *Glasgow Recs.*, vol. 1, p. 396 (22/12/1638).

noxious trades and crafts. It is fair to say that Edinburgh Council's response to environmental problems was more reactive at the beginning of the period, in the later sixteenth century, and that it became increasingly proactive towards the end of the period, in the later part of the seventeenth century. It is important not to discount the important efforts made by inhabitants themselves to improve and maintain sanitary standards in their own neighbourhoods. Environmental regulation in Edinburgh was by no means exclusively top-down.

York

Between 1561 and 1600, York Corporation recorded by-laws and discussions of issues pertaining to waste disposal and environmental regulation in its official house minute books a total of fifty-five times, compared to eighty-two in the first half, and forty-eight in the second half, of the seventeenth century.

Fig. 30: Categorized House Minutes pertaining to Waste-Disposal and Outdoor Sanitation, 1561-1600³⁶⁶

-	1561-1570	1571-1580	1581-1590	1591-1600	Total:	
-	No.	No.	No.	No.	No.	%
Street-Cleaning	1	1	5	8	15	27
Solid Waste-Disposal	-	3	5	3	11	20
Dirty Trades	-	-	5	4	9	16
Livestock	2	1	3	2	8	15
Liquid Waste-Disposal	1	1	2	-	4	7
Combination	1	1	1	1	4	7
Water Purity	1	1	1	-	3	6
Air Pollution	-	1	-	-	1	2
Total:	6	9	22	18	55	100
Percentage:	11	16	40	33	100	-

Such references to this area of city government range from as few as six to as many as twenty-two times in one decade, compared to as few as four and as many as thirty-one per decade in the first half of the seventeenth century, and as few as three and as many as twenty-one in the second half of the seventeenth century. The overwhelming majority of references

³⁶⁶ YCA, B23-B40: York Corporation House Books, 1560-1706.

to this area of city government recorded in the house minutes between 1561 and 1600 were recorded in the 1580s and 1590s (73%), and far fewer were recorded in the 1560s and 1570s. Of course, the waste disposal systems and processes referred to during this period were not designed from scratch in 1560, by which point many long-established systems were already in operation, and had been functioning efficiently in the city for centuries. But in the last four decades of the sixteenth century, these traditional, inherited systems were modified and became increasingly organised, more centralised and less reliant on inhabitants' compliance, which the corporation seems to have instigated intentionally as a direct response to the population rise strongly indicated by the estimates above.

The two largest priorities for the corporation in this area of city government were street cleaning and the disposal of solid waste. The traditional medieval forefront system, whereby householders were required to clean the area before their properties up to the crown of the street had survived intact throughout the medieval period, and in 1560 it was alive and well. At the beginning of this period, householders were still responsible for arranging the removal of their own rubbish and the removal or sale of their manure from outside their properties as well as for keeping any open sewers and drains pertaining to their properties scoured and flowing efficiently by sweeping them out frequently with water, using simple brooms which were known as besoms.³⁶⁷ The constables were responsible for ensuring that all inhabitants carried out this duty with respect to their own property within the bounds of their own parishes at least twice weekly, and this duty applied to private householders, business-owners and guardians of public buildings and institutions, such as the churchwardens of York's many parish churches. In June 1564, for example, the corporation issued a reminder 'to every constable in the Cite and suburbs' of their responsibility 'to see [i.e. oversee] the streets and chanells every of theym within ther rowmes [i.e. bounds] cleane swept and clensed with water and besoms' and also that 'all the dung and filth [be] avoided [i.e. removed]' every

³⁶⁷ A besom was a broom made from a bundle of twigs tied around a central pole.

Wednesday and Saturday, ensuring that they presented anyone failing to comply under the threat of their own imprisonment.³⁶⁸ Those who were presented for failing to carry out those duties in particular, were to be fined 10s for the Chamberlain's use and this fine was to be exacted from the occupier, whether they owned or rented the property concerned. While the medieval forefront system was clearly still operational, the obvious need to issue reminders to the constables who implemented and maintained this system on the ground out in the parishes suggests that it was perhaps under some strain and in need of modification.

In April 1580, the corporation made an important decision to appoint four Scavengers, one for each ward, to clean and remove waste from the streets on Tuesdays, Thursdays and Saturdays, 'all that every man will putt owte at there doores', and to charge inhabitants for this non-negotiable, citywide service.³⁶⁹ This heavily centralised and markedly different street cleaning and solid waste disposal system, which was designed to reduce the city's reliance on householders' compliance, albeit running alongside rather than actually supplanting the forefront system, was further developed later that year in October. It was decided that the 'constables of everie parishe shall collecte and gather the money assessed upon the inhabitants within ther severall parishes for the skavengers', and that this money would be collected twice yearly at the Annunciation and Michaelmas, from 1581 henceforth. In addition to the scavengers receiving 'all the donge and filth for their paines', the constables were 'to pay the skavengers wages'.³⁷⁰ York's first Scavengers were called John Jackson, William Drinkall, Oswald Chambers and Robert Shearshaw, for Walmgate, Monkward, Bootham and Micklegate wards, respectively and they began work cleaning the streets and removing rubbish and dung from the streets the following Saturday, before the Sabbath. This marked change in the city's waste disposal was promulgated and explained to inhabitants

³⁶⁸ YCA, B23: York Corporation House Book, 1560-1565 (14/06/1564).

³⁶⁹ YCA, B27: York Corporation House Book, 1577-1580 (13/04/1580).

³⁷⁰ YCA, B27: York Corporation House Book, 1577-1580 (21/10/1580).

through the medium of their parish churches.³⁷¹ However, this does not mean that York's environmental regulation had a religious dimension. Rather, the parish churches were utilised as practical facilities for the dissemination of important information because large numbers of inhabitants were gathered in these places at one time. Moreover, the use of parish churches as a medium for promulgating regulations reflects the overarching nature of early modern local government and urban management more generally.

The street cleaning system was established with the expectation that inhabitants would leave their rubbish and agricultural dung out at their own doors to be collected by the scavengers on Tuesdays, Thursdays and Saturdays, and this method of disposing of most sources of solid waste seems to have been working well. However, it is clear that inhabitants tended to dispose of their human waste in a very different manner. In May 1583, for example, the corporation issued an order forbidding inhabitants to 'lay, cast or empty any tubbes or other filth in any place within this cittie, but to bury the same in ther owne ground' under the pain of 2s 4d and that 'the wardens of every ward to appoint a convenient place without every barr ... wherein the inhabitants of every ward may lay and put ther tubbes and filth', and that in the meantime inhabitants were to be instructed to deposit it at St George's Close.³⁷² The use of the term 'filth' suggests that this pertained to human waste rather than 'donge' or rubbish, but it is impossible to say for certain. Most inhabitants would have deposited their own bodily waste into dry privy pits, hence the reference to burying it on their own ground, but clearly a large number of inhabitants had no such facility and as this was not collected by the Scavengers, they must have deposited it in various public places instead. No further records were made in relation to the eventual location of such disposal points, but it is possible that the disposal of human waste in particular was not perceived as a fitting subject for the corporation's official house minute books and may well have been decided

³⁷¹ YCA, B27: York Corporation House Book, 1577-1580 (21/10/1580).

³⁷² YCA, B28: York Corporation House Book, 1580-1585, (10/05/1583).

unofficially between the corporation and the wardens, but not recorded. This would also explain the somewhat ambiguous and implicit references to ‘filth’ rather than explicitly explaining the difference between the waste collected by the scavengers and the tubs of ‘filth’ deposited in public places around the city by inhabitants. The house minutes contain minimal references to the provision of public privies, maintained by civic employees. In January 1600/01, the corporation recorded that 10s ‘shalbe given forth of the Chamber to Mr Sheriffe w[hi]ch they paid for clensing of the lowe grate or p[ri]vie in the womans kidcote’.³⁷³ The women’s kidcote was the name of the women’s prison in the city, which was situated on Ousebridge and for which the Sheriff was responsible. There was also a public privy in the King’s Wall, which was funded by the Corporation, but a reference to it in June 1664 suggests that they were trying to prevent ‘common’ access to it: ‘the Company of Tailors and Drapers have lib[er]ty to make upp a Crosse wall on the Cittyes ramper to p[re]vent the passage of late made comen to the house of Office in the Kinges wall’.³⁷⁴ As was concluded in relation to Edinburgh, although there are minimal references to public privies in the written records, it is highly likely that there were many more private, semi-private and perhaps even fully public privies in the city which never entered the written record.

Despite the advances made by appointing centrally funded scavengers to remove waste, and despite the constables’ efforts to ensure that householders maintained their own forefronts, some locations continued to be used as dumping grounds. In February 1587, for example, an order was issued against dumping waste at the Staith, and Hugh Jenkins was appointed to present and fine anyone who dumped waste in this strategic area henceforth 3s 4d,

... no maner of person ... shall lay ... anye maner of donnge or filth at the
Puddinge Hooles or staith or any other place but onelye at the Castle Milnes at

³⁷³ YCA, B32, York Corporation House Book, 1598-1605 (09/01/1600/01).

³⁷⁴ YCA, B38, York Corporation House Book, 1663-1688 (01/06/1664). As in Edinburgh, there is no significant correlation between the location of York’s public privies and the locations in which the highest numbers of reported insanitary nuisances occurred.

the bancke their upon the paine of iij s iiij d to be forefacted for everye offence, thone halfe to the Common Chamber, and thother halfe to the presenter and that the keeper of the said staith shall present here after from time to time all defaultes which he canne learne of contrary this order upon like paine. And nowe Heughe Jenkins is appointed to present thes offences, and to have the ... fines³⁷⁵

In the financial year 1585-86, moreover, the Chamberlain paid James Allanby and Ralph Magham 5s for ‘keping clene the stath & for bringing in coles & turves to the common chamber’.³⁷⁶ In February and December 1590, and again in February 1593, moreover, the corporation issued orders against dumping rubbish in Hungate, seemingly a particularly problematic hotspot for such inconsiderate disposal.³⁷⁷ Hungate’s cleanliness would certainly have suffered from inhabitants’ preponderance to drive their cattle down that particularly straight thoroughfare running down towards the River Fosse to allow the cattle to drink from the riverbank at its base. Indeed, the corporation ordered Hungate to be ‘clensed by comon dayes worke of the parishes next adjoyning’ because ‘the inhabitantes have enformed the place to be most convenient for watering ther cattell’.³⁷⁸ That some individuals continued to dump waste in numerous convenient locations across the city, despite the corporation’s efforts to provide citywide systems to remove the potential for this kind of behaviour, suggests that the systems in place clearly did not function efficiently. This was either because the systems were not sufficiently universal and comprehensive or because the fines for not complying with the systems were not sufficiently effective as deterrents.

The scavengers continued to clean the main thoroughfares and remove rubbish and dung which had been deposited onto the streets, but the corporation still had to respond to problematic accumulations of waste by making special arrangements to have particular areas

³⁷⁵ YCA, B30, York Corporation House Book, 1587-1592 (28/02/1587).

³⁷⁶ YCA, CB6, Chamberlains’ Books of Account, (1585-1586).

³⁷⁷ YCA, B30, York Corporation House Book, 1587-1592 (15/02/1589/90 and 04/12/1590); YCA, B31: York Corporation House Book, 1592-1598 (16/02/1593).

³⁷⁸ YCA, B30, York Corporation House Book, 1587-1592 (29/07/1590). Moreover, out of my data set of the extant records of 1,152 fines for insanitary nuisance received by the Chamberlain as a result of presentments by various city courts, between 1559 and 1687, ten of the 156 (6%) which detailed the specific location of the nuisance occurred in Hungate, the third most frequently cited location after Toft Green and Without Micklegate Bar.

cleaned. In November 1590, for example, the inhabitants of two parishes, Allhallows and St Michael's at Ousebridge, were asked to contribute 'towardses the clensinge of the dongehill at Castlegate posterne and the donge in the laine betwene Castlegate and the posterne'.³⁷⁹ The dung was then taken to the previously appointed place in St George Close. Similarly, in September 1594, the parishes of Monk Ward were ordered by the corporation to remove 'the donge which is laid in the hie waye without monckbarre' and 'the donge in hungat' by means of common day work by all able-bodied people over the age of sixteen years living in the relevant parishes.³⁸⁰

York Corporation made significant advances in the areas of solid waste disposal and street cleaning, and the appointment of four scavengers surely alleviated much of the burden which had previously been placed on householders' shoulders, but while it certainly helped, it was by no means a comprehensive system and householders' responsibility for the cleanliness of their own forefronts continued alongside it. Indeed, a lease on a house, garden and orchard without Monk Bar, issued in 1590, a whole decade after the appointment of scavengers to clean the main thoroughfares three times a week, stipulated that the tenant had 'to maintaine the fences and to repaire and keepe cleane the hiewaye which [is] joininge upon the said gardin and orchard'.³⁸¹ Even if the main thoroughfares were to be cleaned by the scavengers, the responsibility for cleaning smaller lanes and streets rested firmly on householders' shoulders. In June 1593, for example, householders were again reminded of their obligation under pain of 3s 4d 'to sweepe their dores twice everye weeke viz Satterdaye at night and tewsdaye at night weeklie and that everye one after everye swepinge shall cast downe a soo [i.e. bucket] full of water upon their pavinge and in the guttors to washe and cole the same withall'.³⁸² Manually flushing the gutters with water was an integral part of cleaning

³⁷⁹ YCA, B30: York Corporation House Book, 1587-1592 (24/11/1590).

³⁸⁰ YCA, B31: York Corporation House Book, 1592-1598 (13/06/1594).

³⁸¹ YCA, B30: York Corporation House Book, 1587-1592 (18/12/1590).

³⁸² YCA, B31: York Corporation House Book, 1592-1598 (13/06/1593).

one's forefront, but sweeping solid waste into the gutters was unacceptable, as the corporation emphasised in a forefront order in September 1594 under the pain of 12d:

[inhabitants are ordered] to clense all the stret myer & other such like annoyances forth of the stret & channells ev[er]y one so farr as his tent [i.e. property front] extendith & not [to] swepe any of the same either in or aft[er] any shoure [i.e. shower] or at any other time downe the chennell towards the grate at the southend of Fossebridg[e] nether to suffer any thing to discend downe the said chennells towards to [the] said grat[e] but only water.³⁸³

In July 1598, the corporation ordered the city's constables to pay workers to sweep inhabitants' forefronts for them, if they refused to do so after 'haveinge reasonable warninge to doe the same', and to charge them for the work done.³⁸⁴

The next most frequently discussed issue pertaining to environmental regulation was the problematic and perennial public nuisance of free-roaming livestock. In July 1565, for example, the corporation renewed an ancient ordinance 'ageinst keping of iijj foted bestes upon the common moates', which meant the moats which ran inside and outside of the city walls, which were dry for most of the year, thus providing an open space on which livestock could be grazed.³⁸⁵ In December 1575, moreover, the corporation passed the following by-law ordering householders to bind their swine securely in direct response to this nuisance having arisen as a significant issue at the recent wardmote court and sessions of the peace:

Wherbie a great abuse hath bene and yet is used by diverse citzens that kepith swine and lets them run abroade in the streets not onely to the great noysance, but also against the speciall charg geven at the Warde Mote Courts and Sessions holden within the said Cittie; for reformacon wherein it is now agreed that it shalbe lawfull to anie the officers at mace to my L[ord] Mayor and to the Sheriffs sergiants and also to the constables to take anie swine of anie citizen that they finde abroade in the streets except they be or goe to the market place to be sold and the same swine so taken they shall impound in the common fold of that ward wherein the said swine shalbe taken; and they to se[e] that the said swine shalbe there saiflie kept unto suche time as he or they the owners thereof sall pay to the same officer vjs viiijd.³⁸⁶

³⁸³ YCA, B31: York Corporation House Book, 1592-1598 (13/09/1594).

³⁸⁴ YCA, B31: York Corporation House Book, 1592-1598 (24/07/1598).

³⁸⁵ YCA, B24: York Corporation House Book, 1565-1572 (13/07/1565). A similar ordinance was passed in April 1570: YCA, B24: York Corporation House Book, 1565-1572 (03/04/1570).

³⁸⁶ YCA, B26: York Corporation House Book, 1574-1577 (09/12/1575).

And in June 1589, the corporation delegated the responsibility of punishing inhabitants who failed to bind their swine properly to the searchers of the occupation of butchers:

Also it is ordeined that if the searchers of the said occupacion of butchers at any time make any lawfull presentment to the Lord Maior for the time beinge of anie person within this cittie or suburbs for keepinge any swine contrarie to this there ordinarie except the Lord Maior and Aldermen to permitt and suffer swine to be kept in convenient places in winter seazon viz., betwene Michaelmas and May Day as haith bein heretofore used that the searchers and occupacion of butchers shall have the moytie and half partie of all suche fines as shalbe received for the said presentment by them presented.³⁸⁷

Similarly, in October 1598, the Tipstaves were given authority to punish those whose swine roamed freely through the city and in the suburbs.³⁸⁸ The successive efforts taken by the corporation to curtail and regulate the nuisance of free-roaming livestock in the later sixteenth century suggests that unbound livestock was causing significant problems in the city during this period.

Dirty trades did not cause particularly significant problems in late sixteenth-century York. The references to dirty trades in this period are to soap-boiling, butchery and lime-burning. In January 1584, for example, Giles Howland was admitted to perform the craft of soap-boiling in the city, with the preventative warning ‘that if the said Giles shall happen to do any act or thinge in or by selling and boiling the said sope that shall by any meanes be thought and judged by the Lord Mayor and Aldermen to be hurtfull to the cittizens that then and from thenceforth the acte to be void and of none effect’.³⁸⁹ This is evidence of a distinctly proactive, rather than reactive, approach to limiting the negative impact of dirty trades on inhabitants’ life quality. The use of the word ‘hurtfull’ is revealing in that it suggests a link between regulating dirty trades and protecting inhabitants’ health and wellbeing. In August 1585, moreover, to reduce the malodorous impact of the butchery craft, one location in each ward was set aside specifically for the burial of butchery waste: the lane beside Bowbridge in

³⁸⁷ YCA, B30: York Corporation House Book, 1587-1592 (13/06/1589).

³⁸⁸ YCA, B31: York Corporation House Book, 1592-1598 (04/10/1598 and 11/10/1598).

³⁸⁹ YCA, B28: York Corporation House Book, 1580-1585 (31/01/1584).

Micklegate ward; the street without Fishergate in Walmgate ward; at Fosse side beside Monkbridge in Monk ward; and in ‘some owte corner in the Horsefair’ in Bootham ward.³⁹⁰

This is evidence of an explicit attempt to organise how the city disposed of its waste on a practical level in order to make it more efficient.

Between 1601 and 1650, issues pertaining to waste disposal and environmental regulation were recorded in the house minutes a total of eighty-two times, ranging from as few as four to as many as thirty-one in one decade.

Fig. 31: Categorised House Minutes pertaining to Waste-Disposal and Outdoor Sanitation, 1601-1650³⁹¹

-	1601-1610	1611-1620	1621-1630	1631-1640	1641-1650	Total:	
-	No.	No.	No.	No.	No.	No.	%
Solid Waste-Disposal	3	3	2	6	13	27	33
Street-Cleaning	-	4	3	4	12	23	28
Liquid Waste-Disposal	-	3	2	5	1	11	13
Livestock	-	4	2	3	2	11	13
Dirty Trades	-	3	-	1	2	6	7
Combination	1	-	-	1	1	3	4
Air Pollution	-	-	-	-	-	-	-
Water Purity	-	1	-	-	-	1	1
Total:	4	18	9	20	31	82	100
Percentage:	5	22	11	24	38	100	-

Most references were made in the 1610s, 1630s and 1640s and far fewer were made between 1600 and 1610 and in the 1620s. The corporation discussed this area of city government significantly more than they did either in the last four decades of the sixteenth century or in the later half of the seventeenth century. During this half century, waste disposal and environmental regulation attracted significant levels of focused attention from York’s local governors.

As in the later sixteenth century, the most frequently recorded issues within this area of city government were the disposal of solid waste and street cleaning. During this period, the corporation began to discuss such issues in a distinctly far more serious tone, and in

³⁹⁰ YCA, B29: York Corporation House Book, 1585-1587 (09/08/1585).

³⁹¹ YCA, B23-B40: York Corporation House Books, 1560-1706.

relation to matters of public health, explicitly connecting the constables' failure to ensure inhabitants carried refuse and dung away and swept their forefronts, and the consequent accumulations of waste and dirty streets in the city, with the increased threat of a plague epidemic. This is an important discontinuity in the corporation's attitude towards environmental regulation and waste disposal and surely resulted from the fact that York suffered from three plague epidemics, in 1604, 1631 and 1645. That this area of city government was not only discussed more frequently at council meetings but also in a far more serious tone in the early seventeenth century was a direct response to the plague epidemics.

In March 1600, the corporation called 'div[er]se Constables' into the Mayor's court 'for not causing ther p[er]sons to swepe ther dores wekely & to cary the heapes & myer away'. The constables responded to the accusation that they were failing in their duty by explaining 'that they have sundry times given warning w[hi]ch hath bene lightly regarded and that they cannot get them to clense the same in dewe time'. Nevertheless, the corporation 'feared that if the same be no bett[er] clensed when warm wether comes [in] June then it hath bene this winter time that infeccion maye growe therby', and issued harsher warnings that defaulters of this obligation would be referred to the wardens of their ward and committed to ward and 'ther so remaine till the same be clensed & during the pleas[u]r[e] of the said wardon'.³⁹² If, however, it was found that the constable was at fault, rather than the inhabitant, he would have been committed to ward instead. This record is distinctly different from those of the later sixteenth century. There is an unmistakable fear of infection and an unambiguously serious tone and sense of panic. Clearly, impending hot weather and the perceived fear of malodours and miasma was a major motivating factor in passing this bylaw.

Only one month later, in April 1600, the corporation recorded a similarly serious order regarding accumulations of waste and dung in Hungate. The Sheriff made arrangements

³⁹² YCA, B32: York Corporation House Book, 1598-1605 (19/03/1600).

for Hungate to be cleaned, yet again, but they were not simply reacting to the problem; this time, they attempted to prevent its recurrence proactively. They threatened to fine inhabitants who disposed of waste in Hungate henceforth 5s for ‘ev[er]y soofull or tubbe full’ and even threatened that inhabitants who flouted the prohibition of dumping waste in Hungate would ‘be ponished in the pavement stockes’. This order was promulgated through the medium of the constables and the parish churches, emphasising to the constables ‘to go thorowe yo[u]r p[ar]ish from howse to howse and give p[ar]ticuler notice herof to all housholderis in the same p[ar]ishe’ and to ‘deliver this note to yo[u]r Curate whom I require to publishe the same to thair p[ar]ishioners in yor church on sondaye next when most resorte of the same shalbe ther’. Again, the serious tone and the harsher punishments resulted from the threat of plague, as they elaborated that Hungate’s insanitary condition ‘is not onlye verye noysome to the quenes subjectes ... aswell in ther passage by filth under fote as by straitininge ther waie But also the same is greatlie to be feared to brede infeccon in that p[ar]te of this Cittie when the wether shall growe warmer’.³⁹³ The corporation realised that by prohibiting waste disposal in Hungate, they would simply transplant the problem to another location, so they planned instead to find another place in which inhabitants could dispose of their waste, and to use the postern close in Lathrop until such a location could be found.

In March 1603, in preparation for James VI and I’s visit to the city, the corporation ordered a general clean up ‘for the more Bewtefyinge of this Cittie’, including the removal of all dunghills and filth and the constables were ordered to make a special effort to ensure that inhabitants cleaned and paved their forefronts.³⁹⁴ There is no record of any extra street cleaning or waste removal in response to the plague epidemic of 1604 specifically, but inhabitants were warned either to kill or confine to their houses all dogs and cats, which were

³⁹³ YCA, B32: York Corporation House Book, 1598-1605 (23/04/1600).

³⁹⁴ YCA, B32: York Corporation House Book, 1598-1605 (29/03/1603).

believed to be instrumental in spreading plague between humans.³⁹⁵ Despite previous repeated efforts to deter inhabitants from dumping rubbish at the staith, the corporation still had to appoint a man called James Sidgewick ‘to watch and loke unto all suche as do lye anie filth or donge at the staith and to p[re]sent unto my Lord maior for the time beinge all such as shall offend therin’.³⁹⁶ The Staith was obviously a very convenient place to dump one’s waste.³⁹⁷ The picture conjured up by the repeated orders against dumping rubbish in public places is one of flagrant disregard for the environment by the majority of inhabitants and a chaotic urban landscape in which there was a distinct lack of organisation in relation to waste disposal. However, while some inhabitants dumped their rubbish in inconvenient places and caused significant problems for the corporation by blocking thoroughfares with waste and creating insanitary nuisances which reduced the quality of their neighbours’ daily lives, others disposed of waste in an organised and careful manner.

Dung was an incredibly valuable asset in this early modern city and inhabitants went to great lengths to preserve it for sale. Within each neighbourhood, there were informal, small-scale systems for disposing of waste, which functioned from the bottom-up. In October 1610, for example, the corporation discussed the future of a communal midding in Bootham Ward because its previous owner, Percival Wilson, had died. For permitting his neighbours to pile their dung on his land, the City had paid him 3s 4d each year, ‘be sides the dunge’ which could be sold. Unfortunately this council record does not detail how long this arrangement had been in existence, but it seems to have been quite a long-established system, which undoubtedly was replicated across the city, and it only features in the council record as a result of his death and the need to renew this contract for the future. It seems that Percival’s widow was unwilling to continue the contract: ‘wheras the saide percivall wilson wife after

³⁹⁵ YCA, B32: York Corporation House Book, 1598-1605 (11/05/1604).

³⁹⁶ YCA, B33: York Corporation House Book, 1605-1613 (18/02/1608).

³⁹⁷ Indeed, out of out of my data set of 1,152 fines for insanitary nuisance received by the Chamberlain as a result of presentments by various city courts, between 1559 and 1687, nine out of the 156 (6%) which detailed the specific location of the nuisance occurred at the Staith, the fourth most frequently cited location after Toft Green, Without Micklegate Bar and Hungate.

her husband death refused to kepe the same in suche sorte and upon suche Condicons as Mr Thomas Jackson and Mr Robte Askwith Aldermen two of the wardons of Bowthome warde did thinke fitt'. Therefore the contract was passed to 'George Chapman officer of the same warde' who was 'from hensforth dureing the pleasure of this Court [to] have all suche dunge as shall hereafter be laide on the same place', under the provison that 'he do cause the strete or Cawsey ther to be Clean kept and do repaire from time to time the Cawsey or strete from thend of the buildinge of Sr w[illia]m hildyard knight howse unto the river of Owse and also do kepe Cleane the Comon hall layne'.³⁹⁸ This dunghill contract renewal, which only entered the record due to Percival's death and his wife's subsequent refusal to continue the arrangement with the corporation, provides a fascinating insight into the ways in which dunghills functioned in the neighbourhoods of York at this time. There were surely many other similar arrangements made across the city, such as the arrangement made by the corporation in September 1627 with George Chapman, to have 'the benefit of a peece of ground lying w[i]thout Munckbar beyond a garden of Tristrams langwiths for manure to ly in the same'.³⁹⁹ Such arrangements suggest that the disposal of dung was not always as chaotic as the repeated orders in the council record suggest. Such orders concern only the minority of inhabitants who disposed of waste inconsiderately; the majority of informal, micro-scale waste disposal systems, so long as such arrangements continued without problems, were never written into the record.

The equipment used to clean the streets is rarely mentioned in the records, but the corporation did record that they were considering whether 'it be fting to hang a doole [i.e. shovel] at the end of the land adioyning to Mr Hudsons house leading out of fossegate into hungate or to hier one to sweepe the same'.⁴⁰⁰ This suggests that the provision of communal equipment with which to clean the streets, even an item as simple as a shovel hanging on a

³⁹⁸ YCA, B33: York Corporation House Book, 1605-1613 (05/10/1610).

³⁹⁹ YCA, B35: York Corporation House Book, 1625-1637 (21/09/1627).

⁴⁰⁰ YCA, B35: York Corporation House Book, 1625-1637 (24/09/1630).

wall, may well have been common in the city. Both the ephemeral nature of items such as besoms, essentially a collection of twigs attached to a central pole, and the potentially widespread provision of communal items such as shovels would explain the lack of such equipment in individuals' inventories. Clearly, inhabitants had the means to clean their houses and streets, but they may well have used ephemeral or communal equipment to do so.

Much of the city's dung was transported out to the surrounding rural areas and city wastes to be used as fertiliser. Not all such dung was transported out of the city by the scavengers and by individual householders, however, because some local farmers found it worthwhile to travel into the city to collect the dung and transport it to their arable lands themselves. However, in September 1632, the corporation prohibited the practice of transporting dung out of Monk Bar because 'the waines coming for & carrying away the same doe much breake downe & hurt the causeys leading betwixt the same barre & monck bridge'.⁴⁰¹ Presumably the corporation considered the consequent disposal problem easier to deal with than the damage caused by the transportation of the dung out of the city. However, in December 1644, proper arrangements were made for the transportation of the city's muck to the surrounding countryside. Several aldermen were ordered to meet and 'sett downe what waines they thinke fitting to come in from every Towne about the Citty to fetch and Cary away the manure in the sev[er]all places of the Citty and at what times & to what places and to appoint some to see them leaden'.⁴⁰² What was decided at this meeting, if indeed it actually took place, was never recorded in the house minutes, but it may well have been decided unofficially and left out of the records.

Instead of continually repeating top-down orders to deter inhabitants from dumping rubbish in particular public areas, and threatening increasingly severe punishments and fines, the corporation was receptive to inhabitants' suggestions to take proactive action to prevent

⁴⁰¹ YCA, B35: York Corporation House Book, 1625-1637 (27/09/1632).

⁴⁰² YCA, B36: York Corporation House Book, 1637-1650 (11/12/1644).

such problematic waste disposal in the future. In August 1633, for example, Mr Blanshard requested that he have a lock and key for the door of the lane adjoining his house in Coney Street, in which inhabitants continually dumped their rubbish, so that he could control who entered the lane and thereby reduce the accumulation of waste next to his home, which was ‘very noisome to the neighbours & passengers that way’. The corporation granted him this request:

It is therefore ordred that the request of the said Mr Blanshard that he the said Mr Blanshard shall have a lock and key of the doore of the said lane, and shall ev[er]y day open the same at sunrising and keep the same open till sun setting for the Citizens and neighbours to have egress and regresse to carry and recarry water and other things (except dung and manure) And that if any of them doe marr or spoile the same at any time w[i]th Carriage of any thing through the same, Then the same p[er]sons to dresse and make the same Cleane againe, And that nether Mr Blanshard nor any other shall ly any dung or manure there att all.⁴⁰³

This is an insightful example of an inhabitant’s concern about the cleanliness of his micro-scale environment and it proves that inhabitants did not wait passively for the corporation to take action to improve the sanitary condition of the city, but that they were prepared to approach their local governors with suggestions to make considered changes which would improve the quality of their daily lives. This arrangement was modified slightly in September 1638, however, when the Mayor had a key cut for himself,

it is now ordered that there shalbe another key made for the lock of the doore of the same lane and allwayes left in my lord Maiors custody that hee may give leave in his di[s]crecon to Cittizens or others to carrie dung or manure or any thing els downe the same lane to lead into Catches or other vessels to carrie the same away by water soe that they make the lane cleane againe when they have done.⁴⁰⁴

The mayor did not take this action exclusively to undermine Mr Blanshard’s independence in this matter, and he was not trying to overturn his idea completely, but rather he was ensuring that inhabitants could still access the boats which carried their waste away, in order to ensure that inhabitants did not instead dump their dung elsewhere. It is clear that some of York’s

⁴⁰³ YCA, B35: York Corporation House Book, 1625-1637 (05/08/1633).

⁴⁰⁴ YCA, B36: York Corporation House Book, 1637-1650 (24/09/1638).

dung left the city by water. Indeed, a record made in January 1640 noted the arrangements made for ‘getting the manure in Hundgate removed and carried to the Taighall and there spread and p[ro]vide men and boates for carrying the same away’.⁴⁰⁵ Hungate continued to attract the city’s manure, with arrangements to clear the manure away by means of common day work by Walmegate and Monkgate wards being made, yet again, in January 1641. In February 1644, moreover, a party was sent to ‘ve[i]w hungate and also the garthes and grounds thereabouts and Consider of some good Course for removing the manure in hungate into some of those grounds or otherwayes as they thinck fit’. The following month, two orders were issued prohibiting dumping dung in Hungate under the pain of 5s.⁴⁰⁶ By June 1646, the problem had still not been resolved, and yet another party was sent to ‘view the lane leading from Hodgerlane to Hungate and advise with the Inhabitanes adjoining upon that lane and take order either by hanging a doore or otherwise how it may be kept cleane’.⁴⁰⁷ Physically barring inhabitants from entering the area was far more proactive, and seems to have been the only real option in the context of ineffectual fines. The Mintyard was also a problematic area in which inhabitants tended to dump waste and in May 1645 the wardens of Bootham Ward were sent to ‘see what fulture & dung lyes in the Mintyard & Consider of a way for removing theireof & for the p[re]venting of the lyeing any more theirein ... the same being very noisome to the Inhabitants neare that place & of daingerous consequence in respect of the smell theirof to the Citty’.⁴⁰⁸ The smell of the dung was clearly a major motivating factor for removing it, and the word dangerous implies that the councillors literally feared the consequences of inhaling the malodours.

It is important to remember that the nuisances which appeared in the house minutes were by definition noteworthy and unusual and the great majority of inhabitants disposed of

⁴⁰⁵ YCA, B36: York Corporation House Book, 1637-1650 (15/01/1640).

⁴⁰⁶ YCA, B36: York Corporation House Book, 1637-1650 (24/01/1640, 25/02/1644, 14/03/1644 and 20/03/1644).

⁴⁰⁷ YCA, B36: York Corporation House Book, 1637-1650 (11/06/1646).

⁴⁰⁸ YCA, B36: York Corporation House Book, 1637-1650 (17/05/1645).

their waste carefully and conducted their crafts and trades considerately in the city without ever attracting the corporation's attention. Moreover, the scavenger system functioned efficiently throughout the early seventeenth century, at least to the extent that no problems were recorded in the house minutes and the scavengers continued to be appointed in each ward and paid by the chamberlain. However, inhabitants were still responsible for their own forefronts and this medieval and early modern system continued alongside citywide, centrally funded street cleaning efforts. Just like the householders, the churchwardens used to pay someone to clean the street before the church, their forefront, and to clear away their manure from the property, and the churchwardens could be fined for neglecting to perform this obligation. While most householders did not keep detailed account books as churchwardens did, and private homes were not as large and therefore had much smaller forefronts, some householders would surely have paid someone other than their own household servants to clean the street for them, especially wealthier, high-status householders. The duty was to ensure that the forefront remained clean, not to actually clean it oneself. In 1643, for example, the churchwardens of St Michael's Church paid Matthew Lealman 1s 8d for 'sweeping & caring away the manure in the Church yeard'.⁴⁰⁹ In the disbursements of 1644 for the parish of St Trinity's parish in Goodramgate, moreover, constables James Wilson and Thomas Fawcitt paid 1s 6d 'to two men for burying of dead horses & for aile to them before they went to bury them' and they paid 1s 4d 'to two men to helpe clence the bar steed'.⁴¹⁰

While the nuisance of free-roaming livestock was not as much of an issue in this period as it had been throughout the later sixteenth century, it was still present. In March 1614, for example, the corporation discussed the city's fortnightly sheep and cattle market, which had traditionally been held in Walmegate 'for divers yeres past', but 'the great

⁴⁰⁹ Borthwick Institute, University of York Library, PR/Y/MS/5: St Michael's Churchwarden Account Book, 1626-1710.

⁴¹⁰ Borthwick Institute, University of York Library, PR/YHTG/15: York Holy Trinity Goodramgate Constables' Accounts, 1636-1735, ff. 63-64.

inconvenience of that place, for all the somer season, not onely be reason of the want of feldes and convenient roomes to place sheep and Cattell in, but also the strait waies and passages through w[hi]ch ... droves of Cattell must of necessity have ther waye' was causing significant obstruction problems.⁴¹¹ Notably, the waste produced by the standing sheep and cattle is not mentioned in the minutes; rather, the physical obstruction in Walmegate seems to have been of utmost concern. Despite complaints from 'Lord Wharton and other the knights gentlemen & substanciallest inhabitants' that the 'Cattell that are brought unto the same faire do come from the forrest side and of that p[ar]te of the Countie w[hi]ch to drive through this Citty wold be verie troblesome', the corporation decided to keep the faire in Walmegate, 'being a large strete wher many poore Cittizens do dwell wch is a great benefitt unto them'.⁴¹² Perhaps the waste produced by these animals was an issue, but it was specifically omitted from the minutes. Despite the obstructive nuisance caused by this market, the corporation decided to allow its continuance because of its economic benefit to poor city dwellers who relied on it for their livelihood.

In March 1616, moreover, the corporation issued an order reminding inhabitants to keep their 'kine Swine and masty [i.e. mastiff] dogs ... upp in ther howses and not suffer them to goe into the strets dureing the time of the King his highnes being in this Citty'.⁴¹³ This order confirms that free-roaming livestock was still a nuisance, but also that King James I and VI's forthcoming visit to the city was the major motivating factor for this effort to suppress the nuisance, rather than inhabitants' daily life quality and the salubrity of the city's environment. Another very similar order, in May 1633, forbidding inhabitants to allow their 'kine swine or mastive dogs to come w[i]thin the streetes of this Citty' was passed in preparation for Charles I's visit to the city.⁴¹⁴ This does suggest that suppressing the nuisance

⁴¹¹ YCA, B34: York Corporation House Book, 1613-1625 (20/03/1614).

⁴¹² YCA, B34: York Corporation House Book, 1613-1625 (20/03/1614).

⁴¹³ YCA, B34: York Corporation House Book, 1613-1625 (28/03/1616).

⁴¹⁴ YCA, B35: York Corporation House Book, 1625-1637 (13/05/1633).

of free-roaming animals was motivated largely by embarrassment in front of prestigious visitors rather than typically modern-day desires to improve inhabitants' life quality in the long term or to improve public health. Free-roaming animals undermined the performance and the image of a civil and well-governed city, and could not be permitted to pollute the pageant of civilised urban life in front of a prestigious visitor.

The movement of livestock from within the city to places where they could be pastured was managed closely, and this task was delegated to four pasture masters, one for each ward. In September 1627, for example, it was 'ordered that the Pasturemaister of Micklegateward shall veiwe what passage is made for the Cattell of that warde to passe thorough a little close of Alder heinsworth ... and if there be not a sufficient way then to take downe one of the railes that goe through'.⁴¹⁵ And in September 1631, it was

...ordered that the kine that goe to the Common shall continue to goe still, and that the owners shall carry them themselves to the barr, and that then a hirde to be chosen at St Micheles shall drive them to the Comon and bring them back againe to the barr at night & then leave them that the owners may fetch home ev[er]y one his owne And all the milk maides to be stained and stopped at the barr that they goe not forth to milk.⁴¹⁶

It is clear from this order that while a minority of livestock, especially swine, did cause a nuisance when they broke free and wandered at large through the city, the movement of the majority of livestock, especially larger beasts such as cattle, was closely managed and the corporation employed junior officials such as pasture masters and herds to manage this aspect of daily life in the city. The issue of livestock moving around the city was largely under control and far from chaotic.

Dirty Trades were also much less of an issue in this period than in the preceding four decades, though cloth-bleaching, soap-boiling and butchery waste were all raised and discussed briefly in council meetings. In September 1613, York Corporation took action to suppress the malodorous nuisance of crab-apple mills.

⁴¹⁵ YCA, B35: York Corporation House Book, 1625-1637 (21/09/1627).

⁴¹⁶ YCA, B35: York Corporation House Book, 1625-1637 (05/09/1631).

... ther is Complaint made by divers of the most sufficientest Inhabitanes in Spurriergate and Jubbergaite against those that kepe Crabb milnes in Jubbergate beinge in the midst of this Cittie alledgeinge by ther peticon the infectious smells which cometh & groweth by the kepeinge of that which remaineth after they be grund and likewise much compleined of by straingers and gentlemen who lodge in ther Innes nere unto the same mills of the evill smells that growe of them and a great disquietinge of them by reason they often work all or the most parte of the night It is therfore thought mete and so ordred by this court that such as now have or use any crab milnes in the aforesaide strete or that hereafter shall have and occupie any in the same strete shall once everie daie at the least clense and take awaye all that which remaineth of the crabes so grund and caried forth of the strete and kepe ther milnes clean & sweete so as the same maie not be any annoyance to their neighboures or straingers And that they shall not grinde any crabes in ther milnes after nine of the clock at night upon paine of everie one doeinge contrarie to the intent of this act or order shall paye such fine as at the discretion of the Lord Maior for the time beinge shall be imposed upon him.⁴¹⁷

Clearly, the smell of the ground crab-apples, rather than the unsavoury appearance of such material, caused annoyance and alarm and motivated York Corporation to suppress the nuisance. In the context of contemporary understandings of miasmatic contagion, permeable skin and humouralism, malodorous nuisances tended to be perceived as dangerous, potentially fatal, health risks rather than merely as annoying inconveniences and these understandings clearly fuelled efforts to remove insanitary sources of noxious vapours.⁴¹⁸ The ‘great disquieting of them by reason they often work all or most parte of the night’ was also a motivating factor for the suppression of this nuisance.

Waste disposal and environmental regulation were discussed significantly more frequently in the early seventeenth century than they were either in the preceding four decades or in the subsequent half century. Both the distinctly more serious tone of the discussions which took place in the first half of the seventeenth century and the link between dirt and public health indicate that the heightened concern and increased efforts on the part of the corporation resulted from the three plague epidemics which occurred in the city in 1604, 1631 and 1645.

⁴¹⁷ YCA, B34: York Corporation House or Minute Books, 1613-1625.

⁴¹⁸ Slack, *Impact of Plague*, pp. 69-74.

Between 1651 and 1700, issues pertaining to waste disposal and environmental regulation were recorded in the house minutes a total of forty-eight times, significantly fewer than the number recorded in the first half of the seventeenth century.

Fig. 32: Categorised House Minutes pertaining to Waste-Disposal and Outdoor Sanitation, 1651-1700⁴¹⁹

-	1651-1660	1661-1670	1671-1680	1681-1690	1691-1700	Total:	
-	No.	No.	No.	No.	No.	No.	%
Street-Cleaning	8	1	6	3	1	19	40
Solid Waste-Disposal	5	2	4	1	2	14	29
Liquid Waste-Disposal	1	-	8	-	-	9	19
Livestock	1	-	-	-	-	1	2
Dirty Trades	-	-	1	-	-	1	2
Combination	-	1	1	-	-	2	4
Air Pollution	-	-	-	-	-	-	-
Water Purity	-	1	1	-	-	2	4
Total:	15	5	21	4	3	48	100
Percentage:	31	10	44	8	6	100	-

This does not necessarily imply, however, that concern over the environment decreased after the threat of plague had receded. It may well have simply required relatively less attention because the systems and processes in place were functioning more efficiently. Furthermore, while plague was not to strike the city again, the overhanging threat that it would remained present throughout this period.

Street cleaning dominated the corporation's discussion of this area of city government during this period, though waste disposal was also discussed quite frequently. While York was not to suffer any further plague epidemics in the later half of the seventeenth century, the corporation continually feared that it would strike again and the threat of plague shaped environmental regulation and the corporation's discussion of this area of city government well into this period. In February 1652, for example, a preamble to a reminder to inhabitants to sweep their forefronts is dominated by the threat of plague and the link between dirty streets and disease is explicit:

⁴¹⁹ YCA, B23-B40: York Corporation House Books, 1560-1706.

For the better preventinge of sicknesses & diseases occasioned by the noysomnes of streets; It is ordered ... that the Inhabitants of this Citty doe cause the streets before there houses yards and orchards to be swept once at the least every weeke, and the durt to be fourth with removed and the Church wardens to doe the like against the Church & Church yards upon paine of forfeiting iij s iiij d for ev[er]ly offence.⁴²⁰

In March 1655, moreover, the officers of the wards were ordered, yet again, to ensure that inhabitants swept and cleansed their forefronts every Saturday afternoon, and that every Monday morning they submitted a report of everyone who neglected to perform this civic duty.⁴²¹ Another reminder of this bylaw was issued in December 1660.⁴²² The repetition of these orders over 140 years does give the impression that they were ineffectual, but they were bound to need repeating several times over the course of such a lengthy time period. The repetition of a bylaw which ordered inhabitants to clean their forefronts every week every five years or so is not excessive, and rather than suggesting that such bylaws failed to regulate the environment, if anything, they actually prove the opposite. The fact that the mayor took the decision to manage this element of street cleaning weekly, by means of a report of contraveners every Monday morning, does not mean that the system was weak and ineffectual, but rather than the corporation was making significant efforts to monitor and manage the system much more closely and centrally.⁴²³

Just as in the last period, the majority of neighbours continued to take ownership of and responsibility for the disposal of their manure onto common dunghills conveniently near to their homes. Inhabitants continued to dump their rubbish and manure at places which were most convenient to them, even in explicit contravention of city bylaws. In September 1654, a small party of three council officials were sent to survey 'the waiste peece of ground at staith', a particularly problematic area at which inhabitants continually dumped their waste, despite repeated bylaws against such behaviour. The solution to this continuing problem was

⁴²⁰ YCA, B37: York Corporation House Book, 1650-1663 (03/02/1652).

⁴²¹ YCA, B37: York Corporation House Book, 1650-1663 (05/03/1655).

⁴²² YCA, B37: York Corporation House Book, 1650-1663 (05/12/0660).

⁴²³ The reports themselves have not survived in the extant archives of York Corporation.

simply to accept inhabitants' need to deposit their waste at this obviously convenient location, but to 'give order for making a wall about it for the inhabitants to lay there manure in'.⁴²⁴ This does not infer that the corporation simply gave in to the inhabitants, but rather that they responded to their bottom-up influence in relation to where they wanted to deposit their waste. In this case, the corporation decided to work with the inhabitants, instead of trying to force them in a top-down manner to dispose of waste where they thought fit. In February 1667, moreover, the corporation decided 'that will[ia]m Smallicker whoe clenethe the Staith shall from henceforth receive the one halfe of the manure which is or shall be laid at the midden place at the east end of the staith till further order p[ro]vided that hee keep the high way cleane that goeth to the frear garthe'.⁴²⁵ In a very similar fashion, moreover, in November 1664, the corporation allowed yet another informal dunghill to become an officially recognised one by building a wall around the area which inhabitants were already using as a common dunghill: 'the place where the Manure lyeth neare Munckbarr ... be continued to that use for a Comon dunghill And that the wardens of the ward ... doe bounder the same And George Francke Officer of that ward is to take care that the dunghill there be kept ... upp And hee to have the benefit thereof'.⁴²⁶

In May 1675, moreover, a similar arrangement was made in Hungate where inhabitants had been dumping their manure for decades, if not for centuries. The corporation stopped fighting against the inhabitants' chosen waste disposal method and instead facilitated and accommodated it, thus allowing the inhabitants their own way in this matter. In Hungate, the corporation ordered that a 'wall be built at the Cittyes charge upon that p[ar]t of ground lately bought of Mrs Slinger for lyeinge Soile in, in Hungate'.⁴²⁷ However, an order passed in March 1682, ordering the 'Wardens of every Ward doe meete and consider of convenient

⁴²⁴ YCA, B37: York Corporation House Book, 1650-1663 (27/09/1654).

⁴²⁵ YCA, B38: York Corporation House Book, 1663-1688 (26/02/1667).

⁴²⁶ YCA, B38: York Corporation House Book, 1663-1688 (10/11/1664).

⁴²⁷ YCA, B38: York Corporation House Book, 1663-1688 (12/05/1675).

places for every Ward for Lyeinge Manure compost & dirt in and make there report thereof,⁴²⁸ suggests that the several places which had been provided for the deposition of manure were not sufficient and that the facilities in place were far from comprehensive. An order passed in December 1691, moreover, confirms that dumping rubbish and dirt in public spaces which had not been designated for waste disposal continued to be a problem towards the end of the seventeenth century. In December 1691, for example, it was ordered that

Thomas Wilson be appointed to informe ... this Courte of such persons as lay any dirt gravell or Rubbish in the highway out of Monkbarre without Licence of the Wardens and that my Lord Mayor appointe three other persons for the high wayes out of the other Barrs The penalty for soe doeing is twelve pence p[er] Loade.⁴²⁹

However, this order suggests that inhabitants at least went to the effort to carry their waste to outside of the walls to dispose of it, and even to certain locations such as Hungate and the Staiths, which they perhaps perceived as being less inconsiderate and potentially less problematic locations. Contemporaries certainly did not dump their rubbish in a completely careless manner with no regard for the problems it might subsequently cause their neighbours. It is clear from the existence of hotspots for waste disposal and from the tendency to dump waste outside of the walls that inhabitants put at least some thought into where they dumped their waste, even when it was in sharp contravention of a bylaw of which they had been made explicitly aware when it had been promulgated in their parish churches. It is possible that inhabitants bore in mind their economic interests in keeping the city thoroughfares flowing, presenting an unoffensive environment for prestigious visitors or not creating inconvenience for their neighbours, broadly conceptualised as the ‘commonweal’, when they purposely disposed of waste outside of, rather than inside of, the city walls.

The transfer of valuable manure to local arable farmers continued to be closely regulated. In March 1655, for example, ‘the Bailiffe of the Augistie’ was ordered to ‘give notice to severall husbandmen in the Augustie townes within 4 miles that they are desired ...

⁴²⁸ YCA, B38: York Corporation House Book, 1663-1688 (02/03/1682).

⁴²⁹ YCA, B39: York Corporation House Book, 1688-1700 (09/12/1691).

to Lead the Manure out of the Hungate to their owne Grounds which otherwayes is like to be noisome in hott wether'.⁴³⁰ This infers that the maximum viable catchment area to which a farmer was prepared to carry manure from York was probably about four miles. Since the manure trade was conducted on a largely oral basis, details such as the extent of viable catchment areas have been effectively lost from history. The minutes of the last period revealed quite clearly that the city's manure was carried, as a matter of course, to the riverside at the bottom of Hungate and piled onto boats to be taken down the river to arable land. However, this item reveals even more vivid details about where the muck was transported to and how this system worked. In March 1673, it was 'ordered that Mr William Clarke haue 4 li yearly abated him of his rent for Tenghall p[ro]vided hee build a boate for carrying of manure to the said Ground'.⁴³¹ Tang Hall was a hall situated in parkland at Heworth, a village which was and still is part of the city of York. It is located only one mile northeast of York city centre with plentiful arable land in need of manure. This area provided an excellent means of disposing of the city's manure, at the cost of 4 li per year in lost rent to in return for William Clark's labour in building a boat for the muck's carriage along the Fosse to the point where Heworth pastures met the river. In May 1675, inhabitants were ordered to carry their dirt to 'such places only as the wardens of the severall wards wherein the same [dirt] shall soe lie shall thinck fitt' to allow for 'Carrying the same away' to the surrounding countryside and that 'every owner hireinge or Carryinge away the same contrary to the directions of the said wardens to pay 2s for every cart load' and that 'every labourer [shall pay] 6d for every burthen he shall carry thereof'.⁴³²

The scavenger system continued to function. Towards the end of the period, in February 1696, the corporation awarded 'William Cooke the Citys Scavenger' an extra 20s to

⁴³⁰ YCA, B37: York Corporation House Book, 1650-1663 (05/03/1655).

⁴³¹ YCA, B38: York Corporation House Book, 1663-1688 (07/05/1673).

⁴³² YCA, B38: York Corporation House Book, 1663-1688 (12/05/1675).

his salary.⁴³³ Unfortunately, it did not mention whether this was to compensate him for having taken on extra duties, but it can be safely assumed that the scavenger system must have been working well and that William Cook, at least, must have been doing a good job. Extra tasks continued to be assigned to various inhabitants, however, if and when extra work was required, such as in July 1674, for example, when the Chamberlain paid 3s 4d to George Hobson ‘for buyinge a Shovell & skuttle for carryinge dirt from Botham barr & Clenseinge the same’.⁴³⁴ And, in January 1674, for example, ‘the labourers imployed about carryinge away the manure in hungate’ were paid 3 li 10s.⁴³⁵

The issue of free-roaming livestock was far less pronounced in this period than it had been previously, either in the later sixteenth century or, albeit to a lesser extent, than it had been in the first half of the seventeenth century. In February 1673, for example, it was ‘ordered that Mr Thompson shall not use the stable in the comon hall yard as a stable for the same appears to be noysome to the houses thereabouts & prejudiciall to the laine & if he shall make use of it as a stable he shall not be admitted to take a new lease of the house there’.⁴³⁶ Despite the strategic importance of horse transport and the necessity of stabling horses in the city, the malodorous smell of stables had the potential to reduce the quality of inhabitants’ daily lives. In this case, the rights of the inhabitants of the ‘houses thereabouts’ took precedence over Mr Thompson’s need to stable horses in a previously empty stable in the Common Hall yard.

Dirty trades were far less of an issue in this period, but they still caused some problems which had to be discussed in council meetings. In November 1675, for example, it was ordered that ‘that p[ar]t of the pavement where Rabbits are commonly sold be cleansed as the rest of the pavement is at the publiq charge and that such as doe sell Rabbits there

⁴³³ YCA, B39: York Corporation House Book, 1688-1700 (25/02/1696).

⁴³⁴ YCA, B38: York Corporation House Book, 1663-1688 (24/07/1674).

⁴³⁵ YCA, B38: York Corporation House Book, 1663-1688 (26/01/1674).

⁴³⁶ YCA, B38: York Corporation House Book, 1663-1688 (03/02/1673).

stand within the Range of the m[ar]kett'.⁴³⁷ Similarly, in August 1689, the corporation ordered that the 'Searchers of the Butchers take care to sweep the Thursday Markett thrice every weeke where the calves stand or else the Court will take it into consideracon to remove the same into another place'.⁴³⁸ Clearly, the waste produced by the calves was unpleasant and offensive. The waste must have accumulated to significant levels over the course of the market. After the market had ended, the muck had to be cleared away and the ground had to be cleaned.

The table and line graph below show three main surges of discussion pertaining to sanitation and environmental regulation at corporation meetings: one at the turn of the seventeenth century, in the discussion of street cleanliness, and to a lesser extent in the discussion of dirty trades and solid waste disposal; another significantly larger peak in the middle decades of the seventeenth century in the discussion of street cleanliness and solid waste disposal, and to a lesser extent dirty trades; and a third peak around 1680 in the discussion of liquid waste disposal, street cleanliness and solid waste disposal. These peaks are not necessarily the result of dirtier conditions, or of a greater need to regulate the environment, but they could well have resulted from particularly fastidious mayors and councillors or greater pressure to keep the streets clean due to the threat of plague and its perceived link with street cleanliness.

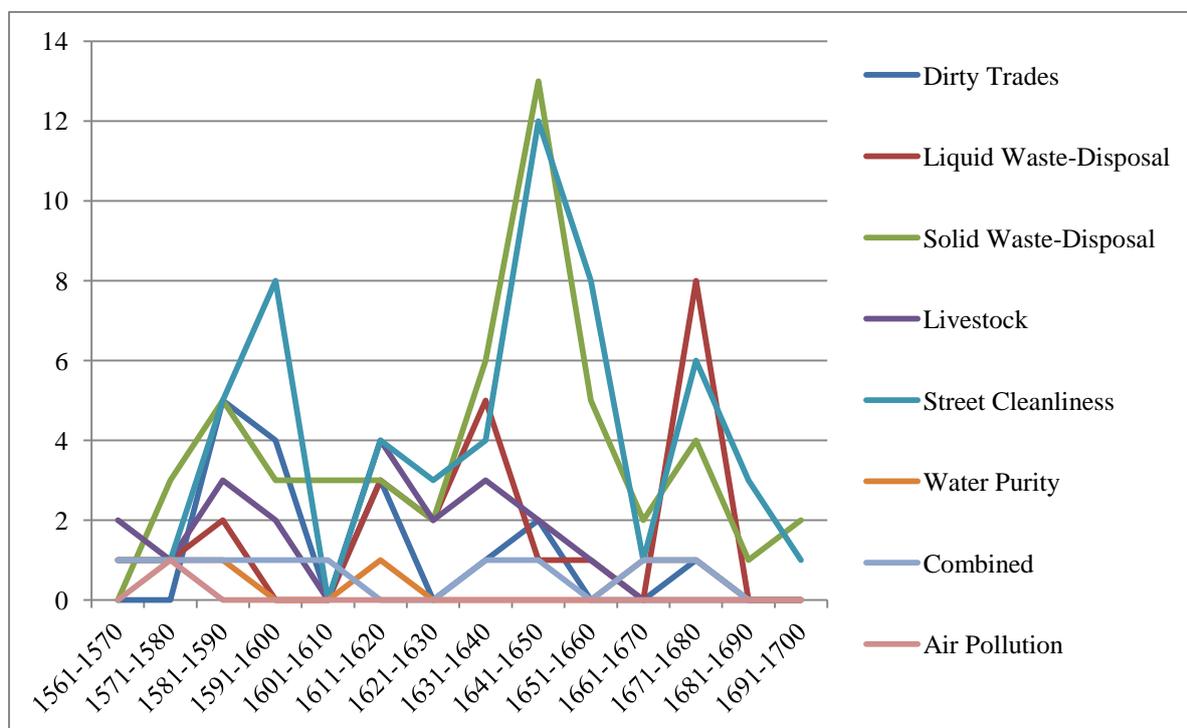
⁴³⁷ YCA, B38: York Corporation House Book, 1663-1688 (03/11/1675).

⁴³⁸ YCA, B39: York Corporation House Book, 1688-1700 (28/08/1689).

Fig. 33: Categorised Council Minutes Pertaining to Environmental Regulation and Waste-Disposal in York City, 1561-1700⁴³⁹

-	Dirty Trades	Liquid Waste-Disposal	Solid Waste-Disposal	Livestock	Street Cleanliness	Water Purity	Combined	Air Pollution	Total	Percentage
1561-1570	-	1	-	2	1	1	1	-	6	3
1571-1580	-	1	3	1	1	1	1	1	9	5
1581-1590	5	2	5	3	5	1	1	-	22	12
1591-1600	4	-	3	2	8	-	1	-	18	10
1601-1610	-	-	3	-	-	-	1	-	4	2
1611-1620	3	3	3	4	4	1	-	-	18	10
1621-1630	-	2	2	2	3	-	-	-	9	5
1631-1640	1	5	6	3	4	-	1	-	20	11
1641-1650	2	1	13	2	12	-	1	-	31	17
1651-1660	-	1	5	1	8	-	-	-	15	8
1661-1670	-	-	2	-	1	1	1	-	5	3
1671-1680	1	8	4	-	6	1	1	-	21	11
1681-1690	-	-	1	-	3	-	-	-	4	2
1691-1700	-	-	2	-	1	-	-	-	3	2
Total:	16	24	52	20	57	6	9	1	185	100
Percentage	9	13	28	11	31	3	5	1	-	-

Fig. 34: Line Graph showing York Corporation's Discussion of Various Aspects of Environmental Regulation and Waste disposal, 1561-1700⁴⁴⁰



⁴³⁹ YCA, B23-B40: York Corporation House Books, 1560-1706.

⁴⁴⁰ YCA, B23-B40: York Corporation House Books, 1560-1706.

The major peak in discussions relating to this area of urban management coincides with an influx of prestigious political visitors and military operations in and around York. In 1642, for example, Charles I broke with Parliament and held his court in York for a period of six months. During the British Civil Wars, York was a royalist city and in 1644 it was besieged by the Parliamentarians under Fairfax. The greater number of discussions in the 1650s could well have resulted from the establishment of the Commonwealth.

Conclusion

This chapter has outlined how street cleaning and waste disposal duties were undertaken and managed by Edinburgh Council and York Corporation, where the line lay between the city governors' and inhabitants' responsibilities and how and why these systems were modified between 1560 and 1700. Householders understood which services were provided for them and which duties they were expected to carry out themselves. While not all neighbours came out willingly to sweep their forefronts in a harmonious and idyllic fashion, and a significant minority of inhabitants had to be coerced into maintaining the cleanliness of their forefronts, the majority carried out their duties without complaint. Neither of the two cities was equipped with a comprehensive and completely publicly funded sanitation infrastructure, even by 1700. The systems and processes which were put in place to manage waste-disposal and street-cleaning in Edinburgh and York came from the local governors and were provided for the benefit of urban inhabitants at large, but it would be grossly inaccurate to conclude that the improvements made to sanitation processes, systems and infrastructure in Edinburgh and York were by any means forced on unwilling populations who did not value the widespread potential benefits of such improvements. In both cities, there was a genuine willingness to meet Edinburgh Council and York Corporation half way and to fulfil this aspect of civic duty as a householder. Under the pressure of significantly more intense population increases, by 1700, Edinburgh Council had made significantly more acute changes to its street cleaning

systems and waste disposal processes than York Corporation had made to theirs, but the local governors of both cities were equally passionate about presenting the urban environment in the best possible condition of which they and their cities were capable in the context of necessary urban agriculture, limited fiscal resources and relatively rudimentary technology. By the turn of the eighteenth century, Edinburgh's systems and processes were far more centralised than those of York, but Edinburgh's governors were largely reacting to the pragmatic waste-disposal needs of an expanding population in order to maintain a basic level of sanitation on the streets and in other public areas rather than proactively adapting processes and systems to improve conditions. Moreover, while York's local governors were under relatively minimal pressure to improve the long-established processes and systems which were already in place and which were functioning well, their lack of improving spirit does not confirm that they were disinclined to improve conditions. Rather, it should be understood in the context of a city which was disposing of its waste and cleaning its streets with relatively few problems. York's governors were as keen to present their streets in a good condition as Edinburgh's governors were for their streets to be clean, but they were operating and governing in very different circumstances.

Chapter 5

Insanitary Nuisances in Edinburgh and York

Introduction

In the urban neighbourhoods of sixteenth- and seventeenth-century northern England and lowland Scotland, the overwhelming majority of neighbours lived in streets and vennels which hosted a necessary, but problematic, combination of human activities. The confluence of noxious, unsavoury waste materials emanating from butchers', dyers', tanners', soap-boilers', skimmers' and tallow-chandlers' workshops, as well as those from both agricultural backlands and dwellings, was potentially overwhelming, especially during periods of hot weather; and such conditions were not conducive to harmonious neighbourly relations. Keith Wrightson noted in his article, 'The Decline of Neighbourliness Revisited', 'the evidence surviving for the ... early seventeenth century abundantly demonstrates the vitality of the concept of neighbourliness as both a centrally important social relationship and a primary social ideal'.⁴⁴¹ While neighbourliness was, indeed, a central social ideal, this chapter argues that the daily business of living together, in often very densely populated urban streets, vennels and closes, strained neighbourly relations. Insanitary nuisance was a perennial problem, which quite often caused conflict between more and less fastidious neighbours. This chapter explores the bottom-up, micro-politics which surrounded insanitary nuisances in the urban neighbourhoods of Edinburgh and York. It explains how such nuisances were regulated by local governors and it highlights the large extent to which inhabitants could and did engage in that regulation by initiating complaints to the courts, petitioning Edinburgh Council and York Corporation and by complying with by-laws pertaining to waste disposal and noxious trades themselves.

⁴⁴¹ Wrightson, 'The Decline of Neighbourliness Revisited', p. 22.

The majority of urban dwellers valued a clean environment in the outdoor public spaces where they lived and worked. Contemporaries went to considerable lengths to protect their collective neighbourhood standards of outdoor cleanliness against the minority of neighbours whose inconsiderate waste disposal arrangements and noxious activities threatened to undermine those standards. By asking local courts and urban officials to punish such neighbours, urban dwellers demonstrated their willingness to participate in micro-scale, environmental regulation out of both self-interest and in the interests of their neighbourhood as a unit, rather than in response to top-down coercion by urban governors. Sixteenth- and seventeenth-century urban courts presented, warned and fined a significant minority of inhabitants for creating insanitary nuisances which reduced their neighbours' life quality: including leaving dunghills in the streets for longer than was permitted, allowing livestock to roam freely, throwing human waste out of windows, polluting wells and rivers and blocking open sewers with solid waste. While many such court presentments resulted from official ward inspections, undertaken by civic employees such as beadles, constables, wardens or baillies, not a few insanitary nuisance cases resulted from neighbours having complained directly to court jurors or civic employees. Some complained as individuals; others complained in groups. While this chapter necessarily focuses on the minority of inhabitants who disobeyed sanitation bylaws, it is important to remain mindful that the majority of householders did not create insanitary nuisances. In early modern towns, careless disregard was the exception and careful maintenance of the various facilities to which households had access and careful processing of valuable waste products was the norm. Evidence of broken rules merely illuminates the importance of careful waste disposal in early modern urban society.

Edinburgh

By the end of the sixteenth century, the Dean of Guild Court's jurisdiction of cases of neighbourhood was relatively new, only having been made official by the Decree Arbitral in March 1584, a direct response to a growing number of neighbourhood disputes.

Fig. 35: Categorised Insanitary Nuisances submitted to Edinburgh Dean of Guild Court, 1566-1607⁴⁴²

	1566-1607	
	No.	%
-	-	-
-	-	-
Problematic waste disposal into jaw holls and/or sewers	16	36
Midding and/or rubbish left unremoved	14	31
Leaking and/or noxious privy	6	13
Throwing waste directly from doors and/or windows	4	9
Obstructing the flow of a neighbour's syre and/or jaw holl	3	7
Failure to scour syre and/or jaw holl	2	5
Air pollution	-	-
Area used as common jake	-	-
Flesher waste	-	-
Industrial Nuisance	-	-
Livestock	-	-
Dirty house	-	-
Dirty well	-	-
Totals:	45	100

The largest category of nuisance presented at the Dean of Guild Court between 1566 and 1607 was problematic waste disposal into jaw holls and sewers, accounting for 36% of extant insanitary nuisances presented to this court during these years. The waste which was disposed of into jaw holls and sewers was overwhelmingly liquid, consisting mainly of dirty water from cooking and cleaning, urine and blood; solid waste tended to be added to the midding heap outside of the property. However, while this waste was liquid, it could still be malodorous and it still had the potential to reduce neighbours' life quality. In December 1580, for example, James Fowlis, who lived on the east side of Forrester's Wynd, complained to the Dean of Guild Court that John Mosman, the owner of a building directly to the south of his tenement, 'had laitie at his own hand ... sett ane jaw holl upoun the eist side of his land'

⁴⁴² ECA, SL144/1/2: Edinburgh Dean of Guild Court Minutes, 1566-1607.

where there never was one before and made the ‘water gait ... of the said jaw holl directlie to fall upoun the entrie and door of ane hous lyand at the nether end’ of the close of the complainer’s lodging. The Dean of Guild and his Council inspected the properties and found ‘the said Jhone mosman to have done wrang in striking furth of the said jaw holl in maner foresaid and thairfore ordains him to remove and tak the same away and to big and close up his wall with stone and lime as the same was before the striking furth thair of without prejudice always’.⁴⁴³ In this case, James Fowlis was intolerant of the nuisance of his neighbour’s liquid waste exiting the jaw holl so near to the entrance of his home. He approached the court to request that the jaw holl be removed and the wall be repaired to its previous condition. Submitting an official complaint to the Dean of Guild Court may well have been his last resort, after one or more verbal attempts to rectify the situation or he might have approached the court in the first place. Either way, James clearly believed in the court’s ability to suppress the nuisance and he was sufficiently intolerant of this nuisance to potentially jeopardise relations with a nearby neighbour. It is impossible to say how long this jaw holl had been offending James before he approached the court, but that it was a new construction suggests that it had been there for a relatively short period of time, perhaps a few months.

The high proportion of nuisances pertaining to liquid waste disposal and drainage in this period contrasts markedly with the lack of discussion of such matters in meetings of Edinburgh Council. This suggests a certain amount of asymmetry between top-down efforts to prevent the creation of such nuisances in the first place by enforcing ordinances across the city and the aspects of environmental regulation which were causing most problems for inhabitants themselves about which they were expressing concern from the bottom, upwards. It is possible that after the decree of 1584, by which exclusive jurisdiction of neighbourhood cases was handed over from Edinburgh Council to the Dean of Guild and his court, there was

⁴⁴³ ECA, SL144/1/2: Edinburgh Dean of Guild Court Minutes, 1566-1607.

a distinct lack of communication between the two institutions and therefore Edinburgh Council was unaware of the issues about which neighbours were complaining most vociferously. This possibly suggests that Edinburgh Council was dealing with problems which they perceived as having been urgent in the context of the whole city, in a reactive manner, if and when such problems demanded attention, and that they were happy to delegate neighbourhood cases to the Dean of Guild court entirely. It is impossible to draw any firm conclusions here, but if there was a lack of communication between the two institutions, it would mean that, while inhabitants engaged in the regulation of insanitary nuisance in the small-scale arenas of their own neighbourhoods, through the medium of the Dean of Guild Court, these complaints were not able to indirectly influence discussions at council meetings, and thereby the top-down regulations issued by Edinburgh Council, which were enforced across the city. If this was the case, it would have to be assumed that the only way in which inhabitants were able to directly influence top-down, citywide regulation by Edinburgh Council was in the form of a direct petition. What is much more likely, however, is that liquid waste disposal and drainage nuisances caused more severe problems in the context of relatively few micro-scale neighbourhoods than they did in the context of the functioning of the entire city, thus explaining why individual inhabitants were more eager to suppress them than the burgh council. This would make a great deal of sense because liquid waste nuisances were often unpleasant for those living close to them, especially if the waste was malodorous, but ineffective drainage did not have a huge potential to cause severe problems across the city in terms of blocking thoroughfares and adversely affecting trades and crafts and economic growth.

Problematic solid waste disposal, however, accounted for 31% of nuisances in this period as well as 37% of council discussions, thus suggesting that both Edinburgh's governors and inhabitants were keen to prevent and suppress this type of nuisance and that there may indeed have been some communication between the two institutions and

consequently some proactive action. Unlike liquid waste, solid waste not only caused potentially long-term malodorous nuisances and obstructed closes and entrances in the micro-scale environment of individual neighbourhoods, but it also tended to block strategic thoroughfares which Edinburgh Council had to ensure remained passable for the purposes of trade. In September 1578, for example, James Spottiswood, who lived at the foot of Libbertoun's Wynd, complained to the Dean of Guild Court because David Dickinson had caused the wall of James' tenement to become so 'rottin and consumed by certan muck middings gathered and heaped be the said David' on a 'piece of waste land of his adjacent to the said james'. The court ordered David to 'remove and take away the muck and filth gatherit in the said waste with all diligence possible'.⁴⁴⁴ Solid waste had a much greater potential to accumulate over a long period and create severe long-term problems whereas liquid waste posed a comparatively temporary problem until it drained away. This explains why the Dean of Guild Court regulated the problematic disposal of solid waste much more rigorously and why Edinburgh Council discussed liquid waste far less often than they discussed solid waste in council meetings. The nuisances of leaking and noxious privies and throwing waste directly from doors were relatively uncommon in this period, accounting for 13% and 9% of presented nuisances, respectively. In the absence of population pressure, while inhabitants were still living in relatively long-established neighbourhoods with more open space, only a tiny proportion of Edinburgh's population was presented for throwing chamber pots out of windows, an offence which either increased in real terms or was presented by the Dean of Guild more frequently in the seventeenth century. The nuisances of obstructing a neighbour's syre or jaw holl and failure to scour one's own syre or jaw holl accounted for only 7% and 5%, respectively. While these nuisances posed serious problems for individual neighbours, and it is important that those neighbours refused to tolerate them, they did not cause citywide problems.

⁴⁴⁴ ECA, SL144/1/2: Edinburgh Dean of Guild Court Minutes, 1566-1607.

As the table below demonstrates, improper disposal of human waste out of windows and doors directly onto neighbours' roofs, backlands and streets and closes below clearly contravened contemporaries' standard of what constituted good neighbourhood, accounting for 45% of nuisances presented to the Dean of Guild Court between 1613 and 1646. This nuisance in particular had increased significantly from only 9% in the last period, almost certainly as a result of the increase in population density and the consequent subdivision of tenements, which meant that significantly more domestic waste was being produced within the same area.

Fig. 36: Categorized Insanitary Nuisances submitted to Edinburgh Dean of Guild Court, 1613-1646⁴⁴⁵

	1613-1646	
	No.	%
-		
-		
Throwing waste directly from doors and/or windows	58	45
Midding and/or rubbish left unremoved	24	19
Problematic waste disposal into jaw holls and/or sewers	22	17
Leaking and/or noxious privy	12	9
Flesher waste	4	3
Air pollution	2	2
Industrial Nuisance	2	2
Livestock	2	2
Obstructing the flow of a neighbour's syre and/or jaw holl	1	1
Dirty well	1	1
Dirty house	-	-
Area used as common jake	-	-
Totals:	128	100

In March 1624, for example, William Bruce and his spouse, Rachel Johnston, who lived in Wilsons Close, complained that their next door neighbours, Mr Johne Sanderlands, Laurence Cockbrane and John Pringel,

... cast out at the windows ... all maner of filth and vile excraments and thaire watter potts and casts out wesche [i.e. stale urine] furth thair of upone the ruiff of one tenement and dailie falls down ... in the said clos whereby no man or person may cum up or down the said clos unfiled with all sort of dirt and filth Which will mak the said compliners land altogether unprofitabill that none are abill to dwell

⁴⁴⁵ ECA, SL144/1/4-5: Edinburgh Dean of Guild Court Minutes, 1613-1646.

or remaine therein be the grait and filthie taist and savor arising be the casting out of the said filth and excrements ...⁴⁴⁶

This was a time when contemporaries believed that inhaled malodours could damage their permeable bodies in the same way as ingested rotten food could, which explains why in this case, nobody was ‘abill to dwell or remaine therein be the grait and filthie taist and savor arising’.⁴⁴⁷ The minutes were written by scribes, but the details of this case originated with the inhabitants who lived with this nuisance on a daily basis and they clearly meant this in a literal sense; they could not bear to reside in the property any longer unless the nuisance was suppressed. Indeed, an insanitary nuisance’s malodour was often what motivated complainants, first and foremost, to approach the Dean of Guild Court to have it suppressed. Ensuring that the air they inhaled was wholesome, rather than unwholesome, was a hugely important aspect of environmental regulation in contemporaries’ minds. Neighbours could and did threaten to leave their rented property if insanitary nuisances continued in order to force others to respect their perceived need, and possibly even their perceived ‘right’, to live in a clean and sweet-smelling environment. William Bruce was a tenant renting the property in which he lived in Wilson’s Close with Rachel Johnston, yet he was able to engage, quite powerfully, in the environmental regulation of his neighbourhood to protect his and his spouse’s life quality.

Inappropriately situated middings and rubbish heaps were also a frequent source of conflict in Edinburgh’s densely populated neighbourhoods, accounting for 19% of presented nuisances during this period. Middings, or dunghills, were inevitable by-products of necessary urban agriculture, but they caused a nuisance in the city when they blocked passages, impeded drainage or were left unremoved near to dwellings for long periods of time. In May 1619, for example, John Eistum, a maltman, complained that Beatrix Hode’s tenants,

⁴⁴⁶ ECA, SL144/1/5: Edinburgh Dean of Guild Court Minutes, 1624-1646.

⁴⁴⁷ ECA, SL144/1/5: Edinburgh Dean of Guild Court Minutes, 1624-1646.

Has cast onto ane filthie midding all kind of filth and fulyie to the bak sidewall of his foir tenement of land lyand adjacent to the bak land perteing to the said beatrix in lifrent lyand under the castle wall on the north side of the kinges hie stret which condemms the gutters and easing dropps of the saids lands and causes the same to run in throw the sidewall of his said tenement and it hes consumed his said sidewall that the same is lik[ely] to fall.⁴⁴⁸

The Dean of Guild and his Council ordered ‘the said beatrix to remove the midding and filth cassin to the said persewars bak wall and to keip the said wall frie of her filth and middings in time cuming and that thair may be frie passige for the persewars easing drop’.⁴⁴⁹ Notably, it was not the presence of the midding itself which caused annoyance, but rather the obstruction which it caused to drainage and the consequent damage which this inefficient drainage caused to John’s sidewall. In February 1641, similarly, William Dalglish, a baxter, and his spouse, Margaret Hall, complained that their neighbour, James Scott, ‘casts in muck and fulyie and ... and maks ane midding stead ... whereby they rott and consum the syidwall’ of William Dalglish’s land ‘and causis the watter to stand and gorge and rune in throw his said walls and fill the same full of underwatter’.⁴⁵⁰ The court ordered James Scott to have the midding conveyed away and to make no more there in the future. Most middings were stored on private property, they were integral to pre-modern, urban life and inhabitants surely accepted their ubiquity in the urban landscape. But middings were expected to be situated and maintained in such a way that they did not adversely affect neighbours’ property. If middings caused problems to neighbours or to horse-drawn traffic and trade, these valuable accumulations could be and were ordered to be removed entirely without compensation.

Inadequately maintained, leaking or noxious wet and dry privies were a less contentious issue, accounting for only 9% of nuisances in this period, possibly due to the fact that wet and dry stationary privies were relatively rare in Edinburgh at this time. In March 1614, for example, Elizabeth Thomson, who lived at the head of Millers Wynd, complained

⁴⁴⁸ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

⁴⁴⁹ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

⁴⁵⁰ ECA, SL144/1/5: Edinburgh Dean of Guild Court Minutes, 1624-1646.

that her neighbour, Alexander McMath, kept ‘ane wett privie which runs doun to ane other privie so full of excraments that the same breks out and passis in ane laithe [i.e. low] sellar of the said complainers tenement’.⁴⁵¹ After the usual court inspection, which involved a site visit by the Dean of Guild and several members of his council to inspect the nuisance on the ground, Alexander McMath was ordered to ‘clenye his said privie and to keip the said complener & her said tenement of land harmles and skaithles’ henceforth.⁴⁵² Similarly, in April 1620, Alexander Dick complained that all of the neighbours of a tenement in Master Mushe Close, owned by Mr Adixsunne, ‘has two wett privies within his land which summe times hes brokin furth in the said close and is presentlie brokin up and entering within ane sewir ... so that no persone may enter therin’.⁴⁵³ Mr Adixsunne was ordered to ‘cleny the two wett privys’.⁴⁵⁴ Notably, wet privies tended to be far more problematic than dry privies. Dry privies were simply deep pits in the ground beneath a seat which, if emptied sufficiently frequently so that they did not become noxious, were relatively unproblematic whereas wet privies required more maintenance, in terms of keeping them watertight and ensuring that they drained efficiently and without leakage into the nearby sewer, usually through a rudimentary system of several connected pipes.

In Edinburgh, as in all pre-modern urban settlements, animals were raised and slaughtered near to residential properties. Significantly, only 2% of insanitary nuisances across the whole period 1560-1700 concerned flesher waste, and only 3% in this period, but for a significant few unfortunate neighbours, the sensory experience of living next to an inconsiderate flesher’s booth proved to be unbearable. In October 1615, for example, Michael Lynner complained that his neighbour, Alexander Johnson, a flesher, and his servants,

...casts doun the soill filth and excraments of thair bestiall of sheip and nolt slane
be thame beneth the hinging stair of the said complainers dwelling hous lyand on

⁴⁵¹ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

⁴⁵² ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

⁴⁵³ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

⁴⁵⁴ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

the eist side of stevin laws close and ... the fleshe and blood of thair bestiall
[comes] throw the wall of the dwelling hous.⁴⁵⁵

Alexander was ordered to dispose of his waste more efficiently, ensuring that it did not come through the wall of Michael's house any more under the pain of five pounds scots. Although Michael mentioned that Alexander was slaughtering his livestock under the forestairs in the street, that was not the reason for or focus of the complaint. He complained because the nuisance was literally permeating and thereby transgressing the boundary of his property. To each complainant, the nuisance about which they were complaining was surely the most important, but in the context of citywide insanitary nuisance, clearly, throwing waste directly out of doors and windows was by far the most pressing problem in the first half of the seventeenth century. Balancing the needs of individuals against the needs of the whole city is a perennial problem for any governing body, regardless of the time period. Perhaps the Dean of Guild Court was given sole jurisdiction of neighbourhood cases so that it could deal with individuals' complaints in order to allow Edinburgh Council to concentrate on citywide problems.

As can be seen in the table below, the most frequently presented nuisance in the period 1656 to 1700 was that of throwing waste directly from doors and windows, which accounted for 34% of extant nuisances.

⁴⁵⁵ ECA, SL144/1/4: Edinburgh Dean of Guild Court Minutes, 1613-1623.

Fig. 37: Categorised Insanitary Nuisances submitted to Edinburgh Dean of Guild Court, 1656-1700⁴⁵⁶

	1656-1700	
	No.	%
-		
-		
Throwing waste directly from doors and/or windows	44	34
Midding and/or rubbish left unremoved	25	20
Obstructing the flow of a neighbour's syre and/or jaw holl	16	13
Problematic waste disposal into jaw holls and/or sewers	14	11
Area used as common jake	11	9
Air pollution	9	7
Failure to scour syre and/or jaw holl	4	3
Flesher waste	3	2
Leaking and/or noxious privy	1	1
Dirty house	1	1
Industrial Nuisance	-	-
Livestock	-	-
Dirty well	-	-
Totals:	128	100

In January 1687, for example, John Trotter, the owner of a tenement in Trotters Close, opposite to Blackfriar Wynd, complained that the neighbours who lived adjacent to the west and north parts of the backclose, James Graham, William Gilchrist and James Sibbalds and their servants, 'doe daily throw filth and dirt out at their windowes so it proved very noysome to his tennents & could have noe access to their cellars there'.⁴⁵⁷ The defenders were ordered 'to have put closs glass or tirls and stanchells [i.e.glass, tiles and stanchions/brackets] upon their opening windowes that nothing be casten furth therat'.⁴⁵⁸ It is significant that the court ordered the defenders to take action to prevent this nuisance's recurrence, in a proactive manner, rather than merely to fine them for the nuisance, which would not have precluded this nuisance's recurrence in the long-term. The court, therefore, prioritised suppressing the nuisance in the long term above the benefits of short-term fiscal gain. While the insanitary nuisance of throwing human waste directly out of windows and doors into streets and other public areas was the most commonly presented nuisance in the extant minutes of Edinburgh Dean of Guild Court in this period, and it clearly did occur to a limited extent, disposing of

⁴⁵⁶ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

⁴⁵⁷ ECA, SL144/1/7: Edinburgh Dean of Guild Court Minutes, 1687-1695.

⁴⁵⁸ ECA, SL144/1/7: Edinburgh Dean of Guild Court Minutes, 1687-1695.

one's waste in this way was by no means a 'normal' waste disposal method. Indeed, the very fact that this nuisance offended neighbours to the extent that they went to the effort of presenting it to the Dean of Guild and his Council, confirms that throwing human waste out of windows and doors was unambiguously unacceptable, clearly falling below the collectively upheld standard of what both complainants themselves and the Dean of Guild Court called 'guid nichtborheid'.⁴⁵⁹

Edinburgh Council tried in earnest to prevent the nuisance of casting waste out of windows and doors. It even funded the construction of a new privy, as described by this extract from August 1684,

the Counsell appoints two jaques to be made the one at the foot of the close bewest Thomas Wilsones new howse neir to the entrie of the flesh mercate and ane other at some close foot at the land mercate and that a board be pute up at the saids closs heads for directing them that are to ease themselves to find the saids Jaques and that the same be convoyed by ane syre to the northe loch.⁴⁶⁰

Given the high levels of illiteracy in Edinburgh at this time, it would be useful to know how the toilets were symbolised on this board. Perhaps it was a picture or symbol of some kind rather than the word privy or jaques. Despite the existence of some privies, however, the majority of inhabitants used simpler receptacles such as close stools, chamber pots and even simple buckets and pails, which were sometimes emptied directly into public areas. Edinburgh Council passed several statutes to regulate this method of waste disposal, seemingly with minimal success, given that the largest category of insanitary nuisance reported to Edinburgh Dean of Guild Court was the practice of casting human waste directly out of windows and doors into public areas below. It is significant that Edinburgh's multi-story tenements had forestairs, running down exterior walls in the street rather than inside of the building, which often fell into a poor state of repair and became unsafe. The forestairs

⁴⁵⁹ This term was used in a large proportion of insanitary nuisance cases throughout the period. ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

⁴⁶⁰ ECA, SL1/1/31: Edinburgh Town Council Minutes, 1684-1686.

described in this Dean of Guild building nuisance case, submitted in 1687, for example, were very dangerous indeed,

Anent ane petitione given in be George Mastertoune writer [i.e. lawyer] & James Peacock barbour mentioning that where they had property pertaining to them severall stories of ane foretenement of land lying upon the north side of the high street of Edinburgh opposite to the court of guard the forestone stair of which tenement belonged whollie to them but by reasone of the shortnes of the steps of the said stair persones repairing up & down the same were in great hazard of breaking their legs & many times have actuallie fallen down & hurt themselves neither can one persone pass by another upon the stair the passage being soe very narrow ... and therfor they granted warrand to the supplicants to take down the steps of the said stone stairs & put up new steps in stead.⁴⁶¹

This may well explain why inhabitants residing on the upper floors preferred, quite logically and rationally, to throw the contents of their chamber pots out of a window or door into the street below, an early version of what eventually became known as ‘gardy loo’ in the eighteenth century,⁴⁶² a practice known as ‘casting over’, rather than to risk injuring themselves by carrying arduous chamber pots down potentially dangerous, exterior staircases. While casting waste out of windows and doors was clearly unacceptable, which is why neighbours complained to the courts about it, and only a minority of inhabitants committed this offence, it is highly likely that this offence was not committed in an entirely thoughtless and inconsiderate manner, and that the motivation for committing this offence resulted at least partly from the fact that many inhabitants were living in high, multi-storey buildings with forestairs. The practice of casting over was nowhere near as common in the later half of the sixteenth century, when population density was lower, there were not as many high buildings and so many tenements had not yet been subdivided.

Insanitary nuisances relating to liquid waste disposal were a similarly common occurrence in this period, accounting for 20% of extant nuisances during this period. Problematic waste disposal into jaw holls or sewers and blocking or interfering with a

⁴⁶¹ ECA, SL144/1/7: Edinburgh Dean of Guild Court Minute Book, 1687-1695.

⁴⁶² ‘Gardy Loo’ was derived from the French, ‘gardez l’eau’, meaning beware of the water, and was traditionally shouted down into the street before throwing one’s chamber pot out of an upstairs window, in order to warn passers by of the impending unsavoury shower.

neighbour's syre or jaw holl were also common nuisances in this period, accounting for 13% and 11%, respectively. Drainage spouts or shoots in walls or floors, known as jaw holls or easing drops, were supposed to drain liquid waste directly into the network of covered and open ditches, running down the centre or sides of closes and streets, known as syres or watergangs. Most drainage-related insanitary nuisances pertained to neighbours' failure to scour their own sections of these rudimentary drainage systems regularly, inhabitants having situated them inconsiderately so that they emptied onto a neighbour's land or neighbours having negligently blocked them with solid waste. In April 1657, for example, Robert Weir, a baxter who lived on the north side of the Canongate 'a little beneath the flesh stocks', complained that his neighbours, James White, a Cutler, and his spouse, Elizabeth Baillie,

cast furth ... of ane holl or watter spoutt in the foirstaire all thair filth and wild excraments in such great abundance as no neighbour can gett entred [to] the close unspoilled [and] likwayes they cast furth of ane jaw holl or watter passadge in the back of thair said tenement all [of] thair filth which abuises the Complainers closs so that no persone is abill to abid the smell thairof which is liklie to cast his dwelling houss waist to his heavie prejudice and contrairie to good neighbourheid.⁴⁶³

After inspection of the close, the Dean of Guild and his council ordered,

James White and Elizabeth Baillie his spous to close up the said jaw holl or watter spoutt in the foirstaire of thair said tenement and to mak ane timber spoutt in the backsid thairof for conveying away thair watter and to putt ane graitter of iron at the heid therof [so] that nothing be cast furth of the samen butt watter in all time coming.⁴⁶⁴

Fitting a 'graitter of iron' at the head of the jaw holl was a proactive measure taken to ensure that this nuisance did not recur in the long-term future. That 'no persone' was 'abill to abyde the smell' caused by this drainage nuisance was included in the official court minutes, thus emphasising the large extent to which contemporaries were concerned about the olfactory quality of their outdoor environment.

⁴⁶³ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

⁴⁶⁴ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

The nuisance of flesher waste only accounted for 2% of extant nuisances in this period. In December 1656, for example, William Gibstowne complained to the Dean of Guild Court that his neighbour, George Suittie, a flesher,

haveing ane slaughter booth occupied and possest be him ... lyand at the castill wynd foote ... out of which booth ... [he] daylie cast furth his muck and blood upon the gavell [i.e. end wall of a building] of the said Complainers tenement the wall thairof being liklie to be consumed.⁴⁶⁵

The Dean of Guild and his council visited the slaughter house and ordered George Suittie to ‘clainy [i.e. clean] the said boundis and to keip it cleine in all time coming and that under the paine of twentie powndis scottis’.⁴⁶⁶ Similarly, in December 1657, Alexander Haithie, a wright and burgess, complained that his neighbour, John Forester, a bookbinder,

hes maid a greatt syre holl in his wall adjacent to his bounds throw which he and his tennentts (who killes bestial wher thair wes never anie killed before) castis furth all filth both of living and dead beasts in and upon the Complainers bounds so that thair is not a tennent abill to duell in anie of his housses for the wild smell of the corrupt blood and ... excraments.⁴⁶⁷

After inspection of the property, John Forrester was ordered to ‘close up the said syer holl with stone and lime and that he keep no slaughter hous ther heirefter so that the Complainer and his tennentts and bounds may be frie of filth in time coming ... under the penaltie of twentie pounds’.⁴⁶⁸ In Edinburgh, as in all pre-modern urban settlements, animals were raised and slaughtered near to residential properties, and the majority of fleshers seem to have disposed of their waste sufficiently considerably to avoid large numbers of complaints having been submitted to the Dean of Guild Court. But some inhabitants’ daily lives were adversely affected by living next to a flesher whose production processes and waste disposal arrangements produced excessively malodorous waste.

⁴⁶⁵ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

⁴⁶⁶ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

⁴⁶⁷ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

⁴⁶⁸ ECA, SL144/1/6: Edinburgh Dean of Guild Court Minutes, 1656-1667.

The detailed and hugely informative minute books of Edinburgh’s Dean of Guild Court, sometimes referred to as the *Neighbourhood Book*, are key to understanding how Edinburgh’s inhabitants interacted with and sensed their own environment, how important the sanitary condition of outdoor spaces was to them and how far the legal mechanism of the Dean of Guild Court protected neighbours against insanitary nuisances in their outdoor environment. Street cleanliness, efficient drainage and what contemporaries called ‘sweet and clean’ or ‘wholesome’ air was hugely important to Edinburgh’s inhabitants, who could and did use the legal facility of the Dean of Guild Court to self-regulate the micro-scale environment of their neighbourhoods, either directly in person or indirectly through their landlords in the case of tenants who rented their dwellings.

Fig. 38: Categorised Insanitary Nuisance Cases submitted to Edinburgh Dean of Guild Court, 1566-1700⁴⁶⁹

Categories of Insanitary Nuisance Cases	Number of cases	Percentage of cases
Throwing waste directly from doors and/or windows	106	35.2
Midding and/or rubbish left unremoved	63	21.0
Problematic waste disposal into jaw holls and/or sewers	52	17.3
Obstructing the flow of a neighbour’s syre and/or jaw holl	20	6.6
Leaking and/or noxious privy	19	6.3
Air pollution	11	3.7
Area used as common jake	11	3.7
Flesher waste	7	2.3
Failure to scour syre and/or jaw holl	6	2.0
Industrial Nuisance	2	0.7
Livestock	2	0.7
Dirty house	1	0.3
Dirty well	1	0.3
Total:	301	100

By far the largest category of complaint regarding insanitary nuisance, accounting for 35% of such complaints submitted between 1566 and 1700, was improper disposal of human waste out of windows and doors directly onto neighbours’ roofs, backlands and streets and closes below, which clearly contravened contemporaries’ standard of what constituted good neighbourhood. Inappropriately situated middings and rubbish heaps accounted for a not

⁴⁶⁹ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

inconsiderable 21% of such complaints and were a frequent source of conflict in Edinburgh's densely populated neighbourhoods. Problematic waste disposal into jaw holls or sewers accounted for 17% of insanitary nuisances and blocking or interfering with a neighbour's syre or jaw holl accounted for 7% of such nuisances. Inadequately maintained, leaking or noxious wet and dry privies were a less contentious issue, accounting for 6% of complaints pertaining to insanitary nuisances, possibly due to the fact that wet and dry stationary privies were relatively rare in Edinburgh at this time. While dirty trades were discussed frequently by Edinburgh Council, and removing them from the city centre to the urban periphery was clearly a major priority in the context of citywide sanitation, accounting for 20% of discussions and statutes between 1560 and 1700, the production processes of, and the noxious waste from, dirty trades were clearly far less of an issue in the micro-scale environments of individual closes and streets, only accounting for only 2% of extant presented insanitary nuisances over the course of the whole period 1560 to 1700. Conversely, throughout the course of the whole period 1560 to 1700, issues relating to liquid waste disposal were not discussed frequently at meetings of Edinburgh Council, accounting for only 6% of council discussions and statutes pertaining to outdoor sanitation, whereas 23% of insanitary nuisances submitted to the Dean of Guild Court related to liquid waste disposal and drainage. As mentioned above, this does seem to have been an area of outdoor sanitation which concerned individual inhabitants and caused significant controversy between neighbours in the micro-scale environment of individual streets and closes, whereas it was an area which Edinburgh Council did not deem a particularly problematic issue or a sufficiently important priority to warrant extensive discussion of it in the context of citywide sanitation.

While the categories of insanitary nuisance about which inhabitants complained are important, so are the numbers of insanitary nuisance cases submitted over time and in relation to other types of case handled by the court. While the extant minutes are neither complete nor

continuous, and there are some lengthy gaps of a year or more between the records of courts convened, the numbers of extant cases can still indicate important patterns over time.

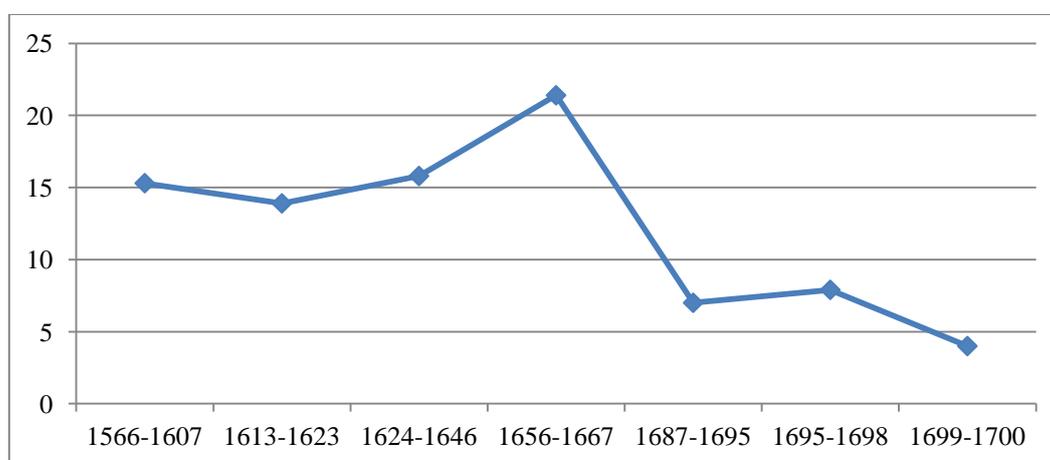
Fig. 39: Average Number of Insanitary Nuisance Cases presented annually to Edinburgh Dean of Guild Court, 1566-1700 (by extant minute book periods)⁴⁷⁰

Minute Book	Insanitary Nuisance Cases	Annual Average
1566-1607	45	1.1
1613-1623	65	6.0
1624-1646	63	2.7
1656-1667	61	5.5
1687-1695	35	3.8
1695-1698	26	6.5
1699-1700	6	3.0
Total:	301	4.1 (mean)

Fig. 40: Proportion of Cases submitted to Edinburgh Dean of Guild Court, 1566-1700, pertaining to Insanitary Nuisances (by extant minute book periods)⁴⁷¹

Minute Book	Total Cases	Insanitary Nuisance Cases	Proportion (%)
1566-1607	294	45	15.3
1613-1623	469	65	13.9
1624-1646	400	63	15.8
1656-1667	285	61	21.4
1687-1695	503	35	7.0
1695-1698	329	26	7.9
1699-1700	151	6	4.0
Total:	2,431	301	12.4 (mean)

Fig. 41: Line Graph showing the Proportion of Cases (%) submitted to Edinburgh Dean of Guild Court, 1566-1700, pertaining to Insanitary Nuisances (by extant minute book periods)⁴⁷²



⁴⁷⁰ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

⁴⁷¹ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

⁴⁷² ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

The numbers of cases dealt with by the Dean of Guild Court are less helpful than the proportion of total cases which pertained to insanitary nuisance because the latter takes into account the variables of how active the court was and how litigious inhabitants were at particular points in time, though large gaps in the minutes' survival, notably those between 1646-1656 and 1667-1687, preclude conclusive statistical analysis somewhat. It is significant that the proportion of cases rises steadily until the 1650s and 1660s, and then seems to drop significantly over the course of a large twenty-year gap in survival, in relation to other categories of complaints. While this could have resulted from an increase in other categories of complaint, something which cannot be examined conclusively given the lack of a continuous series of court minutes throughout the whole period, it is still significant that the proportion of insanitary nuisance cases begins to drop just as a citywide street cleaning system was established to alleviate the pressure of inhabitants' waste disposal responsibilities.⁴⁷³

The geographical location of insanitary nuisances is also important, highlighting more problematic streets, closes and areas of the city. Fortunately, 69.8% of extant cases detail the location of the insanitary nuisance.

⁴⁷³ See pp. 127-130 for more detailed information on Edinburgh's street cleaning system.

Fig. 42: Geographical Location of Insanitary Nuisance Cases submitted to Edinburgh Dean of Guild Court, 1566-1700⁴⁷⁴

Location	Number of cases	%
Forrester's Wynd	15	5.0
High Street	13	4.3
The Cowgait	12	3.9
The Canongait	8	2.7
Libbertoun's Wynd	7	2.3
West Bow	7	2.3
Gray's Close	5	1.7
Peebles Wynd	5	1.7
Steven Law's Close	5	1.7
Dickson's Close	5	1.7
Niddry's Wynd	5	1.7
Bell's Wynd	4	1.3
Nether Bow	4	1.3
Trans between Libbertoun's Wynd and Forrester's Wynd	3	1.0
Castle Hill	3	1.0
Connies Close	3	1.0
Gladstaine's Land	3	1.0
Jodrig's Wynd	3	1.0
Mr Alexander King's Close	3	1.0
The Old Provost Close	3	1.0
Aikman's Close	2	0.7
Beneath the Castle Wall	2	0.7
Blackfriar Wynd	2	0.7
Blacklock's Close	2	0.7
Borthwick's Close	2	0.7
Catchwell Close	2	0.7
East End of St Gile's Church	2	0.7
Fish Market Close	2	0.7
Fisher's Close	2	0.7
Halliestoun's Wynd	2	0.7
Herriot's Work	2	0.7
Hudeois Wynd	2	0.7
Jack Barman's Close	2	0.7
Mancham's Close	2	0.7
Master Mush Close	2	0.7
Over Bow	2	0.7
The Grassmarket	2	0.7
Locations featuring only 1 case	62	20.6
Unknown location	91	30.2
Total:	301	100

A substantial 20.6% of the insanitary nuisance cases submitted to Edinburgh Dean of Guild Court between 1566 and 1700 occurred in Forrester's Wynd, High Street, Cowgate, Canongate, Libbertoun's Wynd and West Bow. Significantly, West Bow, Libbertoun's Wynd

⁴⁷⁴ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

and Forrester's Wynd are situated in very close proximity, thus suggesting that this was an area of Edinburgh which was especially prone to the development of insanitary nuisances. As can be seen on the location map below, moreover, three of these locations are situated on the south side of the High Street.

Fig. 43: Sections from James Gordon of Rothiemay's View of Edinburgh, (1647).⁴⁷⁵

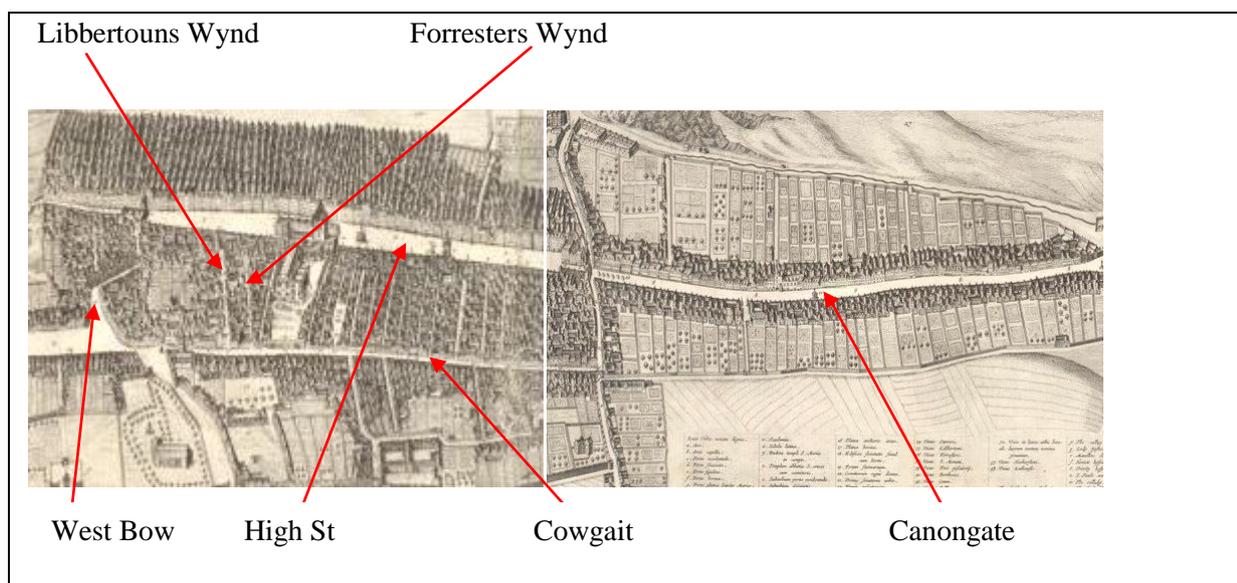


Fig. 44: Geographical Location of Insanitary Nuisance Cases submitted to Edinburgh Dean of Guild Court, 1566-1700⁴⁷⁶

Location	Number of cases	%
North side of the High Street	29	9.6
South side of the High Street	76	25.2
Unknown	196	65.1
Total:	301	100

Indeed, if the cases which occurred in closes running down from the High Street are split according to whether they descended from the north or the south side of the ridge of the High Street, an overwhelming majority of 72.4% of the 105 cases which occurred in such closes developed in those descending from the south side of Edinburgh's High Street. This can perhaps be explained by the fact that the North Loch, which lay at the foot of the closes descending from the north side of the High Street, was a beneficial natural receptacle for the

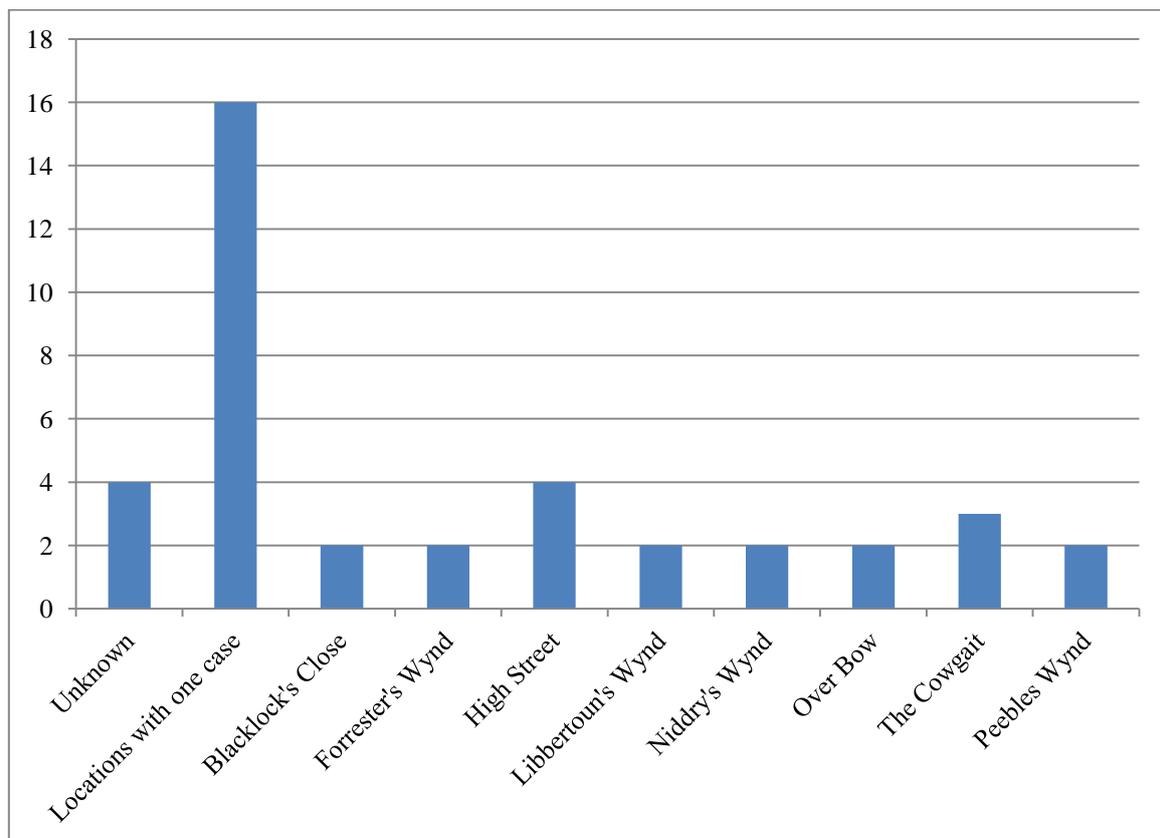
⁴⁷⁵ J. Gordon, *Edinodunensis Tabulam/Iacobus Gordinas P. Rothemayus* (Amsterdam, 1647), taken from The National Library of Scotland, 'Maps of Scotland', URL: <http://www.nls.uk/maps/early/gord1647.html> (Website accessed on 27/04/10).

⁴⁷⁶ ECA, SL144/1/2-9: Edinburgh Dean of Guild Court Minutes, 1566-1702.

drainage of liquid and solid waste. Closes running down from the south side of the High Street, however, drained far less efficiently into the Cowgate, which, as Wood rightly suggests, ‘nothing but torrential rain could have washed that street clean’.⁴⁷⁷ The court records suggest, therefore, that fewer insanitary nuisances were created in closes descending from the north side of the High Street despite the fact that they seem to have been more densely populated than those descending from the south side of the High Street, at least according to Rothiemay’s bird’s eye view of the city, at least around 1647, when it was drawn.

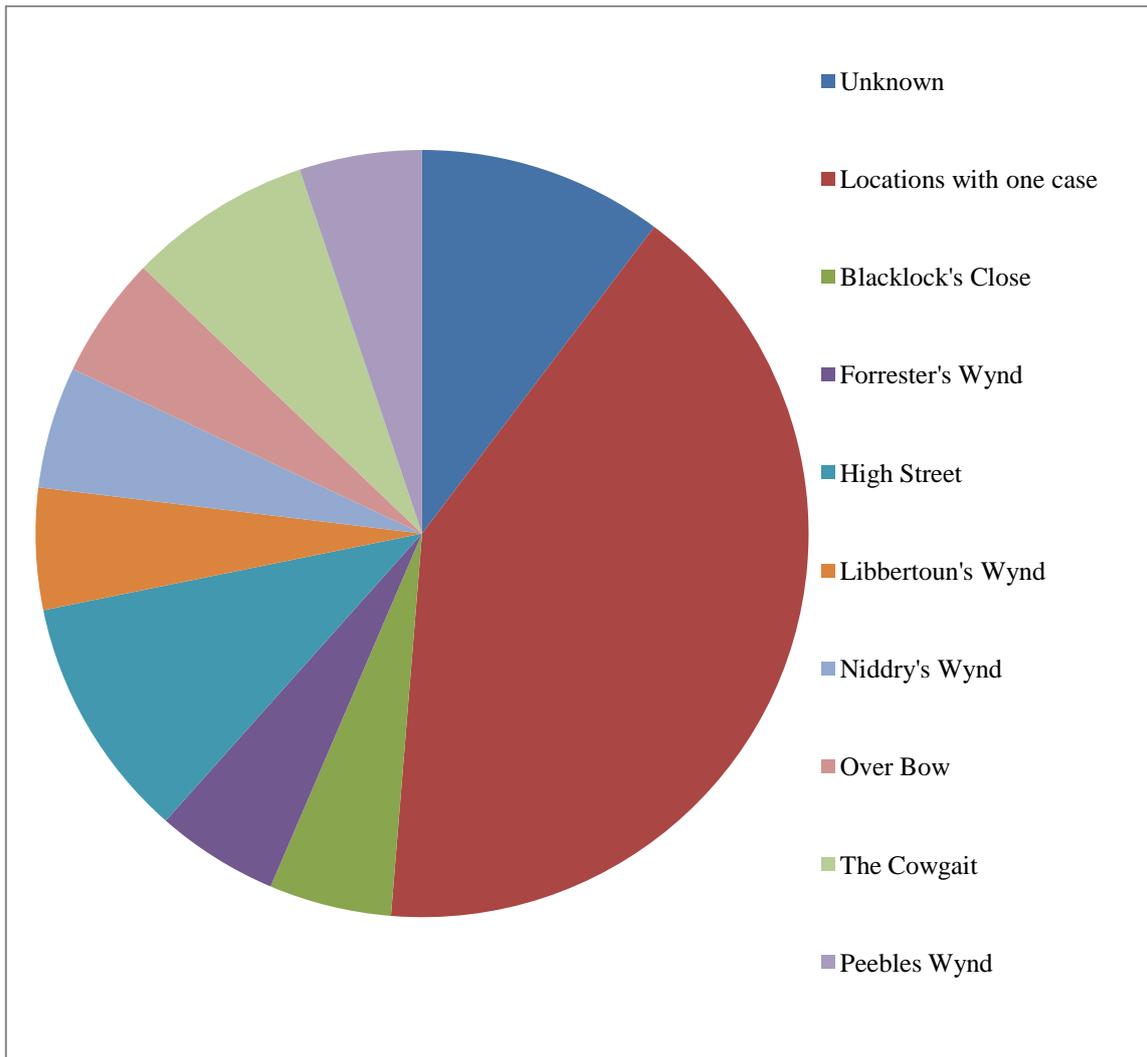
If the geographical location data is split broadly by time period and the proportionate occurrences of cases in particular locations is compared over time, much more subtle patterns emerge.

Fig. 45: Geographical Locations of Dean of Guild Hygiene Cases, 1566-1599



⁴⁷⁷ Wood, ‘The Neighbourhood Book’, p. 96.

Fig. 46: Geographical Locations of Dean of Guild Hygiene Cases, 1566-1599



The most frequently cited location in this period was the High Street, closely followed by the Cowgait. The High Street is unsurprising because it hosted activities which produced a potentially chaotic mixture of residential, business and agricultural waste. The Cowgait, however, is more surprising because in the sixteenth century it was a largely residential area housing relatively high status inhabitants. Perhaps the Cowgait did not feature the highest numbers of insanitary nuisances, but rather it housed higher status inhabitants who were more likely to use the Dean of Guild Court to suppress the nuisances which did occur. In the early seventeenth century, however, Forrester's Wynd hosted the highest number of prosecuted insanitary nuisances in the city, followed by Steven Law's Close, and to a lesser extent, by the High Street, the Cowgait, Mary King's Close, the Netherbow, Jackson's Close and Bell's

Wynd. It is significant that the Cowgait, which declined in terms of the social status of its inhabitants from the later sixteenth century into the early seventeenth century, hosted a smaller proportion of the city's prosecuted insanitary nuisances. This strongly suggests that complainants of a higher social status were more motivated to suppress insanitary nuisances which occurred in their neighbourhoods than those who possessed a lower social status. It is also significant that as the closes descending from the High Street became more densely populated during this period, far higher numbers of insanitary nuisances which occurred in them were reported to the Dean of Guild Court.

Fig. 47: Geographical Locations of Dean of Guild Hygiene Cases, 1600-1649

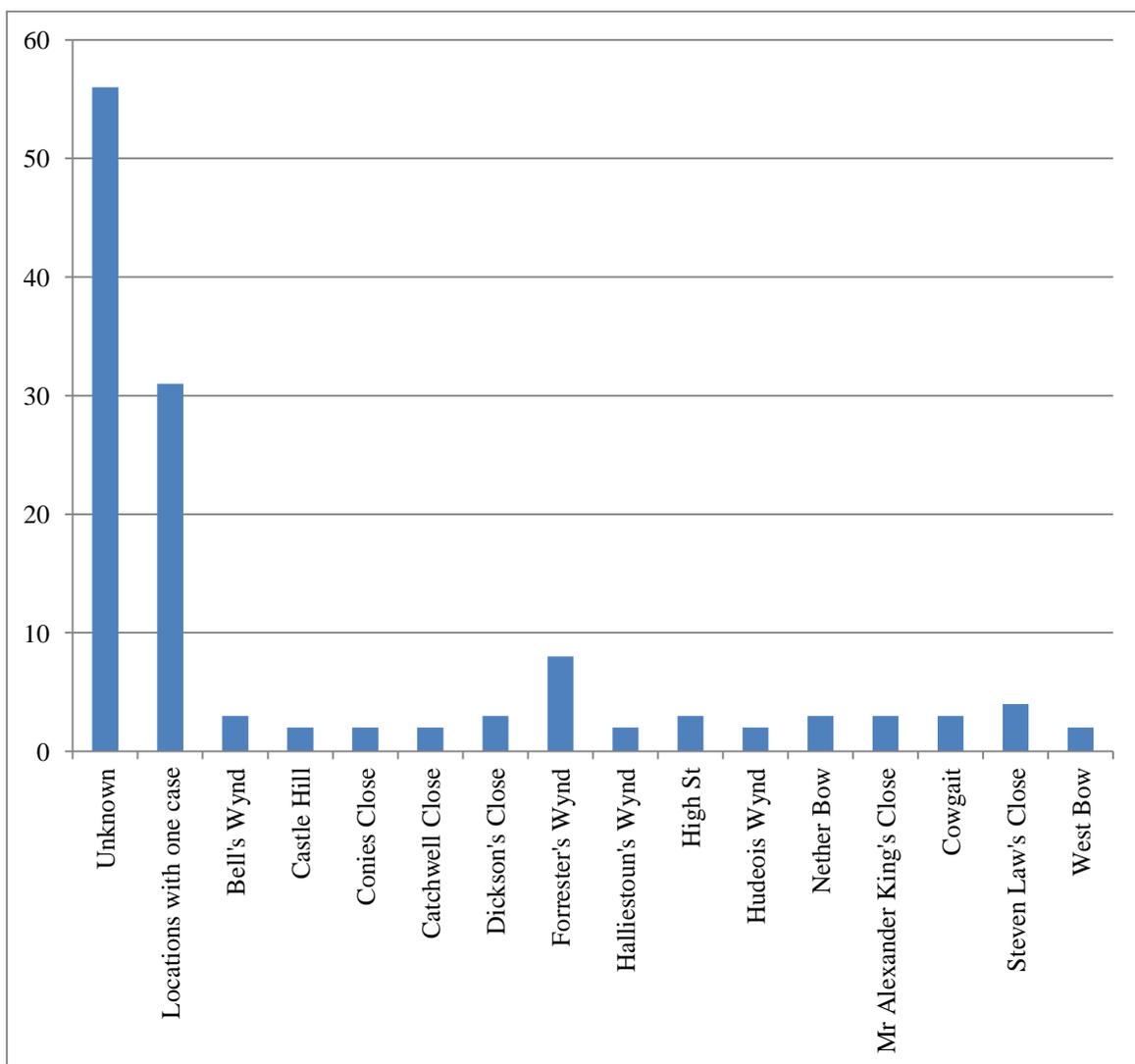


Fig. 48: Geographical Location of Dean of Guild Hygiene Cases, 1600-1649

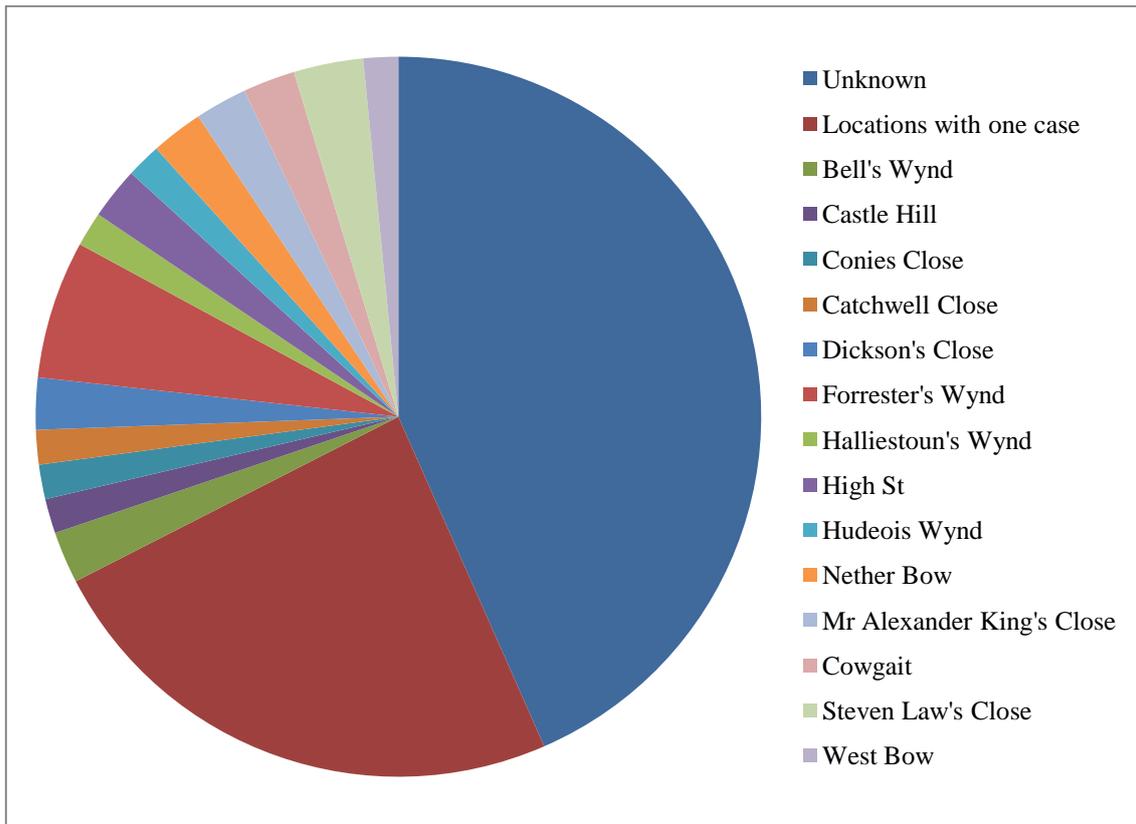


Fig. 49: Geographical Location of Dean of Guild Hygiene Cases, 1650-1700

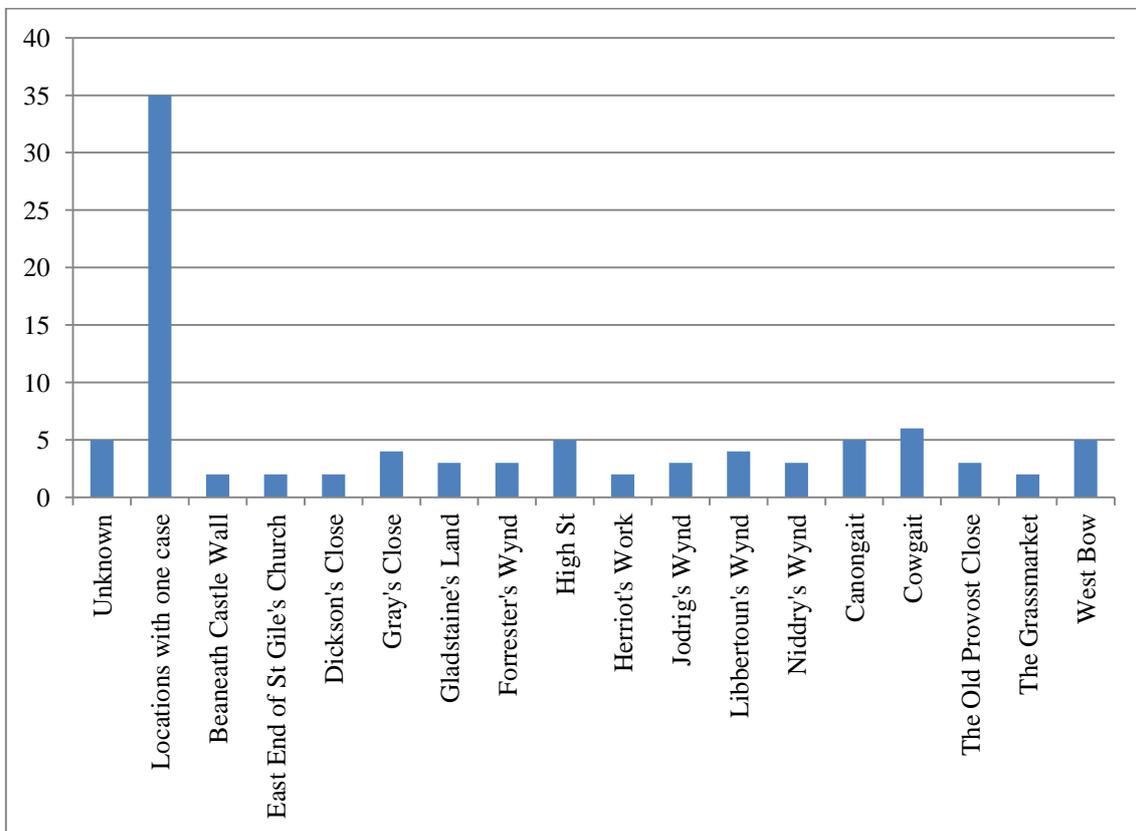
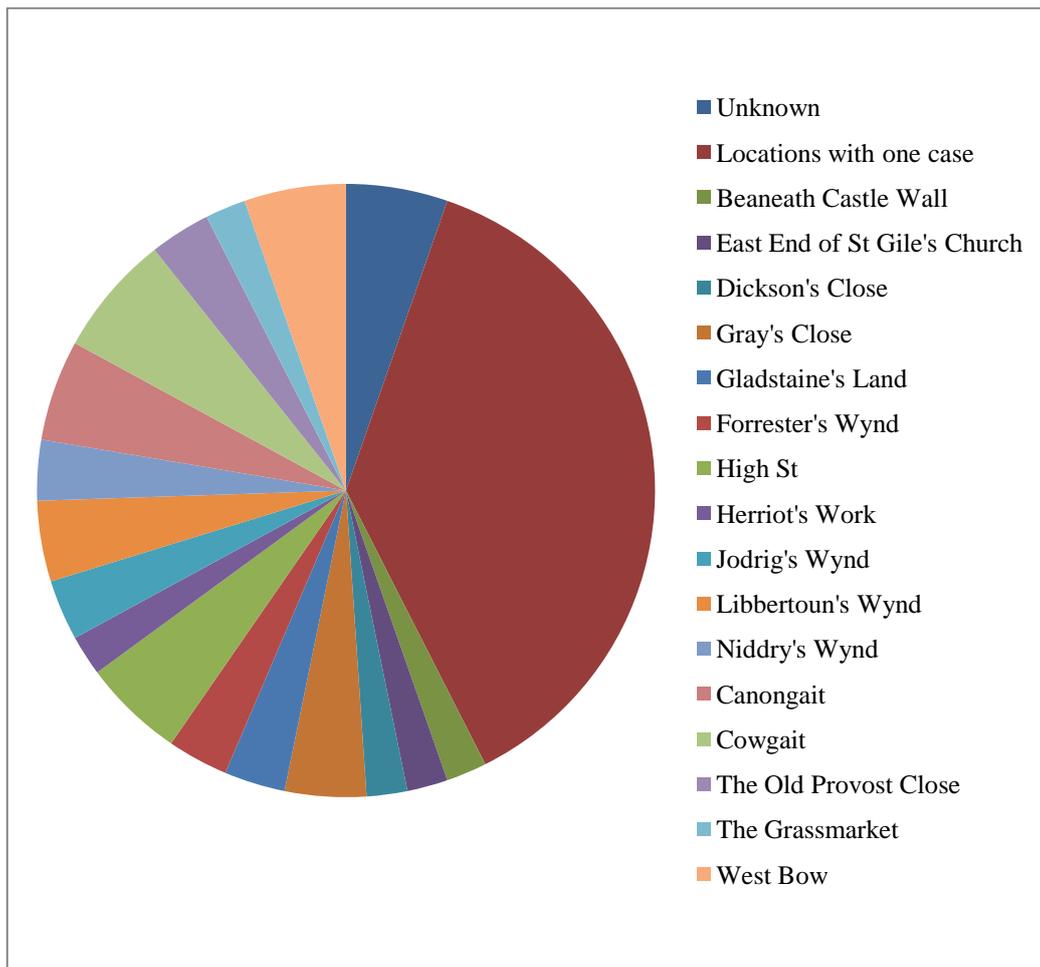


Fig. 50: Geographical Location of Dean of Guild Hygiene Cases, 1650-1700



The most popular location in the second half of the seventeenth century was the Cowgait, followed by West Bow, the Canongait and the High Street and to a lesser extent by Libbertoun's Wynd and Gray's Close. The Cowgait declined in status from the later sixteenth century into the early seventeenth and again into the second half of the seventeenth century, yet the numbers of prosecuted insanitary nuisances occurring within it increased, perhaps even as a result of its declining social status. This strongly suggests that although high-status inhabitants may well have been motivated to report insanitary nuisances in the later sixteenth century, that lower status residents were either engaging in activities which created more insanitary nuisances or they were even more motivated to suppress insanitary nuisances than their social superiors. This pattern could also have resulted from the fact that the Cowgait

became increasingly densely populated throughout the seventeenth century and that there was less space in which to dispose of waste considerately, efficiently and carefully.

The legal mechanism of Edinburgh's Dean of Guild Court is a shining example of an early modern legal facility designed to protect urban inhabitants against insanitary nuisances in their outdoor environment as their neighbourhoods became increasingly densely populated. That so many complainants approached this court to have insanitary nuisances suppressed, and indeed that so many tenants clearly pressured their landlords to approach the court on their behalves, often by threatening to leave their rented tenement if the nuisance continued, suggests that the sanitary condition of outdoor spaces in the environment was highly important to Edinburgh's inhabitants. While landlords arguably complained to protect their rental income, rather than their tenants' life quality, first and foremost, what is important is that their tenants were intolerant of insanitary conditions. When neighbours' waste disposal arrangements reduced inhabitants' life quality, crossing the line in contemporaries' minds between acceptable and unacceptable, acceptable having been collectively labelled as 'guid nichtborheid', inhabitants were quick to use the facility of Edinburgh's Dean of Guild Court to reclaim an acceptable standard of outdoor cleanliness.⁴⁷⁸ While the minutes of this court were written by scribes, in admittedly rather formulaic language, the details of the complaints originated with the inhabitants themselves, whether they owned or rented the properties concerned, and these minutes are testimony to their efforts to maintain an acceptable standard of sanitation in the outdoor micro-scale environment of their neighbourhoods. Indeed, Wood agrees that the cases paid 'much attention ... to the primitive sanitary arrangements, showing that the ... inhabitants had the will, if not the means, to be cleanly'.⁴⁷⁹

⁴⁷⁸ Although the extant lists of presentments for insanitary nuisances in York were able to be broken down and analysed by gender, the Dean of Guild data did not permit easy analysis of offenders by gender. Many cases referred to the generic term of 'the tenants' because their landlords were being officially held to account for their nuisances and many others cited the names of both the male and female partners who lived together in the properties concerned, albeit as tenants, which precluded certain identification of which member of the household actually created the insanitary nuisance.

⁴⁷⁹ Wood, 'The Neighbourhood Book', pp. 89-90.

York

Fig. 51: Main Categories of Insanitary Nuisance Fines exacted by various Courts in the City of York, 1559-1599 (Mean average per number of extant years in respective decades)

	No. of extant years in decade	Livestock		Street Cleanliness		Solid Waste-Disposal		Liquid Waste-Disposal and Drainage		Dirty Trades		Total	
		No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.
-		No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.
1559-1568	2	11	5.5	-	-	-	-	-	-	-	-	11	5.5
1580-1589	3	29	9.7	1	0.3	8	2.7	-	-	-	-	38	12.7
1590-1599	3	13	4.3	-	-	16	5.3	-	-	-	-	29	9.7
1559-1599	8	53	6.6	1	0.1	24	3	-	-	-	-	78	9.8

In York, the overwhelming majority of fines for insanitary nuisances in the period 1559 to 1599, extracted by the array of courts which held simultaneous jurisdiction over environmental regulation, were for the offence of permitting one's livestock to roam freely through public areas, which reflects and explains the frequency of bylaws and corporation meeting discussions pertaining to this issue: 15% of corporation discussions and bylaws over the whole period. However, it was not necessarily the most problematic nuisance and it was not necessarily regulated so stringently specifically because this nuisance was adversely affecting inhabitants' life quality more so than other nuisances. It may simply have been, rather, the most frequently committed nuisance, and therefore the easiest one to fine, thereby raising most funds for the corporation. However, it is true that free-roaming livestock did cause substantial problems in terms of keeping strategic thoroughfares passable for the purposes of trade and the waste left behind in public areas by these free-roaming animals would have been quite substantial.

The second most frequent category of offence was solid waste disposal, again reflecting the most frequently discussed issues in council meetings during this period. This suggests that there was a rough degree of symmetry between the kinds of insanitary nuisances which were being regulated and the topics within this area of city government which were

being discussed by the corporation. However, street cleanliness was regulated far less than it was discussed at council meetings, perhaps suggesting that inhabitants were largely fulfilling their obligations in relation to street cleaning at least.

Fig. 52: Main Categories of Insanitary Nuisance Fines exacted by various Courts in the City of York, 1600-1649 (Mean average per number of extant years in respective decades)

	No. of extant years in decade	Livestock		Street Cleanliness		Solid Waste-Disposal		Liquid Waste-Disposal and Drainage		Dirty Trades		Total	
		No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.
-													
1600-1609	2	21	10.5	3	1.5	5	2.5	2	1	-	-	31	15.5
1610-1619	8	103	12.9	15	1.9	14	1.75	7	0.9	9	1.1	148	18.5
1620-1629	7	60	8.6	5	0.7	6	0.9	5	0.7	-	-	76	10.9
1630-1639	10	31	3.1	73	7.3	18	1.8	12	1.2	3	0.3	137	13.7
1640-1649	7	78	11.1	42	6	24	3.4	18	2.6	-	-	162	23.1
1600-1649	34	293	8.6	138	4.1	67	2.0	44	1.3	12	0.4	554	16.3

Nuisances pertaining to dirty trades and liquid waste disposal failed to bring in any fines at all during this period, at least in the extant years analysed. As in the later sixteenth century, livestock was the most frequently presented insanitary nuisance, followed by street cleanliness rather than solid waste disposal, which was the second most frequent nuisance in the preceding four decades. These statistics do not necessarily infer, however, that livestock was the most annoying or problematic nuisance because, as was mentioned above, it may well have been simply the most frequently committed nuisance, and therefore the easiest nuisance to fine by a fiscally motivated corporation. Nevertheless, inhabitants could not have been fined for something which they did not commit, so clearly free-roaming livestock was a common nuisance, but the extent to which inhabitants were fined for this nuisance does seem excessive and it is impossible to discern to what extent this nuisance actually annoyed inhabitants or contributed to poor outdoor sanitation. What is most significant in these statistics is that nuisances pertaining to street cleanliness rose from zero fines in the last four decades of the sixteenth century to the second most frequent offence in the first half of the seventeenth century. This is a significant increase and perhaps reflects the corporation's

concern over street cleanliness in response to the threat of plague in this period in particular. Nuisances relating to liquid waste disposal and drainage and dirty trades started to be fined in this period, but only in very low numbers.

Fig. 53: Main Categories of Insanitary Nuisance Fines exacted by various Courts in the City of York, 1650-1700 (Mean average per number of extant years in respective decades)

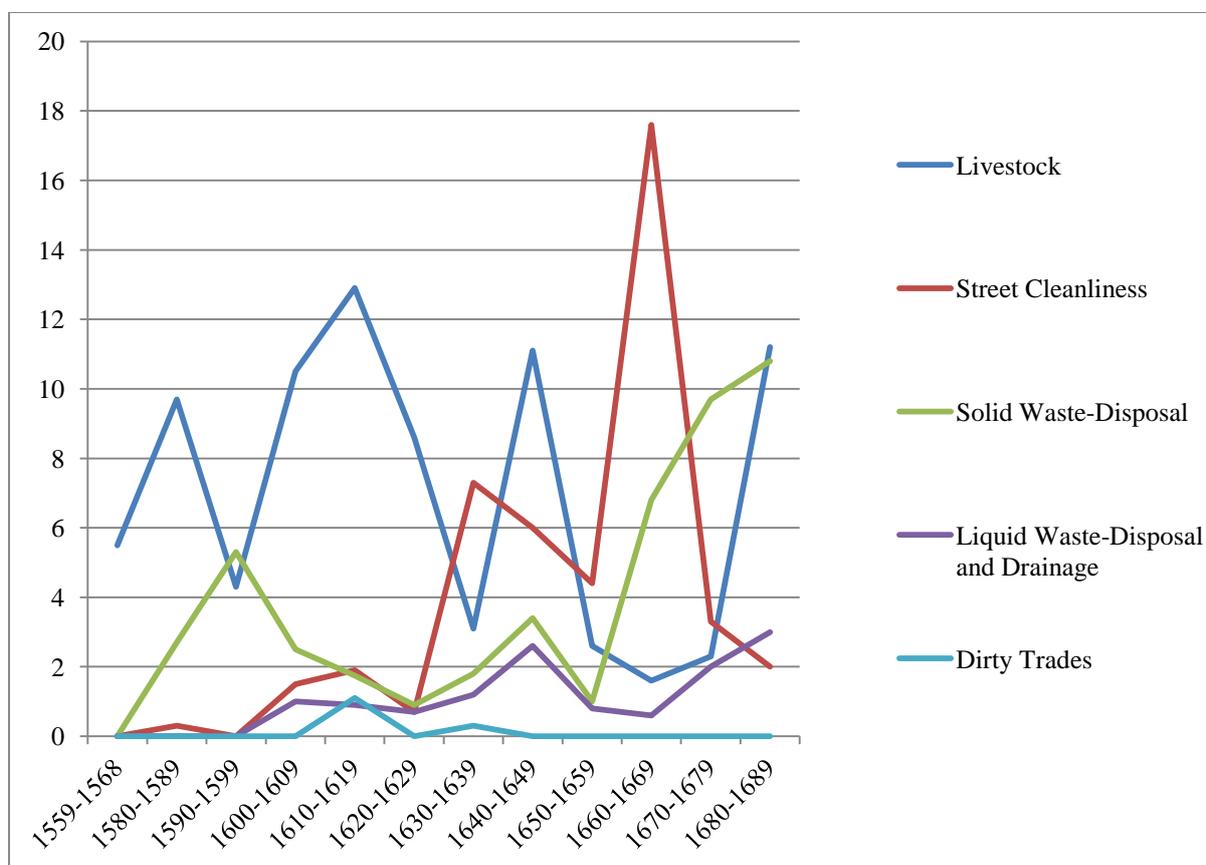
	No. of extant years in decade	Livestock		Street Cleanliness		Solid Waste-Disposal		Liquid Waste-Disposal and Drainage		Dirty Trades		Total	
		No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.
-													
1650-1659	5	13	2.6	22	4.4	5	1	4	0.8	-	-	44	8.8
1660-1669	5	8	1.6	88	17.6	34	6.8	3	0.6	-	-	133	26.6
1670-1679	3	7	2.3	10	3.3	29	9.7	6	2	-	-	52	17.3
1680-1689	5	56	11.2	10	2	54	10.8	15	3	-	-	135	27
1650-1689	18	84	4.7	130	7.2	122	6.8	28	1.6	-	-	364	20.2

In sharp discontinuity with the preceding ninety years, insanitary nuisances pertaining to street-cleanliness, and to a slightly lesser extent solid waste disposal, dominated presentments for insanitary nuisances made by various courts during the period 1650 to 1689 and nuisances pertaining to livestock became a significantly less dominant issue. No fines at all were received for nuisances relating to dirty trades and only a few were received for nuisances concerning liquid waste disposal and drainage. This is not necessarily the result of changes in the prevalence of the different categories of nuisances, but rather it could well reflect the changing priorities within the corporation and in turn among the court jurors, wardens and constables who instigated such presentments.

Fig. 54: Main Categories of Insanitary Nuisance Fines exacted by various Courts in the City of York, 1559-1689 (Mean average per number of extant years in respective decades)

	No. of extant years in decade	Livestock		Street Cleanliness		Solid Waste-Disposal		Liquid Waste-Disposal and Drainage		Dirty Trades		Total	
		No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.	No.	Av.
-													
1559-1568	2	11	5.5	-	-	-	-	-	-	-	-	11	5.5
1580-1589	3	29	9.7	1	0.3	8	2.7	-	-	-	-	38	12.7
1590-1599	3	13	4.3	-	-	16	5.3	-	-	-	-	29	9.7
1600-1609	2	21	10.5	3	1.5	5	2.5	2	1	-	-	31	15.5
1610-1619	8	103	12.9	15	1.9	14	1.75	7	0.9	9	1.1	148	18.5
1620-1629	7	60	8.6	5	0.7	6	0.9	5	0.7	-	-	76	10.9
1630-1639	10	31	3.1	73	7.3	18	1.8	12	1.2	3	0.3	137	13.7
1640-1649	7	78	11.1	42	6	24	3.4	18	2.6	-	-	162	23.1
1650-1659	5	13	2.6	22	4.4	5	1	4	0.8	-	-	44	8.8
1660-1669	5	8	1.6	88	17.6	34	6.8	3	0.6	-	-	133	26.6
1670-1679	3	7	2.3	10	3.3	29	9.7	6	2	-	-	52	17.3
1680-1689	5	56	11.2	10	2	54	10.8	15	3	-	-	135	27
Total:	60	430	7.2	269	4.5	213	3.6	72	1.2	12	0.2	1,152	100

Fig. 55: Line Graph showing Main Categories of Insanitary Nuisance Presentments, 1559-1689 (average per number of extant years in decade)



The line graph above shows that street cleanliness and livestock were the most frequently presented insanitary nuisances throughout the century, with solid waste disposal increasing significantly towards the very end of the century. Dirty trades and liquid waste disposal were the least presented offences, perhaps due to the relatively small pool of inhabitants who could potentially have created insanitary nuisances associated with dirty trades and due to the relatively less serious consequences of inadequate drainage and disposal of liquid wastes, which very often would have simply drained away, thus causing only a short-term problem, and would perhaps have been far less malodorous than long-term accumulations of solid waste.

Fig. 56: Main Categories of Insanitary Nuisances presented in York City (by the sex of offender), 1559-1689

-	Male		Female		Both ⁴⁸⁰		Unspecified		Total:	
	No.	%	No.	%	No.	%	No.	%	No.	%
Livestock	391	91	30	7	-	-	11	3	432	38
Street Cleanliness	296	93	21	7	-	-	2	1	319	28
Solid Waste-Disposal	264	88	29	10	1	(0.3)	7	2	301	26
Liquid Waste-Disposal and Drainage	78	89	9	10	1	1	-	-	88	8
Dirty Trades	11	92	-	-	-	-	1	8	12	1
Totals:	1040	90	89	8	2	(0.2)	21	2	1,152	100

That forenames were recorded alongside most (98%) of the fines in the Chamberlains' account books means that they can be split according to the gender of the offender. Unsurprisingly, it is clear that the overwhelming majority of offenders (90%) was male, suggesting that very often men took responsibility for nuisances caused by their whole families, as heads of household. Only a small minority (8%) was female. Out of this small minority of female offenders, however, interesting patterns emerge, such as that livestock nuisances, most of which involved the inadequate housing of swine, and nuisances pertaining to the disposal of solid waste accounted for 66% of female offences. Women managed household food purchases and familial food consumption, and were consequently responsible

⁴⁸⁰ Describes a party presented jointly, which contained at least one woman and one man.

for administering residual food waste to swine. They were also responsible for the disposal of solid waste, especially of manure produced by pigs and other animals housed on backlands. It is unfortunate that we cannot discern how many of the female offenders lived alone, and were therefore the default offender in relation to a nuisance committed from their property, and compare those statistics against how many presented women lived with an adult male, but were nevertheless expected to take responsibility for the nuisance because they committed it themselves or the nuisance was perceived as having been more closely related to their domestic domain than that of their husband. Unsurprisingly, the only category of offences committed exclusively by men was that of dirty trades, which were overwhelmingly male-dominated crafts and the craftsman or craftsmen would have taken sole responsibility for the nuisance automatically. A similar pattern was discerned from Carlisle's seventeenth-century court leet records. Only one insanitary nuisance offence was committed by more women than men: obstructing the streets with swine troughs. Moreover, three insanitary nuisance offences were committed exclusively by men: leaving raw materials and rubbish in the streets, drying noxious skins in public areas and leaving animals unburied. The first two were associated with primarily male crafts and trades which required bulky raw materials and which produced large amounts of rubbish; the third might have resulted from women's disinclination, or indeed inability, to move and dispose of heavy animal corpses.⁴⁸¹

Fig. 57: Insanitary Nuisance Fines exacted from Inhabitants of each Ward, 1559-1689

Ward:	Bootham Ward		Monk Ward		Walmgate Ward		Micklegate Ward		Unspecified		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
-											-
1559-1687	68	6	74	6	63	6	56	5	891	77	1,152

The ward in which the insanitary nuisance offence was committed was not recorded in the overwhelming majority (77%) of cases in the chamberlains' accounts. Within the minority of nuisance fines for which the ward was recorded, however, there was a striking degree of

⁴⁸¹ Skelton, 'Beadles, Dunghills and Noisome Excrements', pp. 59-60.

symmetry across the wards, a range of only eighteen between the ward with the most insanitary nuisances, Monk Ward, and that with the fewest, Micklegate Ward. Considering that Walmegate and Micklegate Ward had most open space, one would expect to see most nuisances in Bootham and Monk Ward and fewest in Micklegate and Walmegate Ward, which is indeed the case, according to these statistics, but only by a minimal degree. Nevertheless, this does suggest somewhat that more open space led to fewer insanitary nuisances.

Fig. 58: Locations of Insanitary Nuisance Offences presented in York City, 1559-1689

-	Total:	
	No.	%
Toft Green	17	2
Without Micklegate Barr	13	1
Hungate	10	1
Staithe	9	1
Horse Fair	7	-
Bootham	6	-
St Andrewgate	4	-
Baggergate	4	-
The Mint Yard	3	-
Goose Lane	3	-
Holgate Lane	3	-
Jilligate	3	-
Monkgate	3	-
Scarcroft	3	-
St Anne's Close	3	-
Swinegate	2	-
Tanghall Lane	2	-
The Common	2	-
Allhallow's Church	2	-
Goodramgate	2	-
St Leonard's Landing	2	-
St Margaret's Church	2	-
St Peter Prison	2	-
The Shambles	2	-
The Water Lane	2	-
Without Skeldergate Posterne	2	-
Locations with one nuisance	43	-
Unspecified	996	-
Totals:	1,152	100

Even fewer insanitary nuisance fines specified a precise location than specified a ward (14%), but the statistics are still meaningful. The locations with only one recorded nuisance were obviously less problematic hotspots than those associated with seventeen and thirteen throughout the period. Toft Green was the location in the city most frequently associated with an insanitary nuisance, accounting for 11% of those nuisances which detailed a specific location. This was an open area on which inhabitants could graze their livestock, but it became a popular and convenient hotspot on which many inhabitants chose to dump their rubbish and manure. The second most common location noted in the chamberlains' accounts was Without Micklegate Bar, accounting for 8% of nuisances with a specific location, which suggests that although inhabitants were dumping rubbish in a public place which had not been specifically set aside for waste disposal, they did at least take the time and make the effort to remove it beyond the city walls. That even the minority of inhabitants who dumped rubbish in inappropriate public places did so in places which were relatively less problematic than a central, main thoroughfare, for example, suggests that contemporaries were not completely indifferent to disposing of waste carefully and that they did respect their cityscape to some extent. The third most common location was Hungate, accounting for 6% of nuisances with a specified location, which was an unusually straight street descending down to the River Foss, which provided an excellent location for the watering of cattle because it was relatively easy to drive cattle down the street. Moreover, it was also the site at which muck was loaded onto boats to be transported to Tang Hall down the River Foss. Therefore, the street attracted waste from driven cattle as well as muck dumped by inhabitants.

While the insanitary nuisance fines in York are not very detailed and they were recorded in list form, they still reveal much about the regulation of such nuisances in the city. While they might have been extracted by a fiscally motivated corporation, that they were even described as offences confirms that such behaviour was unambiguously unacceptable

and by the very existence of a fine for creating such insanitary nuisances, creating those nuisances was discouraged.

Conclusion

In conclusion, the aspect of the whole, overarching and seamless system of early modern urban government, which has been artificially isolated and called environmental regulation for the purposes of analysis, but for which contemporaries themselves did not have a name precisely because it was not conceptualised as a separate part of urban management, should not be seen as an exclusively top-down attempt to force and regulate passive and unwilling inhabitants to keep their outdoor environment clean. Maintaining an acceptable standard of outdoor cleanliness, in the context of necessary urban agriculture, horse-drawn traffic and relatively uncomplicated sanitation processes and systems was far more deeply integrated into and less alienated from daily life, far more hands-on and far more beholden to the compliance and efforts of householders than it is today.⁴⁸² Its effective functioning relied on inhabitants' support, compliance and self-regulation at the level of respective neighbourhoods in order for the systems to function efficiently. Many of the examples which have been quoted resulted unambiguously from intolerant neighbours' complaints, whether individually or in groups, and neighbourhood concern over insanitary nuisances in the urban landscape seems to have been strong, at least among the majority of urban dwellers. Indeed, the nuisance cases submitted officially to beadles, local courts and burgh councils are, by definition, the ones which neighbours had failed to resolve informally, privately and verbally, and they surely represent the tip of a much larger iceberg of inhabitants' concern over the sanitary condition of the urban landscape.

⁴⁸² For a more general discussion of the relationship between man and the environment in the sixteenth and seventeenth centuries, see K. Thomas, *Man and the Natural World: Changing Attitudes in England 1500-1800* (London, 1983), especially pp. 243-254.

The evidence presented in this chapter strongly suggests that, throughout the period, the overwhelming majority of urban dwellers acted as an informal, but remarkably coherent and effective, institution in their collective and individual efforts to regulate their micro-scale environment by suppressing their less fastidious neighbours' insanitary nuisances. In the case of environmental self-regulation, self-interest and community interest were not mutually exclusive. Rather, individuals' complaints contributed to and checked the salubrity of the whole neighbourhood and demonstrate how unacceptable it was for one to allow their waste disposal arrangements or the sanitary condition of their property to fall below the collectively upheld neighbourhood standard of outdoor cleanliness, termed by contemporaries simply as 'keeping neighbourhood'. Clearly, urban governors and the majority of urban inhabitants were far from indifferent to the sanitary condition of outdoor public spaces and contemporaries certainly valued having a relatively clean outdoor environment. The people who inhabited the urban neighbourhoods of Edinburgh and York between 1560 and 1700 necessarily had a vested interest in upholding a tolerable standard of cleanliness and olfactory sensation in the urban landscape which framed their daily lives.

In York, as in Edinburgh, the city governors had less than full control over environmental regulation and worked with rather than against the urban populations they were managing. Seventeenth-century sanitation systems and processes could not have functioned without significant compliance from householders. That these systems functioned at all is testimony to the majority of inhabitants' efforts to keep their outdoor environment clean. The behaviour of the minority of inhabitants who created insanitary nuisances and neglected their communal street cleaning duties was perceived by their peers as unambiguously unacceptable. Such compatibility between top-down governance and bottom-up concern, and the generally positive attitude towards waste disposal and street cleanliness, continued at least up to the turn of the eighteenth century, by which point a substantial, if not comprehensive, sanitation infrastructure had emerged.

Conclusion

Establishing the cultural attitudes and values of early modern British people towards the cleanliness of outdoor, public spaces has been the key task of this thesis. It has explored how local and national governors, civic officials and urban inhabitants, living in Edinburgh, York and many other smaller urban settlements across lowland Scotland and northern England, managed the disposal of waste and limited the creation of insanitary nuisances in the urban landscape. They did this in order to ensure that malodours and unpleasant and problematic waste remained within collectively tolerable parameters for the benefit of inhabitants and visitors alike. What has been revealed is that local governors, civic employees and the majority of urban inhabitants valued having a clean environment in their open public spaces and they were motivated to invest willingly significant time and effort into improving and maintaining their collective standard of cleanliness in the urban landscape. It is indisputable that early modern urban dwellers and their governors appreciated inhabiting an environment which was devoid of foul smells and unpleasant waste materials, and they certainly made a distinction between what they labelled unambiguously as a ‘nasty’, ‘filthy’ or ‘noysome’ street and what they labelled as a ‘sweet’ and ‘clean’ street. In short, contemporaries drew a line between what they considered acceptable and unacceptable and they endeavoured to maintain that standard, as individuals, as neighbours and as inhabitants of the respective towns and cities of which they were clearly so proud. But in the context of long-term historical analysis, how clean the environment actually was from one decade or century to the next matters far less than contemporaries’ changing perceptions of it and their variable efforts to improve it and to uphold or to attempt to uphold their own standards of cleanliness.

The thesis reconstructed human experiences, perceptions, changing attitudes towards and engagement with the outdoor environment rather than reconstructing the condition of the physical environment itself – the social element of environmental regulation and the disposal

of waste. Macro-scale action to improve urban sanitation, in the form of council regulations, citywide street-cleaning initiatives and the provision of courts to suppress insanitary nuisances in the first place, are important. But equally important are the, micro-scale actions taken by inhabitants themselves to improve the neighbourhoods which they called home, such as petitions to councils and complaints made to either their landlords or to the courts. Throughout the period, the majority of urban neighbours acted as an informal, but remarkably coherent and effective, institution in their collective and individual efforts to regulate their micro-scale environment by suppressing their less fastidious neighbours' insanitary nuisances. In the case of environmental self-regulation, self-interest and community interest were not mutually exclusive. Rather, individuals' complaints contributed to and checked the salubrity of the whole neighbourhood.

In Edinburgh, the majority of inhabitants, the city governors who were responsible for Edinburgh's environmental regulation and the national governors who interfered in it intermittently were far from indifferent to the sanitary condition of outdoor public spaces in the city. The people who inhabited Edinburgh necessarily had a vested interest in upholding a tolerable standard of cleanliness and olfactory sensation in the outdoor public spaces which framed their daily existence. Edinburgh's inhabitants and governors designed, improved and maintained far more sophisticated systems with which to drain and clean the cityscape of which they were so proud than historians have tended to assume and their attitudes towards outdoor sanitation and waste disposal complemented, reflected and underpinned one another to a remarkable extent. It is clear that inhabitants' responsibilities declined increasingly over time as the burgh authorities took on a greater role in disposing of inhabitants' waste and cleaning the streets on their behalf in return for the street cleaning taxes which they extracted from 'substantial' householders and the proceeds of the muck which they sold as fertiliser to local farmers. This marked change took place within the context of a wider intensification of local and national government from the late sixteenth into the early seventeenth century in

conjunction with an increasing desire to portray the urban landscape as a civil environment.⁴⁸³ Contemporaries surely understood exactly where the line between theirs and the burgh authorities' responsibilities lay, and the majority of inhabitants fulfilled their obligations without complaint. The minority who did not might well have received verbal condemnation from their neighbours, which could have caused them to develop feelings of shame in relation to dirt. A significant minority of inhabitants even found either themselves or their landlords on their behalves facing the Dean of Guild Court for having created insanitary nuisances which offended their neighbours, thus demonstrating that it was unacceptable for one to allow their waste disposal arrangements or the sanitary condition of their property to fall below collectively upheld neighbourhood standards of outdoor cleanliness, which contemporaries termed 'keeping good neighbourhood'. It is lamentable that Edinburgh's population density increase in the seventeenth century cancelled out much of the improvement which would otherwise have ensued from the developments in street cleaning and waste disposal, had the population of the city remained relatively stable. Edinburgh's streets were almost certainly dirtier in 1700 than they had been in 1560, but the proactive and enthusiastic manner in which the city's governors responded to the sanitation challenge is far more significant than their ultimate failure to improve conditions.

York's waste disposal systems and processes also became increasingly centralised between 1560 and 1700, albeit not as dramatically as those of Edinburgh in the same time period. However, while York's householders' waste disposal responsibilities decreased somewhat, after the introduction of the scavenger system in 1580 – the most significant change in this area of city government over the course of fourteen decades – inhabitants still retained much of their traditional responsibilities due to the survival of the medieval forefront system alongside the scavenger system. The scavengers were paid to remove as much waste

⁴⁸³ Slack, *Reformation to Improvement*, pp. 53-76; P. Borsay, *The English Urban Renaissance* (Oxford, 1989), p. 68.

as a man put out at his door and to clean the main thoroughfares thrice weekly. But, in reality, householders were still responsible for cleaning their forefronts, scouring their gutters and removing a large proportion of their own waste, or at least moving it to a designated disposal point in their ward or parish or transporting it to boats on the River Fosse so that it could be transported down the river to Tang Hall pastures near Heworth to be used in the cultivation of crops. While there was a distinctly and unmistakably more serious tone as well as a numerical increase in the council discussions and bylaws pertaining to this area of city government in the first half of the seventeenth century, and the corporation clearly made a significant effort to improve street cleanliness to combat plague during that period, for the most part of the period 1560 to 1700, the corporation reacted to problems on an ad hoc basis. Apart from establishing the scavenger system in 1580, and several minor innovations throughout the seventeenth century in terms of allocating specific locations at which to bury offal, managing the movement of livestock and regulating the sale of urban muck to local rural farmers to be used as fertiliser, waste disposal processes and systems remained relatively stagnant. Indeed, the medieval forefront system survived intact right up to the turn of the seventeenth century and despite the need for several reminders to inhabitants to perform their duty to keep their forefronts clean, it seems to have functioned quite well.

Environmental regulation in both Edinburgh and York functioned in a necessarily, but by no means exclusively, top-down manner, with orders originating from Edinburgh Council, to the bailies and then to the inhabitants through the medium of announcements by ‘sound of drum’ and from York Corporation, to the officers of the wards, then to the constables and then down to the inhabitants by oral announcement in the streets or through the medium of their parish churches. Seemingly, householders had no choice but to obey such orders. However, inhabitants could petition their governors to complain about nuisances which were reducing their life quality or to request liberty to implement solutions to insanitary nuisances themselves, such as hanging a locked door or building a gate across a vennel to prevent

inhabitants from dumping rubbish on private land. They could also organise their own informal waste disposal methods and facilities within their own neighbourhoods, such as communal dunghills. Inhabitants could flout bylaws and dump their rubbish where they saw fit, taking care to remove it beyond the city walls, even though such behaviour was officially forbidden. On the surface, the formulaic, official records give a misleading impression that Edinburgh Council and York Corporation were trying to forcefully control the inhabitants by limiting their dirty, unthoughtful and chaotic waste disposal arrangements and techniques in a one-way manner, but in reality both cities' governing bodies encountered a great deal of bottom-up resistance and inhabitants in both cities made significant efforts to shape waste disposal themselves. Even flouting by-laws and dumping rubbish illegally was bottom-up action, and such behaviour forced local governors, eventually, to sanction requests in the form of petitions to modify and improve dumping grounds in Edinburgh and to make informal waste disposal locations official, by building walls around what were already functioning as established waste disposal locations, in York. There does seem to have been significantly more bottom-up resistance and more negotiation and compromise between York Corporation and its inhabitants than between Edinburgh Council and the people of Edinburgh.⁴⁸⁴ Perhaps in the absence of acute population density increase, there was less pressure and more room in York than in Edinburgh for such compromises and negotiations between the inhabitants and their governors because the waste disposal problems were relatively minor and did not demand more immediate, top-down, non-negotiable, enforced legislation.

The continuity in York's environmental regulation, in stark contrast to Edinburgh's acute discontinuity in that area of urban government, undoubtedly resulted from York's stagnant, perhaps even declining, demography, which meant that the corporation was never

⁴⁸⁴ See pp. 165-166 for discussion of York Corporation's adoption of informal waste disposal locations which were already in use.

forced to adapt this area of city government immediately and urgently to meet the increasing needs of a growing population and its augmented waste. The fact that bylaws and reminders of previous bylaws were repeated several times throughout the period in both Edinburgh and York, does not infer that the system was failing. In terms of the lengthy period of fourteen decades, it is an achievement that such bylaws only needed to be promulgated every few years, sometimes only once a decade. The inhabitants of sixteenth- and seventeenth-century Edinburgh and York were far from indifferent to the need to regulate their environment and to keep their streets clean and they respected their respective cityscapes immensely. Inhabitants living in York and in Edinburgh, respectively, in 1700, may well have had fewer responsibilities in this area of urban life than their counterparts did in 1560. But both they and the generations of inhabitants who lived between those years expressed a strong sense of concern over the cleanliness of the outdoor environment and disposed of their waste carefully and considerately, not least because most of their 'waste' was not waste at all; it was a potentially saleable asset.

Contemporaries living in smaller towns, too, across Scotland and northern England, benefited from sophisticated and useful, albeit not comprehensive, sanitation infrastructure and facilities. There was a high degree of symmetry between the efforts of inhabitants and governors to improve and maintain sanitary standards in the urban landscape of these settlements. Smaller towns generally attracted fewer visitors and were under far less pressure from national institutions to present a clean and orderly townscape. But the governors and inhabitants of smaller towns still invested huge energy and effort into disposing of their waste efficiently and they still had a vested interest in keeping streets and other open public spaces clean. Far from having had to coerce unwilling and 'dirty' urban populations to clean their micro-scale outdoor environment, inhabitants were already using their own initiative to pursue and/or maintain an acceptable standard of salubrity. Indeed, the majority of urban inhabitants' and local governors' efforts to punish and regulate the small minority of

inhabitants whose inconsiderate waste disposal activities offended their neighbours' senses and sullied the streets were remarkably compatible and overlapped considerably.

One might have assumed that the larger the town or city, the greater the waste disposal problems, and thereby the dirtier the streets, but what the previous chapters have made clear is that a large area combined with relatively few inhabitants actually created far less serious waste disposal problems and insanitary nuisances. However, while a low population density undoubtedly created less significant sanitation problems in terms of domestic waste, more open space tended to facilitate and encourage more inhabitants to engage in urban agriculture, which also created large amounts of waste in the form of manure, albeit not as much as an area boasting very dense housing. The walls around settlements such as Edinburgh, York and Carlisle failed to act as an artificial barrier to the spread of housing, and the growth of settlements. As walled towns and cities expanded throughout the seventeenth century, they did so through the growth of poorer suburbs which tended to lack the quality of infrastructure present within the walls, in the case of Carlisle and York, or by encouraging the development of higher, multi-story buildings within the walls, as was the case in Edinburgh. The size of a settlement in its own right did not impact on the sanitary standard of its streets. There was no demonstrable pattern which meant that the larger the settlement, the less sanitary were its streets, as might have been expected. As the case study of York has demonstrated amply, a city could cover a large geographical area, and be relatively clean and well regulated as long as a large geographical size was combined with a relatively low housing density, a competent and efficient, centralised local government and well-organised and effective processes and systems for managing the disposal of waste and insanitary nuisances in the urban landscape. Similarly, Edinburgh covered a relatively small geographical area, but that coupled with a relatively high housing density, inevitably contributed to insanitary conditions.

Edinburgh experienced rapid population increase while York's population remained comparatively stagnant. The populations of York, Carlisle, Ayr, Sheffield, Kendal, Berwick and Glasgow were relatively small and stable, which meant that their public hygiene was not exacerbated by the deposition of a rapidly expanding population's domestic waste, as occurred in contemporary London and Edinburgh.⁴⁸⁵ Demographic density impacted on urban governors' ability to maintain a sanitary environment more so than any other variable characteristic. Indeed, similarly, it was demography, first and foremost, which drove the expansion of urban facilities and public services in the early modern Low Countries. Manon van der Heijden attributes the 'long-term transitions from private to public' in this area of urban management and government between 1400 and 1800 to population growth and urbanisation.⁴⁸⁶ As has been discussed in previous chapters, York covered a larger area than Edinburgh, it housed far fewer inhabitants, and consequently its inhabitants had access to more open space and there was a relatively high engagement in urban agriculture. Before 1700, sanitation problems in York were on a far lesser scale than those in Edinburgh, where housing density increased over the course of the seventeenth century and the volume of domestic waste produced in the city expanded significantly. However, the problems associated with free-roaming livestock were actually worse in York because Edinburgh's more severe gradients coupled with the density of its housing precluded large-scale animal rearing within the city whereas York was flat, boasting much more open space, which facilitated and encouraged animal rearing within the city walls.

It is not surprising that the 'chamber pot in the window' myth has entered the current, popular, historical imagination in relation to the early modern period. After all, in many eighteenth- and nineteenth-century British towns and cities, mass urbanisation and increased

⁴⁸⁵ Jenner, "'cleanliness' and 'dirt'".

⁴⁸⁶ Van der Heijden, 'New Perspectives', pp. 271-272. Although he argues that there was significant change and expansion in this area of urban government, he concedes 'such alterations were always firmly rooted in traditional conceptions of how common interest should best be served'.

housing density combined to create significant problems in relation to the practicalities of disposing of the augmented domestic and human waste which was produced in a relatively small area. London and, to a lesser extent, Edinburgh underwent the demographic changes which reached most smaller, provincial towns well into the eighteenth century, in the seventeenth century. Consequently, Edinburgh and London experienced serious sanitation challenges a whole century before other towns and cities such as York, Ayr, Carlisle, Glasgow, Kendal, Stirling and Sheffield, whose populations remained relatively stable throughout the seventeenth century. As we have seen, Edinburgh Council responded to the augmented waste and worsening insanitary nuisances in the city in a proactive manner by centralising and expanding the scale of its street cleaning provision, by building a public privy, by removing slaughterhouses to the edge of the city and by delegating neighbourhood nuisance cases exclusively to the Dean of Guild Court. But even these improvements were insufficient to keep pace with the worsening conditions. There is much evidence to suggest that despite the actions of its council, Edinburgh's streets and closes became dirtier over the course of the seventeenth century and the offence of throwing the contents of chamber pots directly out of windows and doors into the streets below did become a more serious problem than had been the case in the sixteenth century before rapid population expansion. A report written in 1735 claimed that in 1687 'dung ... was ... lying on the streets [of Edinburgh] ... like mountains, and roads were cut through them to the closes or shops'.⁴⁸⁷ However, this sensationalistic account, which originates from the end of the period under discussion in a city which was experiencing acute augmentation of waste due to population increase, does not justify the application of the 'chamber pot in the window' stereotype to large numbers of other early modern towns and cities whose populations remained relatively stable and which did not experience serious sanitation challenges, at least before 1700.

⁴⁸⁷ Manuscript proposals referring to previous Taxation Acts of 1687, (1735), quoted in D. Laing, 'Proposals for Cleaning and Lighting the City of Edinburgh in the Year 1735: with Explanatory Remarks', *Proceedings of the Society of Antiquaries of Scotland*, vol. 3 (1859), p. 174.

While not as influential a factor as population density, a town's geographical location, topography and proximity to rivers had a significant impact on environmental regulation in the early modern period. All towns benefited from rural hinterlands complete with convenient markets of local farmers who were necessarily interested in purchasing urban dung to use as fertiliser in the cultivation of their crops, but a hinterland which was primarily arable, such as Edinburgh's, Berwick's and York's, provided a potentially larger market for the sale of urban dung than one which was primary pastoral, such as that of Kendal or Carlisle. Moreover, Scarborough, Ayr, Berwick, Whitehaven and Aberdeen were situated on the coast, which provided very convenient drainage into the natural receptacle of the sea. The proximity of one or more rivers was often the main reason for the original placement of a town; most of the towns which have featured in this thesis had access to at least one river. Edinburgh's inhabitants lacked access to a river whereas York's inhabitants had access to the River Ouse and the River Fosse. In practical terms, this made York's drainage and sanitation problems significantly less challenging than those of Edinburgh. Carlisle was situated strategically close to three rivers: the River Eden to the north; the River Caldew to the west; and the River Petteril to the east, into which the city's sewerage network drained.⁴⁸⁸ Berwick's inhabitants enjoyed convenient access to the River Tweed as well as to the sea, those living in Sheffield could access the River Don and those who inhabited Inverness enjoyed access to the River Ness. All of these rivers were used as useful receptacles for urban waste; Edinburgh's inhabitants, who lacked access to a river, swept a lot of their waste down into the Nor' loch, a lake to the north of the city.⁴⁸⁹

York's topography was reasonably flat and prone to flooding whereas Edinburgh featured extremely steep gradients, which in times of heavy rainfall, facilitated excellent natural drainage and manual sweeping of both liquid waste and rainwater. Sheffield was

⁴⁸⁸ Skelton, 'Beadles, Dughills and Noisome Excrements', p. 22.

⁴⁸⁹ Smith, 'Foul Burns of Edinburgh', pp. 25-36.

situated on a ridge, and benefited from the wind and very steep gradients down to the natural receptacle of the River Don for its drainage,⁴⁹⁰ whereas Whitehaven and Carlisle were relatively flat, thus making drainage more challenging. It is also important to remember that inhabitants who lived in a town or city featuring steep gradients had to invest significantly more time and effort into reaching rivers and wells for the purposes of washing and bearing water, which was an integral part of keeping the urban environment clean. This is why Sir William Brereton noticed, in 1635, that the inhabitants of Edinburgh ‘fetch not fresh water every day: but onely every other day: which makes their water much worse (espetically to drinke) which, when itt is att best, is bad enough’.⁴⁹¹ Once an urban settlement had become established, the advantages and disadvantages of a town or city’s geographical location, topography and proximity to rivers were immovable parameters which limited inhabitants’ ability to maintain a clean environment. As they endeavoured to improve and maintain the sanitary standard of their town and cityscapes, governors and inhabitants had to work around the natural characteristics and the situation of the settlement, which necessarily shaped the way in which waste was produced, disposed of and regulated.

In this period, most towns were incorporated, but some were not. Carlisle was an incorporated city governed by a corporation which consisted of a mayor, several senior officials, eleven aldermen and twenty-four capital citizens.⁴⁹² Berwick and Scarborough were also governed in this way, but Sheffield was unincorporated, governed by a town trust of twelve Church Burgesses. Edinburgh and York and other towns north and south of the border, respectively, were governed under nationally different administrative, legal and governmental structures which had evolved separately over centuries. Scottish burghs were not only answerable to the Scottish Parliament, but they were also under the jurisdiction of

⁴⁹⁰ Hey, *History of Sheffield*, p. 57.

⁴⁹¹ Brereton, ‘Journal’, p. 31.

⁴⁹² Carlisle’s mayor was elected annually, at Michaelmas, from twelve men; the residual eleven then served as aldermen. The senior officials were the chamberlain, the sword-bearer, two bailiffs, a coroner, a clerk, two sergeants and an attorney. CRO, Ca2/17: *The Dormont Book*; Denton, *Perambulation*, p. 264.

the Convention of Burghs whereas England lacked an exclusively urban, representative, national governmental body which held authority over its towns. In Scotland, moreover, there were administrative and economic differences between burghs of barony and royal burghs.⁴⁹³ Royal burghs had a monopoly on national and foreign trade, leaving burghs of barony merely as local market centres which were relatively limited in terms of potential growth. However, there were differences between burghs of barony too; whereas Hawick lacked sewers and paving until well into the eighteenth century, Old Aberdeen had a relatively sophisticated drainage system and some paving by the beginning of the seventeenth century.⁴⁹⁴ There were some cultural differences between Scottish and English towns, as we have seen in relation to activities such as clothes-washing, for example, but in terms of the practicalities of the daily processing of waste, attitudes towards outdoor sanitation and efforts to improve sanitary standards in the urban landscape, Scotland and northern England were remarkably similar, not only to each other but also in comparison to many other European towns, especially in Scandinavia and the Low Countries.⁴⁹⁵ In short, nationality was by no means a significant factor in shaping the management of waste in the urban landscape. Urban inhabitants were careful with waste and valued a clean environment in both northern England and Scotland.

In practical terms, a town's governmental structure had a limited impact on the efficacy of its management of waste and insanitary nuisances, which was shaped to a much larger extent by population density. The governmental structure of a town had a far greater impact on the manner and style in which the disposal of waste and insanitary nuisances were managed and regulated rather than the efficacy of that management and regulation. In Carlisle, for example, there were five administrative wards within the walls – Richardgate

⁴⁹³ All of the Scottish towns referred to in the thesis were royal burghs, except for Hawick and Old Aberdeen, which was a burgh of barony.

⁴⁹⁴ Scottish Borders Archive, TDS/1/2: Hawick Town Court Book, 1640-1681; Robson, *The Story of Hawick*, p. 63; Dennison, Ditchburn and Lynch, (eds.), *Aberdeen Before 1800*.

⁴⁹⁵ Jorgensen, 'Co-operative Sanitation', pp. 547, 561, 564, 566. Deceulaer, 'Implications of the Street', pp. 194-216; Van Bavel and Gelderblom, 'Origins of Cleanliness', pp. 41-69; Van der Heijden, 'New perspectives on public services', pp. 271-284; Schama, *Embarrassment of Riches*; Wheeler, 'Stench in Sixteenth-century Venice', pp. 25-38.

Within, Castlegate, Fishergate, Abbeygate and Botchergate Within – and three beyond them – Richardgate Without, Botchergate Without and Caldewgate Without and inhabitants were regulated in these discreet, administrative groups. York’s inhabitants were also divided into administrative wards and so were Edinburgh’s, but some towns such as Inverness, Scarborough, Kendal and Perth, were not divided into administrative wards and were managed as a whole, though they were divided into parishes without exception. Some urban inhabitants who lived in towns which were divided into administrative wards were also regulated and fined for creating insanitary nuisances and neglecting to perform certain tasks in relation to disposing of their waste within their respective wards, usually presented by a warden or constable who was only responsible for one ward. Edinburgh, however, was split into wards, but its inhabitants were not presented for building and insanitary nuisances at the city’s Dean of Guild Court in wards. Inhabitants of towns which were not divided into wards were also presented for nuisance, quite effectively, as inhabitants of the whole town, rather than as one ward. Such administrative systems did not make the management of waste and the regulation of insanitary nuisance any more or less effective; it was merely a different means or style of management.

Edinburgh was the seat of national government whereas York was not. Consequently, far more time and effort was ploughed into regulating Edinburgh’s environment than that of York. Even Scotland’s national governors interfered in the issue of Edinburgh’s street cleanliness because they were keen to present a clean and orderly capital city to the swathes of prestigious visitors who frequented its streets. The issue of York’s street cleanliness did not receive anywhere near as much attention from England’s national governors, but this could be partially explained by the fact that the city’s governors were not experiencing similarly severe sanitation problems as were their counterparts in Edinburgh. Carlisle was a walled city which had a castle and a cathedral, and it functioned as Cumberland’s market,

ecclesiastical, legal and military centre. Scarborough and Whitehaven functioned as ports, and Berwick functioned as both a garrison and as a port.

In seventeenth-century Scarborough, a minority of contemporaries disposed of their waste onto the sand and directly into the harbour in explicit contravention of the town bylaws. In May 1622, for example, Scarborough's Sheriff's Tourn presented Mathew Woolf for 'throwing rubble on to the sand to the corruption of the port'.⁴⁹⁶ In April 1623, moreover, the same court presented Elizabeth Rosdell, Thomas Hawkins, George Ruston, Christofer Duke and Christofer Thompson for 'casting moule [i.e. human waste] & ashes over Thomas Herd[s] staith upon the sand to the noyance of the harbour'.⁴⁹⁷ And, in October 1623, the court presented Robert Reynold for 'casting ballast in the harbour contrary to the order of the towne and noysome to the harbour' as well as Jeromy Thompson for 'casting his ballast in the harbour at the same time on the 27 October'.⁴⁹⁸ That it was against the town bylaws to dispose of waste in this way indicates that the town governors respected the harbour and thought it was indecent and or problematic to use it as a receptacle for waste. That only a minority of inhabitants contravened this bylaw, moreover, suggests that most of the town's population respected the bylaw, either because they, too, wanted to maintain the cleanliness of their harbour or because they didn't want to pay a fine. Fines ranged from 4d to 12d, depending on how many times one had committed the offence, which certainly acted as a deterrent, but it isn't unreasonable to assume that inhabitants also wanted to preserve the cleanliness of their harbour and beaches. Martin Melosi has discovered that similar regulations were common in the American colonies by the late seventeenth century. In 1634, for example, Boston officials prohibited residents from throwing fish or rubbish near to the common landing, which was possibly the first sanitary ordinance passed in America before the 1650s. And, in 1647, additional regulations were passed to prevent the pollution of

⁴⁹⁶ NYCRO, DC/SCB/II/1: Corporation Minute and Order Book, 1621-1649 (08/05/1622).

⁴⁹⁷ NYCRO, DC/SCB/II/1: Corporation Minute and Order Book, 1621-1649 (21/04/1623).

⁴⁹⁸ NYCRO, DC/SCB/II/1: Corporation Minute and Order Book, 1621-1649 (14/10/1623).

Boston Harbor.⁴⁹⁹ Disposing of waste into a harbour, which is sheltered from the sea, was problematic because the waste would have lingered in the harbour before eventually entering the sea, thus creating malodours. That Scarborough functioned as a harbour shaped its environmental regulation.

A town or city's function affected the number of visitors it attracted; attracting more visitors, hosting the circuit courts or hosting royalty generated significantly more motivation to present a clean urban landscape, especially in main thoroughfares and central, public open spaces such as marketplaces. Court Days were prestigious occasions for towns. Glaswegian councillors ordered the burgh's streets to be cleaned in 1656, for example, because 'the judges is to be heir at the Sircueit Court'⁵⁰⁰; this clean was in those judges' exclusive honour. In York, in May 1633, moreover, the corporation passed a bylaw stipulating that,

... it is ordred that the Constables in every parish doe give notice to every of the inhabitants within this said parish that not any of them doe suffer any of their kyne swine or mastive dogs to come within the streetes of this citty from Thursday the 23rd day of this instant May till Wednesday after ... during the time of his Maties abode in this citty upon paine of xl s for every offence contrary hereunto.⁵⁰¹

Clearly, this move to clear the streets of livestock was not for inhabitants' benefit, but in King Charles I's honour. However, it is still significant that a royal visit motivated the corporation to curtail what was a hugely insanitary nuisance. Civic pride motivated urban governors to present their towns in optimum condition for important occasions, but in this respect their concern was not for the inhabitants' collective health; it was for their towns' praiseworthiness through social elites' eyes. The more prestigious the function of a town, the higher was the motivation to present the streets in a clean condition. Therefore, the function of a town or city did have a significant impact on waste management and the regulation of insanitary nuisances.

⁴⁹⁹ Melosi, *The Sanitary City*, p. 21

⁵⁰⁰ *Glasgow Recs.*, vol. 2, p. 332, (19/04/1656).

⁵⁰¹ YCA, B35: Corporation House Book, 1625-1637 (13/05/1633).

While the topography, geographical location and proximity of a town to rivers were immovable characteristics, the style, design and materials of buildings and the infrastructure installed into the built environment could be altered to aid drainage and street cleaning, providing sufficient resources were available or could be raised. Edinburgh had significantly higher residential buildings than York, which made the disposal of domestic waste more challenging in the former than in the latter. Lots of very narrow and steep closes ran off Edinburgh's High Street, which limited the practicalities of street cleaning, forcing Edinburgh Council to employ men with wheel barrows to bring the waste to the close heads because it was impossible for a horse and cart to move down them. Some towns had sewers running down the centre of thoroughfares and some built them into each side of the street. While most towns had sewers, some, such as Hawick and Kendal, did not acquire them until well into the eighteenth century.⁵⁰² This failing can be attributed not only to Kendal's early modern governors, but also to their medieval predecessors. Some sewers were covered, and ran underneath buildings whereas others were totally open. Wells also had a significant impact on urban inhabitants' ability to maintain clean forefronts, as did paving. Even in towns where the main thoroughfares were paved, lanes and vennels were often merely bare earth, which became muddy and absorbed debris, detritus and waste liquids, making them very difficult to keep clean. The built infrastructure of a town shaped the manner in which liquid waste drained away and solid waste was removed and it also affected the efficacy of that waste removal: in some cases making it easier and some cases making it even more challenging.

Comparing the in-depth case studies of Edinburgh and York to several smaller urban settlements in lowland Scotland and northern England has highlighted some national patterns.

⁵⁰² Scottish Borders Archive, TDS/1/2: Hawick Town Court Book, 1640-1681; W. Robson, *The Story of Hawick: An Introduction to the History of the Town* (Hawick, 1937), p. 63; R. Ferguson, (ed.), *The Boke of Recorde of the Burgh of Kirkby Kendal* (Carlisle, 1892). There are no references to sewers in these towns' records.

It has also illuminated some important similarities and differences between the regulation and management of waste disposal and insanitary nuisances in towns and cities which had different characteristics. The use of a comparative framework permits deeper analysis and a greater understanding of how sanitation systems functioned under smaller and larger urban councils above and below the Anglo-Scottish border with markedly different characteristics and governmental structures, such as: size of settlement and demography; geographical location, topography and proximity to rivers; governmental structures and nationality; function; and building tradition and infrastructure. Each urban settlement had a unique combination of such characteristics, which collectively shaped the management and regulation of waste disposal and noxious trades. Some towns' environmental regulation was shaped more by one characteristic than by others, but by and large, population density was the most salient influencing factor in the scale, structure, composition and ultimately efficacy of most urban settlements' management of waste disposal and street cleaning and in the regulation of insanitary nuisances and noxious trades. It was demographic density which had by far the greatest capacity to shape and limit local governors' ability to maintain a clean urban landscape.

Regardless of the many variable differences between urban settlements, none of the urban governors were indifferent to the sanitary condition of outdoor public spaces. Rather, they understood that it was integral to the efficient government of a town or city, that it contributed to the 'commonweal' and that it was crucial to maintaining a good image in the eyes of prestigious visitors and wider society. When discussing early modern towns, one must be extremely careful to distinguish between those which were still functioning very much in their medieval forms, and which were largely untouched by mass urbanisation, increased housing density and serious sanitation challenges and those which were already embracing those challenges in the seventeenth century. Before 1700, London, and to a lesser extent Edinburgh, were the only British cities which can accurately be described as having

faced severe sanitation problems as a result of population expansion. But even in the context of such severe sanitation problems, inhabitants and governors in Edinburgh and London still valued cleanliness and their efforts to embrace the problems are testimony to their desire to live in an environment which did not cause intolerable offence to their senses.

Whatever they labelled this area of urban management, early modern contemporaries did care about what we now call public hygiene and they were far from indifferent to environmental regulation. At a time when understandings of the link between dirt and disease, notably plague, were still only implicit, of course, civic pride was a key motivating factor in improving outdoor cleanliness, but the desire to breathe sweet and clean air and to live in an environment conducive to one's wellbeing was also a motivating factor in an age before explicit conceptions of public health. In sixteenth- and seventeenth-century towns, breathing what was termed sweet and clean air was hugely important to contemporaries because they believed that it enhanced their health and wellbeing; whereas they believed that evil-smelling air, conversely, would adversely affect their health at best and potentially endanger their lives at worst. It is important to remain mindful that it was contemporaries' perceived need to breathe sweet and clean air in order to preserve their health, wellbeing, and sometimes even their lives, rather than aesthetic considerations, which fuelled their efforts to improve public hygiene first and foremost; and for this reason, sixteenth- and seventeenth-century urban dwellers might well have engaged with the issue of outdoor sanitation more so than their twenty-first-century descendants do today.

As a result of the improvements made in municipal street cleaning and waste disposal systems in sixteenth- and seventeenth-century towns and cities, not only in Scotland and northern England, but across Europe, and through the implementation of better and more rigorously enforced hygiene by-laws, many early modern towns and cities became cleaner, more pleasant olfactory environments in which to live and work. The settlements which did not become cleaner, due to population and housing density increase – of which Edinburgh

was one – developed better, more centralised systems for coping with waste and were certainly less dirty by 1700 than they might well have been in the context of dramatic population increase without having made such large-scale improvements to the systems. The stereotypical image of the majority of a town’s inhabitants pouring effluent out of their windows and of a general disinclination to improve street cleanliness and to dispose of waste efficiently is a gross misrepresentation, at least in relation to Scottish burghs and northern English towns, between 1560 and 1700. The people who inhabited urban neighbourhoods necessarily had a vested interest in upholding a tolerable standard of cleanliness, olfactory sensation and arguably olfactory safety too, in the urban landscape which framed their daily lives. Only when findings such as those presented above are communicated to scholars and the wider public, will the deeply entrenched misconception that early modern contemporaries were disinclined to pursue and uphold sanitary standards be corrected. This topic is in its infancy, and much about it is still unknown. This urgent and hugely important aspect of daily life is in need of much further research, both respective case studies and comparisons of different settlements, if this area of early modern history is to be more fully understood. Further studies of the use of urban dung as fertiliser in towns’ rural hinterlands would also inform this topic, as would studies of the regulation of insanitary nuisances in rural settlements. Hopefully, increasingly more historians will realise the value of researching what always has been, and always will be, an aspect of daily life for every human being living in a settlement, especially a densely populated settlement. Just as the built environment shaped inhabitants’ daily life experiences, so too did the built environment’s sanitary condition.

Appendices

*Appendix A: Instructions for Constructing Sir John Harrington's Water Closet Invention, 1596*⁵⁰³

In the Privie that annoyes you, first cause a Cesterne containing a barrell or upward, to be place either behind the seat, or in any place, either in the roome, or above it, from whence the water by a small pype of leade of an inch be convayed under the seate in the hinder part therof (but quite out of sight) to which pype you must have a Cocke or a washer to yeeld water with some pretie strength, when you would let it in. Next make a vessell of an ovall forme, as broad at the bottome as at the top, ii foote deep, one foote broad, xvi inches long, place this verie close to your seate, like the pot of a close stoole, let the ovall incline to the right hand. This vessell may be brick, stone, or leade, but whatsoever it is, it should have a Current of 3. inches, to the backe part of it, (where a sluice of brasse must stand) the bottome and sides all smooth: and drest with pitch, rosin, and waxe, which will keepe it from taynting with the urine. In the lowest part of this vessell (which will be on the right hand), you must fasten the sluice or washer of brasse with soder or Ciment, the Concavitie or hollow thereof, must be ii. Inches and 1/2. To the washers stopple, must be a stemme of yron as bigge as a curten rod, strong and even, and perpendicular; with a strong skrew at the top of it, to which you must have a hollow key with a woorme fit to that skrew. This skrew must, when the sluice is downe, appeare through the planke not above a strawsbreadth & on the right hand, and being duly placed, it will stand three or foure inches wyde of the midst of the backe of your seate. Item, that Children & busie folke, disorder it not, or open the sluice, with putting in their hands, without a key, you should have a little button, or scallop shell, to bind it downe with a vice pinne, so as without the key it will not be opened. These things thus place: all about your vessell and els where, must be passing close plastered with good lime and haire, that no ayre come up from the vault, but onely at your sluice, which stands close stopt, and ever it must be left, after it is voyded, halfe a foote deepe in cleane water. If water be plentie, the oftener it is used and opened, the sweeter; but if it be scant, once a day is inough, for a need, though twentie persons should use it. If the water will not run to your Cesterne, you may with a force of twentie shillings, and a pype of eighteen pence the yard, force it from the lowest part of your house to the highest. But now on the other side behold the Anatomie.

⁵⁰³ E. Donno, (ed.), *Sir John Harrington's A New Discourse of a Stale Subject, called the Metamorphosis of Ajax* (London, 1962), pp. 192-193.

Appendix B: Similar Aberdonian Statutes, 1654 and 1696

09/08/1654

...the saids provest, baillies, and counsell, haue inactit, statut and ordanit, that all the inhabitants of this toune and nearest parts adjacent, both frie and unfrie within thair autorite, doe, before Monday nixt, at ten houres, caus remove the haill swyne, old and young, from this toune, ane fourth part of ane myll from the samen, with certificatioun that all swyne that salbe fund heirefter wpon the streets or without dores sallbe confiscate, the ane half for wse of the poore, and the other half for the wse of any that sall apprehend and delait the samen, and any that killis or tackis any of the said swyne efter the said time, salbe frie of any hazard therfor, and that by attour furder punishement to be inflictit wpon the keepers of the said swyne, at the counsellis pleasure, and ordains thir presentis to be publictlye proclamit at the mercat croce, and through the haill streets of the toune, that non pretend ignorance.⁵⁰⁴

30/09/1696

...the councell have enacted, statuted, and ordained, and by thir presents they enact, statute, and ordaine all the inhabitants of this burghe, and nearest parts adjacent therto, that they, before tuo acloak in the afternoon nixt day, being the first of October, cause and remove the haill swine, old and young, from this toun, ane quarter of ane myll from the same, with certification that all swine that shall be found heirafter upon the streets, or without doors, shall be confiscate, the one halfe for the use of the poore, and the other halfe for the use of any that shall apprehend the same, or delate them; and any that kills or tacks any of the said swine after the said time shall be free of any hazard therefore, and that by band attour further punishment to be inflicted upon the keepers of the said swine, at the councell's pleasure; and ordeanes thir presents to be publickly proclaimed at the mercat crosse, and through the haill streets of the toun, that none pretend ignorance.⁵⁰⁵

⁵⁰⁴ *Abdn. Counc.*, vol. 4, p. 143, (09/08/1654).

⁵⁰⁵ *Ibid.*, pp. 319-320, (30/09/1696).

Appendix C: Insanitary Nuisance Fines, City of York Courts, 1559-1687

Court:	Wardmote		Searchers of Occupations		Sessions of the Peace		Sheriff's Tourn		Sessions of the Peace and Wardmote [mixed]		Sessions of the Peace, Wardmote and Exchequer [mixed]		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
-													-
1559-1560	10	100	-	-	-	-	-	-	-	-	-	-	10
1565-1566	1	100	-	-	-	-	-	-	-	-	-	-	1
1584-1585	24	77	7	23	-	-	-	-	-	-	-	-	31
1585-1586	8	67	4	33	-	-	-	-	-	-	-	-	12
1588-1589	1	20	4	80	-	-	-	-	-	-	-	-	5
1593-1594	8	57	-	-	-	-	6	43	-	-	-	-	14
1594-1595	10	100	-	-	-	-	-	-	-	-	-	-	10
1596-1597	4	80	-	-	1	20	-	-	-	-	-	-	5
1607-1608	-	-	19	100	-	-	-	-	-	-	-	-	19
1608-1609	10	67	5	33	-	-	-	-	-	-	-	-	15
1610-1611	1	50	1	50	-	-	-	-	-	-	-	-	2
1613-1614	3	27	-	-	-	-	8	73	-	-	-	-	11
1614-1615	20	77	-	-	1	4	5	19	-	-	-	-	26
1615-1616	29	73	-	-	4	10	7	18	-	-	-	-	40
1616-1617	14	50	-	-	4	14	10	36	-	-	-	-	28
1617-1618	23	96	-	-	-	-	1	4	-	-	-	-	24
1618-1619	37	69	-	-	8	15	9	17	-	-	-	-	54
1619-1620	10	83	-	-	2	17	-	-	-	-	-	-	12
1620-1621	16	62	4	15	-	-	6	23	-	-	-	-	26
1621-1622	4	80	-	-	1	20	-	-	-	-	-	-	5
1623-1624	9	100	-	-	-	-	-	-	-	-	-	-	9
1624-1625	23	100	-	-	-	-	-	-	-	-	-	-	23
1625-1626	16	53	-	-	-	-	14	47	-	-	-	-	30
1627-1628	4	100	-	-	-	-	-	-	-	-	-	-	4
1629-1630	-	-	-	-	1	100	-	-	-	-	-	-	1
1630-1631	11	100	-	-	-	-	-	-	-	-	-	-	11
1631-1632	13	100	-	-	-	-	-	-	-	-	-	-	13
1632-1633	20	100	-	-	-	-	-	-	-	-	-	-	20
1633-1634	10	100	-	-	-	-	-	-	-	-	-	-	10
1634-1635	20	95	-	-	1	5	-	-	-	-	-	-	21
1635-1636	1	100	-	-	-	-	-	-	-	-	-	-	1
1636-1637	18	100	-	-	-	-	-	-	-	-	-	-	18
1637-1638	13	100	-	-	-	-	-	-	-	-	-	-	13
1638-1639	10	100	-	-	-	-	-	-	-	-	-	-	10
1639-1640	34	64	-	-	19	36	-	-	-	-	-	-	53
1642-1643	27	96	-	-	1	4	-	-	-	-	-	-	28
1643-1644	18	100	-	-	-	-	-	-	-	-	-	-	18
1645-1646	56	70	-	-	24	30	-	-	-	-	-	-	80
1646-1647	13	100	-	-	-	-	-	-	-	-	-	-	13
1647-1648	-	-	-	-	-	-	-	-	-	-	13	100	13
1648-1649	-	-	-	-	1	100	-	-	-	-	-	-	1
1649-1650	-	-	-	-	-	-	-	-	-	-	21	100	21
1650-1651	-	-	-	-	-	-	-	-	-	-	4	100	4
1651-1652	-	-	-	-	-	-	-	-	-	-	5	100	5

1653-1654	-	-	-	-	-	-	-	-	4	100	-	-	4
1655-1656	-	-	-	-	-	-	-	-	24	100	-	-	24
1656-1657	-	-	-	-	-	-	-	-	13	100	-	-	13
1661-1662	-	-	-	-	-	-	-	-	3	100	-	-	3
1664-1665	-	-	-	-	-	-	-	-	53	100	-	-	53
1665-1666	-	-	-	-	-	-	-	-	43	100	-	-	43
1666-1667	-	-	-	-	-	-	-	-	-	-	25	100	25
1668-1669	-	-	-	-	-	-	-	-	-	-	23	100	23
1671-1672	-	-	-	-	-	-	-	-	-	-	8	100	8
1672-1673	-	-	-	-	-	-	-	-	-	-	22	100	22
1679-1680	-	-	-	-	-	-	-	-	-	-	22	100	22
1680-1681	-	-	-	-	-	-	-	-	23	100	-	-	23
1682-1683	-	-	-	-	-	-	-	-	28	100	-	-	28
1683-1684	-	-	-	-	-	-	-	-	52	100	-	-	52
1684-1685	-	-	-	-	-	-	-	-	31	100	-	-	31
1686-1687	-	-	-	-	-	-	-	-	8	100	-	-	8
Totals:	549	48	44	4	68	6	66	6	282	25	143	12	1,152

Bibliography

Manuscript Primary

Berwick-on-Tweed Archives, Berwick

C1/1:	Bailiffs' Court Book, 1568-1573, with minutes of council, 1573-1601
C1/2:	Bailiffs' Court Book, 1601-1603
C1/3:	Bailiffs' Court Book, 1599-1600
C2/1:	Court book for pleas of lands, 1605-1638
C2/2:	Court book for pleas of lands, 1639-1679
H2/1-26:	Annual account books, 1603-1700
B1/1-14:	Guild Minute Books, 1513-1716
B2/1-2:	Draft Guild Minute Books, 1505-1615
B6/1:	Book of enrolments [inc. land transfers etc], 1570-1636
B6/2:	Book of enrolments, 1640-1677
B6/3:	Book of enrolments, 1677-1729
B6/8:	Misc enrolments, 1532-1834
B6/8:	Misc enrolments, 1575-1634
B6/9:	Misc enrolments, 1648-1652
B6/10:	Enrolment book of rules, 1560-1577
B9/1:	Letter Books, 1646-1681 and 1697-1765
B10/1:	Misc Letters and papers, 1635, 1659, 1687, 1661
BRO 195:	A Book of the Constitution of Barwick upon Tweede and some orders of Guild, copied out by Samuel Wilson, 1683/84

Borthwick Institute, York University

PR/YHTG/15:	York Holy Trinity Goodramgate Constables' Accounts, 1636-1735
PR/Y/MS/5:	St Michael Churchwarden's Account Book, 1626-1710
PR/Y/MB/34:	St Michael Le Belfrey Churchwarden's Account Book, 1636-1729

Carlisle Record Office, Carlisle Castle, Carlisle

D/MH/10/7/1:	A Note of Householdors, December 1597. Camberlains' Accounts, 1597-98. Necessary Precautions against the Plague, November 1597.
Ca4/139:	Audit of Chamberlains' Accounts, 1597-1682.
Ca2/205:	Bellman's Petition to Court Leet, late eighteenth-century.
Ca2/1:	Carlisle Corporation Order Book, 1639-1654.
Ca2/13:	Certain Rough Minutes and Orders.
Ca4/1-3:	Chamberlains' Accounts, 1602-1694.
Ca4/140:	Corporation Orders and By-Laws, 1658.
Ca3/2/1-26:	Court Leet Rolls, 1597-1698.
Ca/2/17:	<i>The Dormont Book</i> (1561).
Ca2/383:	Grant of the Office of Bellman to John Graeme, September 1634.
D/Lons/W:	Whitehaven street survey book, 1645-1743
D/Lons/W8/17/1-2:	Court Baron Minutes, Manor of St. Bees, 1666-1701
D/Lons/W8/17/12:	Loose papers of Courts Baron, 1686-1942
D/Lons/W8/17/16:	Jury verdicts and court papers, 1636-1638

D/Lons/W8/17/27: Accounts of fines, double fines and triple fines, arranged by street and tenant with details of admittances and aurrenders, 1693-1776

Carlisle City Probate Wills and Inventories, 1596, 1601-11, 1661-71.

Roehampton University Hearth Tax Project, *Cumberland Hearth Monies, 1673-1674*, unpubl. transcription of TNA, E179/90/76.

Shrewsbury, H., (ed.), *Carlisle St. Cuthbert Burials, 1666-1812*, unpubl. transcription, CRO, 1988.

Shrewsbury, H., (ed.), *St. Mary's Burials, 1670-1812*, unpubl. transcription, CRO, 1993.

Durham County Record Office, Durham

Da/DM/5/2: *Darlington Borough Book, 1612-1633 (Liber Spectans Burgo de Darlington)*

Durham University Heritage Collection, Durham

MS 8/I: Subsidiary Manorial Court Records, Stockton Division, Box 7, Bundle 1, Item 5.

Edinburgh City Archives, City Chambers, Edinburgh

SL144/1-9: Dean of Guild Court Minute Books, 1529-1702

SL144/4/1-4: Dean of Guild Accounts, 1552-1720

SL144/6/1: Expenditure of Guild Money, 1554-1578 and 1601-1605

SL1/1/3-36: Town Council Minutes, 1558-1701

SL30/1/1-7: Records of the Convention of Royal Burghs, 1552-1705

SL30/8/14: Acts and Statutes concerning Burghs of Scotland, 1552-1700

SL30/8/15: Principal Acts and Constitutions of the Conventions of Burrowis, 1552-1619

SL30/210/227: Commissions and Petitions to the Convention of Burghs, 1675-1714

Uncatalogued (in silver safe): Town Treasurer's Accounts, 1581-1690

Baillies' Accounts, extent and unlaws, 1584-1689

Highland Council Archives, Inverness

BI/1/1/1-3: Burgh Court Minute Books, 1556-1621

BI/1/1/3a-7: Town Council Minutes, 1619-1702

BI/1/7/1-2: Burgh Court Minute Books, 1621-1683

Uncatalogued: Miscellaneous Accounts, 1496

Misc Burgh Papers, 1408

Council Papers, 1682

Council Letters, 1665

Deeds and Leases, 1685

Acts and Minutes, 1631

Huntington Library, San Marino, California, USA

HM MS 70160: Diary of Sir John Archer, 1663.

Kendal Record Office, Kendal

WSMB/K/1/boxes 26-27: Chamberlains' Account Books, 1582-1704
WSMB/K/1/box 29: Sundry Court Papers, 16th & 17thCs

National Archives of Scotland, Edinburgh

RH9/14/66: Edinburgh and Leith Papers, 1329-1851 – Petition by constables to be exempted from cess and street cleaning money during office, with remit, 08/08/1690
GD18/1914: Papers of Clerk family of Penicuik, Midlothian, 1373-1966 – Receipts to the Lady Elvingstone [Elphinstone] for annuity tax and proportion for street cleaning, 1687-1689
RH9/14/68: Edinburgh and Leith Papers, 1329-1851 – Decree of Dean of Guild Court in favour of Robert Innes against John Paterson, for obstructing vennel with middings, 15/06/1692

North Yorkshire County Record Office, Northallerton

DC/SCB [one box]: Corporation and committee minutes, 1621-1945
Court papers, court leet and sherriff's tourn, 17thC
Corporation letters and papers, 17thC
Draft council minutes and related papers, 17thC
DC/SCB/II/7: Ordinances and byelaws, 17thC
DC/SCB/VI/1: Court leet books, 1610-1702
DC/SCB/II/1/1-4: Corporation minute and order books, 1621-1952
DC/SCB/IV/1/1, 2, 4: Town accounts, 1606-45, Chamberlains' accounts, 1629-84, rentals [inc. dunghill rentals], 1629-1835, the conduit assessment, 1651, account for work on middle conduit, 1659, account for work on the flesh shambles, 1625
DC/SCB/IV/2/1: Bailiffs' accounts of disbursements, 1630-1671
DC/SCB/IV/3/10: Taxation assessments and papers, 1608-1827 [including conduit tax]
DC/SCB/VI/2: Quarter sessions papers, indictment and minute books, 1696-

Northumberland Archives, Woodhorn

NRO/PHU/C2: Hexham Dunghill Deed, 1649
ZMD 50/1-21: Deeds to houses in Berwick-on-Tweed, 1615-1799
B21/II/6-8: Deeds re Berwick, 1615, 1623
ZMD/170/1-97: Deeds re Berwick, 16thC
NRO/1674: Deeds re Berwick, 1616-1922
NRO/ZAN/M23/3: Deed re Berwick, 1588
NRO/2222/140: Lease re Berwick, 1667

Perth and Kinross Archives, A K Bell Library, Perth

B59/24/14/5: Eighteenth-century transcript of a fifteenth-century indenture between the Aldermen, Council and Community of the Burgh of Burgh and Robert Kinglassie, their Neighbour, whereby he

- is bound to maintain Certain Causeways in return for receiving a feu of the "Gild Herbar", 8th May, 1459.
- B59/24/14/5: Ordinance of The Magistrates Anent keeping the Streets clean, 6th December, 1720.
- B59/26/1/18/4: One folio of Dean of Guild Court Proceedings, 1671.
- B59/19/1-26: Treasurer's Accounts, 1670-1700.
- B59/16/1-11: Acts of Town Council, 1601-1700.
- B59/24/1/1: Index to Acts of Town Council, 1602-1693.
- B59/12/4-19: Burgh Court Minute Books, 1560-1706.
- B59/13/1-14: Registers of Burgh Court Acts and Decrees, 1577-1711.

Scottish Borders Archive, Heritage Hub, Hawick

- D/10/1-7: Writs of lands in Hawick, 1610-1688
- TDS/1/2: Hawick Town Court Book, 1640-1681

Sheffield City Archives, Sheffield

- Arundel Castle Manuscripts/S/116: A Book of Pains and Amerciaments, 1578
- Arundel Castle Manuscripts/S/45: Estreat Roll, 1581
- Tibbitts Collection/389: Constables' Accounts, 1685-1711
- Church Burgesses/159: Church Burgesses' Account Book, 1557-1574
- Church Burgesses/161: Church Burgesses' Account Book, 1574-1727
- Jackson Collection/905: Sheffield Constables' Accounts, 1615-1677
- WWM Bright/31-32: Court Leet Rolls, 1631-1632, 1633
- Misc Docs 457-500: Burgery rentals, 1627-1756
- Misc Docs 456: A survey of the lands belonging to the Church burgesses and the commaltie of the towne and parish of Sheffield taken 1616 and the rents as they were then and the improved rent now this present yeare 1672.
- Bagshawe Collection 3365: Page from a parish constable's accounts, 1640
- Misc Docs 170: Manor Court of Sheffield, papers 16th and 17th Cs
- SC 674-700: Court Leet Roll, 1493
- MD 1226/2: Court Leet Roll, 1440-41
- MD 1037-1050: Deeds relating to Sheffield market place, 1610-1722

Stirling Archives, Stirling

- B66/16/1-21: Burgh Court Minute Books, 1598-1701
- B66/20/1-6: Council Record, 1597-1702
- B66/21/1-3: Council Minutes, 1675-1706
- B66/15: Court and Council Records, 1519-1582
- PD6/1/3-4: Guildry Court Minute Book, 1592-1733 [not dealing with environ. reg even as late as 1733 as its Edinburgh counterpart was doing. It was still dealing exclusively with mercantile issues]
- B66/23: Burgh Treasurer's Accounts, 1634-1720

The National Archives, Kew, Surrey

- E317/Cumb/3: Carlisle: Survey of certain decayed tenements, September 1650.
- C6: Court of Chancery: Six Clerks Office: Pleadings before 1714, Collins.
- C2: Court of Chancery: Six Clerks Office: Pleadings, Series 1, Elizabeth I to Charles I.
- E179/90/76: Cumberland Hearth Monies for his Majesties Duty of Hearth Due for the two and a halfe yeares from Michaelmas 1673 until Lady Day 1674.
- E101/545/16: Scottish Marches: Accounts of repairs at Carlisle, 1577-1602.
- E134/3Jas/2/Mich33: Timothy Haddock v. Sir Francis Ratcliffe, Bart. (now Earl of Derwentwater), Thos. Addison, Henry Inman.: City and corporation of Carlisle, and the tolls and dues upon cattle, &c., &c., brought into or exported from the city, 1688.

The National Library of Scotland, Edinburgh

- Wod.Fol, xxv, part 1: Letters to and papers of Robert Douglas, mostly covering the period 1643-1651.

Whitehaven Archives, Whitehaven

- DH/189: Misc Title Deeds, Whitehaven, 1665-1727
- YDX/324/3/1-2: Papers and copy of an act for appointing scavengers and to regulate the streets, 1749-50
- DH/395/1: Engraving south-east prospect of Whitehaven, 1642
- DX1211/1: Old Town Title Deeds, 1689-1840
- D/BT/10/99-147: Misc Deeds, 1687-1931

York City Archives, York

- CB/5-28: York Chamberlains' account books, 1559-1697 (inc. fines from sessions of the peace and wardmote courts)
- C22/1-11: Chamberlains' rolls of accounts, 1658-1672
- C23/1-7: Chamberlains' rolls of accounts, 1672-1680
- C24/1-5: Chamberlains' rolls of accounts, 1680-1685
- C25/1-6: Chamberlains' rolls of accounts, 1685-1692
- C26/1-4: Chamberlains' rolls of accounts, 1692-1696
- C27/1-5: Chamberlains' rolls of accounts, 1696-1701
- C66-79: Receivers' rolls, 1627-1695 [collected rents and fines for chamberlain]
- B23-40: Corporation House or Minute Books, 1560-1706
- B/H-M: Draft Corporation House Books, 1659-1692
- E126-127: Presentments, fines and americiaments at Sheriffs Tourn, 1585-1676

Printed Primary

- Anon., *Shewing how 3 Men of Norwich Visited the North* (1634), (Newcastle: Reprints of Rare Tracts and Imprints of Antient Manuscripts &c, 1849).
- Belhaven, J., *An Advice to the Farmers in East Lothian how to Labour and Improve their Ground or The Countrey-man's Rudiments* (1699).
- Brereton, W., Sir, *Journal of Sir William Brereton* (1635), in Hodgson, J. C., (ed.), *North Country Diaries*, 2nd Series (Surtees Society, 124, 1914), pp. 1-50.
- Brown, P. H., (ed.), *Early Travellers in Scotland* (Edinburgh, 1978).
- Chambers, W., (ed.), *Charters and Documents relating to the Burgh of Peebles, with Extracts from the Records of the Burgh, AD 1165-1710* (Edinburgh: Scottish Burgh Record Society, 1872).
- Chandler, J., (ed.), *Travels through Stuart Britain: The Adventures of John Taylor, Water Poet* (Stroud, 1999).
- Defoe, D., *A Tour through the whole Island of Great Britain* (1724), ed. Rogers, P., (Harmondsworth, 1983).
- Denton, T., *A Perambulation of Cumberland* (1687-88), ed. Winchester, A., and Wane, M., SS, vol. 207, (2003).
- Extracts from the Council Register of the Burgh of Aberdeen, 1625-1747*, 2 vols., ed. J. Stuart (Edinburgh: Scottish Burgh Record Society, 1871-1872)
- Extracts from the Council Register of the Burgh of Aberdeen 1398-1625*, 2 vols., ed. J. Stuart (Aberdeen: Spalding Club, 1844-1848)
- Fiennes, C., *The Journeys of Celia Fiennes*, (1694), ed. Morris, C. (London, 1947).
- Fleming, D., *Description of the County of Cumberland* (1671), ed. Ferguson, R., TCWAAS, tract series, no. 3 (1889).
- Harrington, J., Sir, *A New Discourse of a Stale Subject, called the Metamorphosis of Ajax: Written by Misacmos, to his Friend and Cosin Philostilpnos* (London, 1596), ed. E. Story Donno (London, 1962).
- Laing, D., 'Proposals for Cleaning and Lighting the City of Edinburgh in the Year 1735: with Explanatory Remarks', *Proceedings of the Society of Antiquaries of Scotland*, vol. 3 (1859), pp. 171-180.
- Leader, J., (ed.), *Records of the Burgery of Sheffield, commonly called the Town Trust* (1897).
- Marwick, J. D., (ed.), *Extracts from the Records of the Burgh of Glasgow*, 6 vols (Edinburgh: Scottish Burgh Record Society, 1876-1916).
- Metcalfe, W. M., (ed.), *Charters and Documents relating to the Burgh of Paisley, 1163-1665, and Extracts from the Records of the Town Council, 1594-1620* (Edinburgh: Scottish Burgh Record Society, 1902).
- Power, M., (ed.), 'Liverpool Town Books, 1649-1671', *The Record Society of Lancashire and Cheshire*, vol. 136 (1998).
- Renwick, R., (ed.), *Extracts from the Records of the Royal Burgh of Lanark: with Charters and Documents relating to the Burgh, AD 1150-1722* (Edinburgh: Scottish Burgh Record Society, 1893).
- Robertson, G., *General View of the Agriculture of the County of Midlothian* (Edinburgh, 1793), pp. 48-49.
- Shearer, A., (ed.), *Extracts from the Burgh Records of Dunfermline in the Sixteenth and Seventeenth Centuries* (Dunfermline, 1951).
- Skeldie, A., *The Only sure Preservative against the Plague of Pestilence* (Edinburgh, 1645).
- Skene, A., *Memorialls for the government of the royal-burghs in Scotland with some overtures laid before the nobility and gentry of several*

- shyres in this kingdom* (Edinburgh, 1685).
- Skeyne, G., Dr., *Ane Breve Description of the Pest Quhair in the cavsis, signis and sum speciall preseruation and cure thairof ar contenit* (1568) in Skene, W., (ed.), *Tracts by Dr. Gilbert Skeyne, medicinar to his majesty* (Edinburgh: Bannatyne Club, 6.111, 1860).
- The Boke of Recorde of the Burgh of Kirkby Kendal*, ed. Ferguson, R., (Carlisle, 1892).
- Todd, H., *Account of the City of Carlisle*, (1689), ed. Ferguson, R., *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, tract series, no. 5 (1891).

Secondary Works

- Allen-Emerson, M., (ed.), *Sanitary Reform in Victorian Britain*, 6 vols. (London, 2012).
- Baker, J. H., *An Introduction to English Legal History*, 2nd ed. (London, 1979).
- Balfour-Paul, J. P., (ed.), *The Scots Peerage*, 9 vols. (Edinburgh, 1904-1914).
- Barnes, T. G., 'The Prerogative and Environmental Control of London Building in the Early Seventeenth Century: The Lost Opportunity', *California Law Review*, vol. 58 (1970), pp. 1332-1363.
- Barnwell, P. S., 'Workshops, industrial production and the landscape' in Barnwell, P. S., et al., (eds.), *The vernacular workshop from craft to industry, 1400-1900* (York, 2004), pp. 179-182.
- Beck, M. E., and Hill, M. E., 'Rubbish, Relatives, and Residence: the family use of middens', *Journal of Archaeological Method and Theory*, vol. 11, no. 3 (2004), pp. 297-333.
- Borsay, P., *The English Urban Renaissance* (Oxford, 1989).
- Borsay, P., 'Politeness and Elegance: The Cultural Re-Fashioning of Eighteenth-Century York' in Mark Hallet and Jane Rendall, (eds.), *Eighteenth-Century York: Culture, Space and Society* (York, 2003), pp. 1-12.
- Brimblecombe, P., 'Early Urban Climate and Atmosphere', in Hall, A. R., and Kenward, H. K., (eds.), *Environmental Archaeology in the Urban Context* (1982).
- Brimblecombe, P., *The Big Smoke: A History of Air Pollution in London since Medieval Times* (1987), esp. ch. 1.
- Brooks, C. W., *Pettyfoggers and Vipers of the Commonwealth: The Lower Branch of the Legal Profession in Early Modern England* (Cambridge, 1986).
- Brooks, C. W., *Lawyers, Litigation and English Society since 1450* (London, 1998).
- Brunt, L., 'Where there's muck, there's brass: the market for manure in the industrial revolution', *Economic History Review*, vol. 60, no. 2 (2007), pp. 333-378.
- Campbell-Irons, J., *Manual of the Law and Practice of the Dean of Guild Court: With Synopsis of the Law, relating to Building Restrictions, Servitudes, etc* (Edinburgh, 1895).
- Carter, S., 'A reassessment of the origins of the St Andrews 'garden soil'', *Tayside and Fife Archaeological Journal*, no. 7 (2001), pp. 87-92.
- Chew, H. M., and Kellaway, W., (eds.), *London Assize of Nuisance, 1301-1431: a calendar* (London: London Record Society, 1973).
- Clark, P., (ed.), *The Cambridge Urban History of Britain, volume II, 1540-1840* (Cambridge, 2000).
- Clarkson, L., 'The Organization of the English Leather Industry in the Late Sixteenth and Seventeenth Centuries', *Economic History Review*, new series, vol. 13, no. 2 (1960), pp. 245-256.

- Classen, C., et al., *Aroma: The Cultural History of Smell* (London, 1994).
- Cockayne, E., *Hubbub: Filth, Noise and Stench in England 1600-1770* (London, 2007).
- Coslton, J., *The Incorporated Trades of Edinburgh* (Edinburgh, 1891).
- Comrie, J. D., *History of Scottish Medicine to 1860* (London, 1927).
- Cooper, T. P., 'The Medieval Highways, Streets, Open Ditches, and Sanitary Conditions of the City of York', *Yorkshire Archaeological Journal*, vol. 22 (1912), pp. 270-286.
- Corbin, A., *The Foul and the Fragrant: Odour and the Social Imagination* (London, 1996).
- Craigie, W. A., *A Dictionary of the Older Scottish Tongue: from the Twelfth Century to the End of the Seventeenth* (London, 1937).
- Cross, C., 'Tudor York', in Nuttgens, P., (ed.), *The History of York: From Earliest Times to the Year 2000* (Pickering, 2001), pp. 141-176.
- Davidson, D., et al., 'The legacy of past urban waste disposal on local soils', *Journal of Archaeological Science*, vol. 33, no. 6 (2006), pp. 778-783.
- Deceulaer, H., 'Implications of the Street: Entitlements, duties and conflicts in neighbourhoods in Ghent (17th-18th centuries', in Van der Heijden, M., Elise van Nederveen, M., Griet, V. and Martin van der Burg, (eds.), *Serving the Urban Community. The Rise of Public Facilities in the Low Countries* (Amsterdam, 2009), pp. 194-216.
- Dennison, E. P., 'The Built Environment, 650-1300', in Palliser, D. M., (ed.), *The Cambridge Urban History of Britain*, vol. 1, 600-1540 (Cambridge, 2000).
- Dickens, A. G., 'Tudor York', in Tillott, P. M., (ed.), *A History of Yorkshire: The City of York*, VCH (London, 1961), pp. 117-159.
- Dingwall, H., 'The Importance of Social Factors in Determining the Composition of the Town Councils of Edinburgh 1550-1650', *The Scottish Historical Review*, vol. 65, no. 179 (1986), pp. 17-33.
- Dingwall, H., *Late Seventeenth-Century Edinburgh: A Demographic Study* (Aldershot, 1994).
- Dobson, M., *Contours of Death and Disease in Early Modern England* (Cambridge, 1997).
- Donaldson, G., *Scotland: James V-James VII* (Edinburgh, 1978).
- Dorey, M., 'Controlling Corruption: Regulating Meat Consumption as a Preventative to Plague in Seventeenth-Century London', *Urban History*, vol. 36, no. 1 (May, 2009).
- Douglas, M., *Purity and Danger: An analysis of concept of pollution and taboo* (Abingdon, 1966).
- Elias, N., *The Civilising Process*, 2nd ed. (Oxford, 2000).
- Emmison, F. G., *Elizabethan Life: Home, Work and Land* (Chelmsford, 1976), esp. pp. 281-300.
- Evans, D., 'A good riddance of bad rubbish? Scatalogical musings on rubbish disposal and the handling of "filth" in medieval and early post-medieval towns' in De Groote, K., Tys, D., and Pieters, M., (eds.), *Exchanging Medieval Material Culture: Studies on archaeology and history presented to Frans Verhaeghe* (Brussels, 2010), pp. 267-278.
- Ewan, E., 'Mons Meg and Merchant Meg: Women in Later Medieval Edinburgh', in Brotherstone, T., and Ditchburn, D., (eds.), *Freedom and Authority. Scotland c. 1050-c. 1650* (East Linton, 2000), pp 131-142.
- Flinn, M., et al., *Scottish Population History: from the seventeenth century to the 1930s* (Cambridge, 1977).
- Forester, G. C. F., 'York in the Seventeenth Century', in Tillot, P. M., (ed.), *A History of Yorkshire: The City of York*, VCH (London, 1961), pp. 160-206.

- Foyster, E., 'Sensory Experiences: Smells, Sounds and Touch in Early Modern Scotland' in Foyster, E., and Whatley, C., (eds.), *A History of Everyday Life in Scotland, 1600-1800* (Edinburgh, 2010), pp. 217-233.
- Galley, C., *The Demography of Early Modern Towns: York in the Sixteenth and Seventeenth Centuries* (Liverpool, 1998).
- Gaunt, J., QC., and Morgan, P., QC., *Gale on Easements*, 17th ed. (London, 2002).
- Getzler, J., *A History of Water Rights at Common Law* (Oxford, 2004).
- Giles, K., *An Archaeology of Social Identity: Guildhalls in York, c. 1350-1630* (Oxford, 2000).
- Glennie, P., and Whyte, I., 'Towns in an Agrarian Economy, 1540-1700', in Slack, P., (ed.), *The Cambridge Urban History of Britain, volume II, 1540-1840* (Cambridge, 2000), pp. 167-193.
- Gowers, E., 'The Anatomy of Rome from Capitol to Cloaca', *The Journal of Roman Studies*, vol. 85 (1995), pp. 23-32.
- Green, A., 'Heartless and Unhomely? Dwellings of the Poor in East Anglia and North-East England', in McEwan, J., and Sharpe, P., (eds.), *Accommodating Poverty: the Housing and Living Arrangements of the English Poor, c. 1600-1850* (London, 2010), pp. 69-101.
- Greenfield, S., *The Private Life of the Brain* (London, 2000).
- Greig, J., 'Garderobes, sewers, cesspits and latrines', *Current Archaeology*, vol. 85 (December, 1982), pp. 49-52.
- Hallett, M., and Rendall, J., (eds.), *Eighteenth-Century York: Culture, Space and Society* (York, 2003).
- Halliday, P., *Dismembering the Body Politic: Partisan Politics in England's Towns, 1650-1730* (Cambridge, 1998).
- Harrison, C., 'Manor Courts and the Governance of Tudor England', in Brooks, C. W., and Lobban, M., (eds.), *Communities and Courts in Britain, 1150-1900* (London, 1997), pp. 43-60.
- Harrison, J., 'Public Hygiene and Drainage in Stirling and other Early Modern Scottish Towns', *Review of Scottish Culture*, vol. 11, (1998-99), pp. 67-77.
- Hoskins, W., *Two thousand years in Exeter* (Exeter, 1960).
- Holdsworth, W. S., Sir, *A History of English Law*, vols. 3 and 7, 3rd ed. (London, 1923-1925).
- Houston, R., 'Fire and Filth: Edinburgh's Environment, 1660-1760', *The Book of the Old Edinburgh Club, New Series*, vol. 3 (1994), pp. 25-36.
- Ingram, M., 'Ridings, Rough Music and the Reform of Popular Culture', *Past and Present*, vol. 105 (1984), pp. 79-113.
- Jansen, M., 'Water Supply and Sewage Disposal at Mohenjo-Daro', *World Archaeology*, vol. 21, no. 2 (1989), pp. 177-191.
- Jenner, M., "'Another epocha'?" Hartlib, John Lanyon and the improvement of London in the 1650s' in M. Greengrass, et al., (eds.), *Samuel Hartlib and Universal Reformation* (Cambridge, 1994), pp. 343-356.
- Jenner, M., 'The Politics of London Air: John Evelyn's Fumifugium and the Restoration', *Historical Journal*, vol. 38, no. 3 (1995), pp. 535-551.
- Jenner, M., 'From conduit community to commercial network? Water in London, 1500-1725' in P. Griffiths and M. Jenner, (eds.), *Londinopolis: Essays in the Cultural and Social History of Early Modern London* (Manchester, 2000), pp. 250-272.
- Jenner, M., 'The Great Dog Massacre' in W. Naphy, and P. Roberts, (eds.), *Fear in Early Modern Society* (Manchester, 1997), pp. 44-61.
- Jenner, M., 'Civilization and Deodorization? Smell in Early Modern English Culture', in

- Burke, et al. (eds.), *Civil Histories. Essays presented to Sir Keith Thomas* (Oxford, 2000), pp. 127-144.
- Jenner, 'The Roasting of the Rump: Scatology and the Body Politic in Restoration England' *Past and Present*, vol. 177 (2002), pp. 253-272.
- Jenner, M., 'Overground, Underground: Pollution and Place in Urban History', *Journal of Urban Studies*, vol. 24, (1997), pp. 97-110.
- Jillings, K., 'Preventing Plague in Post-Reformation Aberdeen', *International Review of Scottish Studies*, vol. 30 (2005), pp. 108-134.
- Jones, B., 'Carlisle Brickmakers and Bricklayers, 1652-1752', *TCWAAS*, 2nd series, vol. 83 (1983), pp. 125-128.
- Jones, E. L., and Falkus, M. E., 'Urban Improvement and the English Economy in the Seventeenth and Eighteenth Centuries', *Research in Economic History*, vol. 4 (1979), pp. 193-233.
- Jones, R., 'Manure and the Medieval Social Order' in Allen, M. J., Sharples, N., and O'Connor, T., (eds.), *Land and People: Papers in Memory of John G. Evans*, Prehistoric Society Research Paper 2 (2009), pp. 215-225.
- Jones, R., 'Elemental Theory in Everyday Food Practice: Food Disposal in the Later Medieval English Countryside', (m/s).
- Jorgensen, D., 'Co-operative Sanitation: Managing Streets and Gutters in Late-Medieval England and Scandanavia', *Technology and Culture*, vol. 49, no. 3 (2008), pp. 547-567.
- Jutte, R., *A History of the Senses from Antiquity to Cyberspace* (Cambridge, 2005).
- Keene, D. J., 'Rubbish in Medieval Towns', in Hall, A. R., and Kenward, H. K., (eds.), *Environmental Archaeology in the Urban Context* (1982).
- Keene, D., *Survey of Medieval Winchester*, vol. 1 (Oxford, 1985), esp. pp. 63-65.
- King, W., 'How High is too High? Disposing of Dung in Seventeenth-Century Prescott', *The Sixteenth Century Journal*, vol. 23, no. 3, (1992), pp. 443-457.
- Laporte, D., *The History of Shit* (2002).
- Lemire, B., 'Consumerism in pre-industrial and early industrial England: the trade in second-hand clothes', *Journal of British Studies*, vol. 27 (1988), pp. 1-24.
- Loengard, J., 'The Assize of Nuisance: Origins of an Action at Common Law', *California Law Journal*, vol. 37, pt. 1 (1978), pp. 144-166.
- Lynch, M., 'Scotland Revisited: The Scottish Early Modern Burgh', *History Today*, vol. 35, no. 2 (1985), pp. 10-15.
- Lynch, M., (ed.), *The Early Modern Town in Scotland* (London, 1987).
- Lynch, M., *Edinburgh and the Reformation* (Aldershot, 1993).
- MacGibbon, D., and Ross, T., *The Castellated and Domestic Architecture of Scotland from the twelfth to the eighteenth century*, 5 vols. (Edinburgh, 1887-1892).
- MacQueen, H. L., and Windram, W. J., 'Laws and Courts in the Burghs', in Lynch, M., Spearman, R. M., and Stell, G., (eds.), *The Medieval Scottish Town* (1988), pp. 208-226.
- Magnusson, R., *Water Technology in the Middle Ages: Cities, Monasteries and Waterworks after the Roman Empire* (Baltimore, 2001), esp. pp. 155-162.
- McKenzie, J., 'Manuring Practices in Scotland: deep anthropogenic soils and the historical record' in Ballin Smith, B., Taylor, S., and Williams, G., (eds.), *West Over Sea: Studies in Scandinavian Sea-Borne Expansion and Settlement before 1300* (Leiden, 2007), pp. 401-417.
- McLaughlin, T., *Dirt: A Social History as seen through the uses and abuses of dirt* (Dorset Press, 1988).

- Melosi, M., *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore, 2000), esp. ch. 1.
- Melosi, M., *Garbage in the Cities: Refuse, Reform, and the Environment*, rev. ed. (Pittsburgh, 2005), esp. pp. 5-6.
- Miller, W., *The Anatomy of Disgust* (Cambridge, 1997).
- Mullett, C. F., 'Plague Policy in 16th and 17th Century Scotland', *Osiris*, vol. 9 (1950), pp. 435-456.
- Naphy, W. G., 'Plague Spreading and Magisterially Controlled Fear', in Naphy, W. G., and Roberts, P., (eds.), *Fear in Early Modern Society* (Manchester, 1997), pp. 28-43.
- Oram, R., "'It cannot be decernit quha are clean and quha are foulle.'" Responses to Epidemic Disease in Sixteenth- and Seventeenth-Century Scotland', *Renaissance and Reformation*, vol. 30, no. 4 (2006-07), pp. 13-39.
- Oram, R., 'Waste Management and Peri-Urban Agriculture in the Early Modern Scottish Burgh', *Agricultural History Review*, vol. 59, no. 1 (June, 2011), pp. 1-17.
- Palliser, D. M., *The Reformation in York, 1534-1553* (York, 1971).
- Palliser, D. M., 'Epidemics in Tudor York', *Northern History*, vol. 8 (1973), pp. 45-63.
- Palliser, D. M., 'A Crisis in English Towns? The Case of York, 1460-1640', *Northern History*, vol. 14 (1978), pp. 108-125.
- Palliser, D., *Tudor York* (Oxford, 1980).
- Palliser, D., 'Domesday York', *Borthwick Papers*, vol. 78 (1990), pp. 1-31.
- Palliser, D. M., 'Civic Mentality and the Environment in Tudor York', *Northern History Journal*, vol. 18, (1982), pp. 78-115.
- Palliser, D. M., 'The Origins of British Towns', in Palliser, D. M., (ed.), *The Cambridge Urban History of Britain*, vol. 1, 600-1540 (Cambridge, 2000).
- Palliser, D. M., Slater, T. and Dennison, E. P., 'The Topography of Towns, 600-1300', in Palliser, D. M., (ed.), *The Cambridge Urban History of Britain, volume I, 600-1540* (Cambridge, 2000).
- Palmer, M., 'The workshop: type of building or method of work?' in Barnwell, P. S., et. al, (eds.), *The vernacular workshop from craft to industry, 1400-1900* (York, 2004), pp. 1-16.
- Porter, D., *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times* (London, 1999).
- Reed, M., 'The Urban Landscape', in Clark, P., (ed.), *The Cambridge Urban History of Britain, volume II, 1540-1840* (Cambridge, 2000), pp. 289-313.
- Reid, D., *Paris Sewers and Sewermen: Realities and Representations* (Harvard University Press, 1993).
- Rexroth, F., *Deviance and Power in Late Medieval London* (2007), esp. ch. 6.
- Roberts, S., 'The Study of Dispute: Anthropological Perspectives', in Bossy, J., (ed.), *Disputes and Settlements: Law and Human Relations in the West* (Cambridge, 1983).
- Robinson, M., *The Concise Scots Dictionary* (Aberdeen, 1985).
- Robson, W., *The Story of Hawick: An Introduction to the History of the Town* (Hawick, 1937).
- Roger, R., 'The Evolution of Scottish Town Planning' in G. Gordon and Brian Dicks, (eds.), *Scottish Urban History* (Aberdeen, 1983), pp. 71-91.
- Sabine, E., 'Butchering in Mediaeval London', *Speculum*, vol. 8 (1933), pp. 335-53.
- Sabine, E., 'City Cleaning in Mediaeval London', *Speculum*, vol. 9 (1934).
- Sabine, E., 'Latrines and Cesspools of Mediaeval London', *Speculum*, vol. 12 (1937), pp. 19-43.
- Schama, S., *Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age* (London, 1991), esp. pp. 375-394.

- Scott-Warren, J., 'The Privy Politics of Sir John Harrington's *New Discourse of a Stale Subject, Called the Metamorphosis of Ajax*', *Studies in Philology*, vol. 93, no. 4 (Autumn, 1996), pp. 412-442.
- Sheils, W. J., 'Seventeenth-Century York', in Nuttgens, P., (ed.), *The History of York: From Earliest Times to the Year 2000* (Pickering, 2001), pp. 177-211.
- Shrewsbury, J., *A History of Bubonic Plague in the British Isles* (Cambridge, 1971).
- Skelton, L. J., 'Pursuing Improvement: Public Hygiene in Scottish Burghs, 1500-1700', *History Scotland Magazine*, vol. 9, no. 6 (Nov/Dec, 2009), pp. 22-27.
- Skelton, L. J., 'Urban Identity in Late Sixteenth-Century Berwick-On-Tweed', in Green, A. G., and Crosbie, B., (eds.), *Beyond Coal: Regional Identity in North-East England, 1500-1800* (Woodbridge, forthcoming in 2013).
- Slack, P., *The Impact of Plague in Early Modern England* (London, 1985).
- Slack, P., 'The response to plague in early modern England: public policies and their consequences', in Walter, J. and Schofield, R., (eds.), *Famine, Disease and the Social Order in early modern Society* (Cambridge, 1991), pp. 167-187.
- Slack, P., *From Reformation to Improvement: Public Welfare in Early Modern England* (Oxford, 1999).
- Smith, M., *Sensory History* (Oxford, 2007).
- Smith, P., 'The Foul Burns of Edinburgh: Public Health Attitudes and Environmental Change', *Scottish Geographical Journal*, vol. 91 (1975), pp. 25-37.
- Smith, V., *Clean: A History of Personal Hygiene and Purity* (Oxford, 2007).
- Smout, C., 'Coping with Plague in Sixteenth and Seventeenth-century Scotland', *Scotia*, vol. 2, pt. 1 (1978), pp. 19-33.
- Smout, T. C., 'The Improvers and the Scottish Environment: Soils, Bogs and Woods', in Smout, T. C., (ed.), *Exploring Environmental History: Selected Essays* (Edinburgh, 2009), pp. 135-151.
- Spearman, R. M., 'The Medieval Townscape of Perth', in Lynch, M., Spearman, R. M., and Stell, G., (eds.), *The Medieval Scottish Town* (1988), pp. 42-59.
- Spearman, R. M., 'Workshops, Materials and Debris – Evidence of Early Industries', in Lynch, M., Spearman, R. M., and Stell, G., (eds.), *The Medieval Scottish Town* (1988), pp. 134-147.
- Stewart, L., 'Poor Relief in Edinburgh and the Famine of 1621-1624', *International Review of Scottish Studies*, vol. 30 (2005), pp. 5-41.
- Stewart, L., *Urban Politics and the British Civil Wars: Edinburgh, 1617-1653* (Leiden, 2006).
- Strasser, S., *Waste and Want: A Social History of Trash* (New York, 2000).
- Te Brake, W. H., 'Air Pollution and Fuel Crises in Pre-Industrial London, 1250-1650', *Technology and Culture*, vol. 16 (1975), pp. 337-359.
- Thirsk, J., 'The Farming Regions of England' in Thirsk, J., (ed.), *The Agrarian History of England and Wales, volume IV, 1500-1640* (Cambridge, 1967), pp. 1-112.
- Thomas, J. H., *Town Government in the Sixteenth Century* (London, 1933), pp. 48-58.
- Thomas, K., *Religion and the Decline of Magic: Studies in Popular Beliefs in Sixteenth- and Seventeenth-Century England* (Harmondsworth, 1971).
- Thomas, K., *Man and the Natural World: Changing Attitudes in England 1500-1800* (London, 1983).
- Thomas, K., 'Cleanliness and godliness in early modern England', in Fletcher, A., and Roberts, P., (eds.), *Religion, Culture and Society in Early Modern Britain: essays in honour of Patrick Collinson* (Cambridge, 1994), pp. 56-83.
- Thorndike, L., 'Sanitation, Baths, and Street-Cleaning in the Middle Ages and Renaissance', *Speculum*, vol. 3 (1928), pp. 192-203.

- Toolis, R., and Sproat, D., 'The transformation of an early post-medieval town into a major modern city: excavation and survey of the Waverley Vaults, New Street, Edinburgh, Scotland', *Post Medieval Archaeology*, vol. 41, no. 1 (2007), pp. 155-179.
- Van Bavel, B., and Gelderblom, O., 'The Economic Origins of Cleanliness in the Dutch Golden Age', *Past and Present*, vol. 205, no. 1 (Nov., 2009), pp. 41-69.
- Van der Heijden, M., 'New perspectives on public services in early modern Europe', *Journal of Urban History*, vol. 36 (2010), pp. 271-284.
- Van der Heijden, M., Elise van Nederveen, M., Griet, V. and Martin van der Burg, (eds.), *Serving the urban community. The rise of public facilities in the Low Countries* (Amsterdam, 2009).
- Vigarello, G., *Concepts of Cleanliness: Changing Attitudes in France since the Middle Ages*, trans. Birrel, J., (Cambridge, 1988).
- Walker, D., *A Legal History of Scotland: The Sixteenth Century*, vol. 5 (Edinburgh, 1995).
- Walker, D., *A Legal History of Scotland: The Seventeenth Century*, vol. 4 (Edinburgh, 1996).
- Walsham, A., *Providence in Early Modern England* (Oxford, 2000).
- Webb, S., and Webb, B., *English Local Government from the Revolution to the Municipal Corporations Act: The Manor and the Borough*, pt. 1 (London, 1924).
- Wheeler, J., 'Stench in Sixteenth-century Venice' in Cowan, A., and Steward, J., (eds.), *The City and the Senses: Urban Culture Since 1500* (Aldershot, 2007), pp. 25-38.
- Wood, M., 'The Neighbourhood Book', *The Book of the Old Edinburgh Club*, vol. 23 (1940), pp. 82-100.
- Woodward, D., "'An Essay on Manures": changing attitudes to fertilization in England, 1500-1800', in Chartres, J., and Hey, D., (eds.), *English Rural Society, 1500-1800: Essays in Honour of Joan Thirsk* (Cambridge, 1990), pp. 251-278.
- Woolgar, C., *The Senses in Late Medieval England* (London, 2006).
- Wright, L., *Clean and Decent: The Fascinating History of the Bathroom and the Water Closet* (London, 1960).
- Wrightson, K., 'The "Decline of Neighbourliness" Revisited' in Jones, L. and Woolf, D., (eds.), *Local Identities in Late Medieval and Early Modern England* (2007), pp. 19-49.
- Wrigley, L., 'A Simple Model of London's Importance in Changing English Society and Economy, 1650-1750', *Past and Present*, vol. 37, no. 1 (1967), pp. 44-70.
- Wrigley, E. A., & Schofield, R., *The Population History of England* (Cambridge, Mass., 1981).
- Zupko, R. E., *Straws in the Wind: Medieval urban environmental law: the case of northern Italy* (Boulder, 1996).

Unpublished Theses and Reports

- Adams, M., 'Darlington Market Place: Archaeological Excavations', unpubl. archaeological report, Durham SMR, 4000, 4812, 1994.
- Davis, M., 'The English Medieval Urban Environment: Learned Views and Popular Practice', unpubl. Ph.D. thesis, University of California, Santa Barbara, 1994.
- Green, A., 'Houses and Households in County Durham and Newcastle-upon-Tyne, c. 1570-1730', unpubl. Ph.D. thesis, Durham University, 2000.
- Hartshorne, P., 'The Street and the Perception of Public Space in York, 1476-1586', unpubl. Ph.D. thesis, York University, 2004.
- Hollander, M., 'Sex in Two Cities: The Formation and Regulation of Sexual Relationships in Edinburgh and York, 1560-1625', unpubl. Ph.D. thesis, York University, 2006.
- Jenner, M., 'Early modern English conceptions of "cleanliness and "dirt" as reflected in the

- environmental regulation of London c.1530-c.1700', unpubl. D.Phil. thesis, University of Oxford, 1991.
- Rossiter, A., 'Economy, Society and Government in Seventeenth-Century Hexham', unpubl. M.Litt. thesis, University of Newcastle-upon-Tyne, 1997.
- Skelton, L. J., 'Beadles, Dunghills and Noisome Excrements: Regulating the Environment in Seventeenth-Century Carlisle', unpubl. MA dissertation, Durham University, 2008.
- Steadman, J., "'A Very Indifferent Small City": The Economy of Carlisle, 1550-1700', unpubl. Ph.D. thesis, Leicester University, 1988.
- Symms, P., 'Social control in a sixteenth-century burgh: a study of the Burgh Court Book of Selkirk 1503-1545', unpubl. Ph.D. thesis, University of Edinburgh, 1987.
- Wilson, B. M., 'The Corporation of York, 1580-1660', unpubl. M.Phil. thesis, University of York, 1967, esp. pp. 166-178.

Websites

- The National Library of Scotland, 'Maps of Scotland', URL: <http://www.nls.uk/maps/early/gord1647.html> (Website accessed on 27/04/10).
- Acts of the Parliament of Scotland, URL: <http://www.rps.ac.uk> (website accessed 27/04/2010).
- Loengard, J., (ed.), *London Viewers and their Certificates, 1508-1558: Certificates of the sworn viewers of the City of London* (London, 1989), URL: <http://www.british-history.ac.uk> (website accessed 01/02/2011).
- History of York, URL: <http://www.historyofyork.org.uk/themes/georgian/daniel-defoe-s-york> (website accessed 01/07/12).

CD Roms

- Burton, J. H., and Masson, D., (eds.), 'The Register of the Privy Council of Scotland, 1545-1625', 13 vols. [CD-Rom] Canada, Ontario, 2004, Tanner Ritchie Publishing.

Television Broadcasts

- Bryson, B. 'Notes on a Dirty Island', *Panorama* (BBC1, 11/08/08, 8.30pm).
- Pickles, E., 'Interview', *BBC Breakfast News* (BBC1, 30/09/11, 8.00am).
- Snow, D., 'Filthy Cities' (BBC2 England, 05/04/2011, 9.00pm, 12/04/2011, 9.00pm, 19/04/2011, 9.00pm).

Newspapers and Magazines

- EasyJet Traveller*, vol. 114 (June, 2011).
- Pattinson, R., 'Hundreds of Council Workers Stage Walkout', *Evening Chronicle* (16/07/08), p. 1.

Museums

- Gladstone Pottery Museum, Uttoxeter Road, Longton, Stoke-On-Trent, ST3 1PQ

