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Animal Cities

Beastly Urban Histories

Edited by
Peter Atkins

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Edited by
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Published by
Ashgate Publishing Limited
Wey Court East
Union Road
Farnham
Surrey, GU9 7PT
England

Ashgate Publishing Company
Suite 420
101 Cherry Street
Burlington
VT 05401-4405
USA

www.ashgate.com

British Library Cataloguing in Publication Data
Animal cities : beastly urban histories.
1. Urban animals. 2. Urban animals--History--19th century. 3. Urban animals--Health aspects. 4. Urban livestock production systems--History--19th century. 5. Land use, Urban--History. 6. Sociology, Urban--History.
I. Atkins, P. J. (Peter J.)
304.2'7'091732-dc23

Library of Congress Cataloging-in-Publication Data
Animal cities : beastly urban histories / [edited] by Peter Atkins.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-4094-4655-2 (hardback) -- ISBN 978-1-4094-4656-9 (ebook)
1. Urban animals--History. 2. Urban ecology (Biology) I. Atkins, P. J. (Peter J.)

QH541.5.C6A535 2012
591.75'6--dc23

2011052209

ISBN 9781409446552
ISBN 9781409446569

Printed and bound in Great Britain by the MPG Books Group, UK.

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Preface and Acknowledgements

A recent ‘animal turn’ has touched many disciplines in the social sciences and humanities. Geographers, sociologists and anthropologists, in particular, have contributed valuable theoretical and methodological insights, and historians also have added to the academic furniture that accompanies any major trend – international conferences, journals, book series and email discussion groups. Despite all of this activity, there remains a gap. As yet, work on animals is not well established in urban history as a sub-discipline. The ‘current bibliography’ published in the journal *Urban History*, for instance, has no sub-heading for animals and has had relatively few individual entries over the years. The historical work on animals so far has lacked the sharp focus that Jennifer Wolch has called ‘anima urbis’. In the hope of setting a new agenda in this direction, Peter Atkins convened a session on ‘Animals in the City’ at the 8th European Urban History Association meeting in Stockholm in September 2006. This book seeks to build on that conference session by presenting a number of themed case studies, and it also features an introductory conceptual commentary that identifies the trends hitherto in urban history and urban environmental history that have provided a supportive context for work on urb-an-imals.

The editor wishes to thank his collaborators for their patience during the long gestation period of this book. He also wishes to thank the Design and Imaging Unit of the Department of Geography, Durham University, for drawing the maps and graphs and the various copyright holders for permission to reproduce illustrations. They are acknowledged individually in the text. Thanks also are due to Richard Rodger for suggesting the original conference topic, and particularly to Paul Laxton for his sustained interest in the project and his many wise words of advice. The book is dedicated to Ned Dorrian, whose smiles have been an inspiration.

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Chapter 1
Introduction

Peter Atkins

Why So Few Animals in Urban History?

Until recently it was still possible to say that 'you will find no mention of animals in contemporary urban theory' but in the first decade of the new century the literature has changed, rapidly, with animal-centredness emerging right across the spectrum from the arts and humanities, through social sciences such as human geography, to scientific interest in urban ecosystems.[1] Jennifer Wolch's original aim in making her statement was to initiate the development of a trans-species theory that would be the foundation of an 'eco-socialist, feminist, anti-racist urban praxis'.[2] As it happened, her explanation of 'why animals matter (even in cities)' was pushing at an already opening door. The 'divide' between humans and animals – and more broadly between culture and nature – was coming under sustained and withering fire from several philosophical directions, and the result has been an enhanced considerability of animals that could only have been dreamt of three decades ago.

There are several, related reasons for the previous neglect of urban animals. Taking an historical perspective of ontology, the first of these is traceable to the Cartesian mind/body split, which, along with some forms of religious-inspired rationalism, is said to have dominated Enlightenment thinking on the mechanistic character of the human body and of natural beings.[3] Abstract metaphysics and detached, objective knowledge were privileged during this period over affect; and, later, in modernity, such dualistic logics continued to underlie and legitimate the desire of society to dominate nature, bring it under control, and modify it to human advantage.[4] As a result, some have argued that a 'natureless' or 'post-natural' urban realm was an active goal of the modern age. Such a state could never have been achieved literally, of course, not least because the principal inhabitant of cities was a large-brained bipedal primate that displayed many animal characteristics and behaviours.[5]

A problem with this first argument is that it is from time to time repeated without nuance and without empirical justification. At the very least, it should be

1 Wolch 1996: 21.
2 Wolch, West and Gaines 1995.
3 Jones 2009.
4 Goldman and Schurman 2000.
5 Morris 1969.

tested in different cities at different times. As will be seen in Chapters Two and Three of this book, there were large numbers of animals in many cities before 1850. They were at the centre of a circulating system which used their wastes to fertilize peri-urban agricultural production, which in turn then supplied fodder to close the loop. The evidence that these animals were unwelcome in the city is lacking until the middle of the nineteenth century. It was the birth of the sanitary idea that was responsible for a reassessment but it was not until the end of the century, or even later in some European and North American cities, that the 'Great Separation' of human residence from animal production began. So, dualism is too crude a frame to be useful, as we will see throughout this book. Indeed, with Bruce Braun, we might reject such philosophical binaries and analyse instead society's attempts to impose difference. For him, there is

> a single ontological plane … from which emerges the differentiated and differentiating worlds that we inhabit. Hence there is not a social realm in one location and a separate natural realm elsewhere, nor a dialectical relation between them; rather the things that we consider to be natural or social can be considered so only through practices of purification by which objects are assigned to either pole.[6]

A second reason why animals have not been prominent is that in the twentieth century the study of cities was anthropocentric, to the extent that the category 'urban' acquired a transcendentally humanist quality in which animals played only bit parts, to satisfy our hunger for companionship or for meat. Even when the words 'urban ecology' were used in the 1920s by the Chicago School of sociology to characterize their analysis of locational behaviour and land use patterns, it was only the human animal that was of interest to them. The 1960s and 1970s saw a further development of this type of modelling, requiring simplifying assumptions in order to achieve meta-generalizations. Fauna, flora, water, climate and geomorphology were all erased in the rush for human behavioural insights that were undisturbed by physical contingency. On reflection, this was not necessarily a conscious disregard of animals but an artefact of a humanist and positivist performance of knowledge.[7]

Third, human imaginaries have been powerful and directional in their classification of urban animals and, as a result, four categories have arisen:

(a) useful animals, for traction or meat;
(b) those which can be enjoyed, such as wild garden song birds;

6 Braun 2009: 27.

7 Modernist thinking can be made to sound like a conspiracy against animals but in practice it is arguable that urban historians had many more important research priorities to address. According to this argument, the time of animals would have come eventually as academic fashions ebbed and flowed, and so even modernism retained a (small) place in its philosophical heart for animals.

(c) those which are desirable, for example companion animals; and
(d) species which have transgressed, such as rats, cockroaches and pigeons, and are judged to be vermin because they are 'out of place' in the city.

It is this last group that has been especially influential, representing as it does human-animal boundary work, where the othering of certain species facilitates their 'cleansing' from an increasingly 'pure' urban landscape.

Considering this marginalization process in more detail, feral pigeons are a good example because there are so many living in cities in Europe and North America. Feeding them is criminalized in some cities; pigeons are trapped or killed in others; and their perching is often discouraged by spikes or sticky gel. In short, they are a 'problem' species, along with starlings and house sparrows.[8] Recognizing the subjectivity of such animals and their everyday 'dumb' resistance to human demands would be a step forward for an animated urban history.[9]

A major foundational element of the purification style of thinking, which is often neglected in presentist animal studies, is the public health debate of the nineteenth and early twentieth centuries, when certain animals were linked to the spread of disease. An example is the house fly, which was largely invisible before the 1890s when at last it was 'found' to be a significant vector.[10] Another is the rat, for centuries a potent symbol of plague and pollution.[11] Rats are the closest to a mid-way category between the realms of humans and of urban wild animals. Their evolution has mirrored that of humans and they have been largely dependent for their spread and their livelihood upon unconscious human generosity.[12] 'Becoming rat', in the sense of Deleuze and Guattari, has been a minoritarian deviance from human goals but rats have nevertheless been astonishingly successful in their strategies.[13] Rat city is a parallel, subaltern universe that the complacent among us like to pretend is virtual but which is all too present and real for people living in rat-friendly housing.[14]

Joanna Dyl's discussion of San Francisco in the first decade of the twentieth century is interesting because she finds that the city's 'war on rats' that accompanied an outbreak of bubonic plague had consequences for other animals.[15] Domestic pets and working horses were tolerated but the authorities put heavy restrictions upon back-yard chickens because their coops and feed were thought to attract rodents.[16] A 1908 ordinance required concrete floors and brick or concrete walls

8 Jerolmac 2007, 2008.
9 Miele 2009, Hribal 2007.
10 See Chapter Two.
11 Burt 2006a.
12 Zinsser 1934.
13 Lawlor 2008.
14 For a fascinating account of rats in mid-nineteenth century London, see Mayhew 1861, vol. 3: 1–24.
15 Dyl 2006.
16 For a similar story in Australia, see Chapter Eight.

for coops, effectively pricing out many of the poor householders for whom eggs and chicken meat were a source of income and nutrition. Their small-scale, part-time production was replaced by large-scale, capitalized enterprises that, from the outset, understood the discourse and therefore emphasized cleanliness. A similar story could be told of milk production, which was excluded from the city in 1910, or of the controls that were imposed on the movement of horse manure from the city's stables. The anti-rat campaign therefore turned into a wide-spectrum review of the place of animals in what it meant for San Francisco to be a city.

Urban Environmental History

One disciplinary setting for the study of nature and culture has been 'environmental history' and its recent offspring, 'urban environmental history'. Fortunately both are well served with a number of state-of-the-art review papers and there is no need for us to cover this ground again in detail.[17] Instead, a brief reprise of the themes that have emerged will help to illustrate the field within which the present book was conceived.

The first theme has been the modification of the physical environment, for good or ill. This includes the levelling or grading of slopes, the filling, diversion or culverting of streams and rivers, and the sterilizing of vast areas of soil and rock under concrete and tarmac.[18] Stuart Oliver's account of the construction of the Thames Embankment is exemplary in this genre because it illustrates the complexity of the planning and engineering process but also demonstrates the Victorian discourse of dominance over unruly nature.[19] The same might be said for the several studies of the creation of the underground city to serve the needs of advanced technical infrastructures, such as pipes and sewers, cable ducts, and railways.[20] One argument has been that these services have become so vital for the continued growth and efficiency of urbanism that 'networked cities' are representative of a new phase of urban civilization.[21] Our dependence upon these systems is now so great that any interruption is catastrophic, such as the power grid failure and extensive blackout in the north east of the United States in 2003.[22] Animals are also affected by network disruptions but their resilience is influenced more by the hard landscape and systems of tunnels than it is by the services they contain. By way of illustration, the heat island generated as a side effect of

17 Melosi 1993, Rosen and Tarr 1994, Hays 1998, Platt 1999, Tarr 2001, Merchant 2002, Schott 2004, Isenberg 2006, Brantz, 2007, Melosi 2010.

18 Colten 2005, Klingle 2007, Penna and Wright 2009.

19 Oliver 2000, 2002.

20 Trench and Hillman 1985, Gandy 1999.

21 Tarr and Dupuy 1988, Graham and Marvin 2001.

22 Bennett 2005.

urbanization would continue to provide wild habitat modification for animals even if all humans left the city.

New Orleans is another example of the challenges of making nature yield to the basic needs of a city site. Not only were the city's sea defences complicated and expensive to erect but they proved to be fatally flawed in the flooding of 2005. The articles in volume 35, part 4 (2009) of the *Journal of Urban History* on Hurricane Katrina show that this disaster was the culmination of an environmental history of neglect and partiality by the authorities which put poor people at greatest risk of flooding. A related sub-theme has been the environmental damage that may be the unintended consequence of urban growth. Historically there have been many examples, such as smoke from domestic fires, industrial pollution and the discharge of raw sewage into urban rivers and water bodies.[23] These have been especially important in changing the scope and balance of animal and insect niches in cities, as have occasional disasters such as fires, earthquakes and floods.[24]

More positively, urban mammal and bird habitats are now receiving greater attention from eco-historians and geographers than ever before. Michael Campbell, for instance, sees cityscapes as shared between birds and humans.[25] A wide range of birds are attracted to suburban gardens and city centres, either to forage omnivorously on scraps, as with pigeons and gulls, or to exploit nesting sites on tall buildings that resemble cliff faces. Human feeders make a significant intervention for species that are vulnerable in cold weather, and rubbish dumps are an especially attractive, spatially concentrated feeding source for a range of birds and small mammals. As a result, it is possible to document notable successes, where certain animals – hooded crows and magpies are examples – have found urban and peri-urban areas so beneficial that the centre of gravity of their entire distribution has changed.[26] Young birds become habituated to this type of environment and show no desire to return to the rural woods and fields of their forebears to seek their living.

Also under this first division of urban environmental history, we note the considerable amount of research on the 'creation' of nature and the deliberate attraction of species. City parks were thought of in the nineteenth century as important mitigators of then-prevalent diseases such as tuberculosis. Fresh air and the appreciation of trees, plants and selected animal and insect species were seen to be important contributions to the health, education and well-being of responsible citizens. The animals introduced or tolerated were of the non-problematic variety, of course, so parks remained carefully controlled spaces. Smaller versions, that in effect represented landscape gardens in miniature, became increasingly popular in the suburbs from the late nineteenth century onwards. In Britain in particular, middle class householders associated respectability with the greening of the city and they felt deprived if they did not have a lawn and flower beds, with additional

23 Brimblecombe 1988, Mosley 2008, Collins et al. 2008, Luckin 1986, 2000.

24 Davis 1998.

25 Campbell 2007, 2008.

26 Vuorisalo 2010.

provision perhaps for a cat, a dog, and a children's pet, such as a rabbit or guinea pig. For America, Paul Robbins has analysed the interesting political economy of the lawn-making industry and there have recently been other contributions on the place of nature in suburban gardens.[27]

The clash of human and animal interests may also create friction when wild species from the peri-urban hinterland are attracted to feeding or nesting opportunities in the ever-expanding suburbs. For a transitional period, or longer, there is co-presence and co-habitation in such areas. Birds are mobile and may learn to avoid zones of danger, but day-feeding mammals are relatively soft targets, such as macaques in Singapore, which are culled by the authorities as nuisance animals. Their reported boldness in 'stealing' food and 'invading' gardens is an irritant and their relatively poor image with the public has made them vulnerable.[28] In Britain, urban foxes occupy a similar niche, and they have shown a remarkable degree of adaptability in their new environment.[29] Public sympathy for foxes is greater than for macaques, but recent stories about a fox attacking babies as they slept indicate that this may eventually wear thin.[30] The point here is that 'wildness' appears to be negotiable in some urban ecologies and the attitudes of humans to wild animals are both complex and unpredictable, depending upon the 'reputation' that a species has, including media representations and primal feelings of fear and disgust.[31]

The continuing abundance of 'wild' animals in cities at first surprised and then excited ecologists in the twentieth century. Research has expanded exponentially, starting with work in postwar Berlin, London and other European cities and gradually spreading around the world. It is at last possible to say that 'cities and urban agglomerations are now addressed as complex evolving socio-ecological systems'.[32] The latest compilation to come to hand is the *Routledge Handbook of Urban Ecology*, edited by Ian Douglas and others, which contains 50 state-of-the-art articles. This proves that urban ecology is now a mature participant in the academy, though its historical depth remains limited.

Urban ecology also has its practical applications. Following a phase of observation, wonder and enchantment, we are now moving into the age of 'biophilic cities'.[33] Here, plants and animals are actively encouraged by planners for a number of reasons.[34] They are seen as vital for a generation of children who have 'forgotten how to play in the woods' and instead are said to be tied to computer games at home. In car-centred cultures, their parents also need accessible and interesting walks to counter obesity and the other medical and psychological

27 Robbins 2007, Head and Muir 2006.
28 Yeo and Neo 2010.
29 http://www.thefoxwebsite.org/urbanfoxes/index.html [accessed Nov. 2010].
30 *Guardian* June 7, 2010.
31 Ilicheva 2010.
32 Weiland and Richter 2009, Adams 2005.
33 Beatley 2011.
34 Müller and Werner 2010.

disorders that come with inactivity. The regeneration of cities can also be advanced through the renaissance of nature on vacant land, and the re-introduction of urban farms and allotments helps with a reconnexion to food production.

A second major theme in environmental history has been that of the urban metabolism. By this is meant 'how cities utilize material and energy that comes from beyond their borders' and how a form of mediation is achieved between nature and the city.[35] This idea has attracted interest on various planes. It is of importance, for instance, to those attempting to calculate the urban material footprints that say something about resource balances and sustainability.[36] Sabine Barles and her collaborators in Paris have developed material flow analyses for that city, for instance with respect to nitrogen, and have produced commentaries on exchanges between the city and its surrounding region.[37] The organic metaphor implicit in the metabolism approach may be related to bodily circulatory processes, such as the blood or digestion. It may also be theorized as understandings of space in terms of flows, as proposed by Deleuze and Guattari and elaborated, among others, by Maria Kaika.[38] Matthew Gandy's vision of the transformation of New York touches on this and he also sees advantages in the related concept of cyborg urbanism.[39]

Urban historians such as Joel Tarr, Clay McShane and Martin Melosi have been prominent in metabolism studies. Their version of this research has been to consider everyday aspects of the urban environment. The themes are wide-ranging but two of the most important are Tarr and McShane's work on horses, which we will call upon in Chapter Four, and Melosi on sanitation.[40] At first sight, the latter may seem to be less relevant to the present volume but it will be argued in Chapter Two that new ways of seeing nature in the city, which resulted from the 1840s' reappraisal of human and animal wastes, led to a recalibration of society's attitudes to all of its animals. This type of historical urban metabolism research recognizes the sunk costs in socio-economic systems and the technological infrastructures and inertia that lock cities into evolutionary paths from which it is costly to escape.[41] The associated politics of choice and resistance will often be socio-ecological in as much as these technologies are designed to deal with the organic consequences of city life such as sewage and rubbish.

Food has also been a consideration in urban metabolism studies, for instance in Bill Cronon's work on Chicago, but it is water that has probably attracted most attention in urban metabolism studies and if we also include water-borne sewage systems then here we can show that 'cities are pivotal sites at which the resource

35 Melosi 2010: 10, Kaika and Swyngedouw 2000.

36 Kennedy et al. 2007, Niza et al. 2009.

37 Barles 2005b, 2007, 2008, 2009, Billen et al. 2008.

38 Kaika 2005.

39 Gandy 2002.

40 McShane and Tarr 1997, 2003, 2007, 2008, Tarr 1999, Tarr and McShane 2005, Melosi 1981, 2000, 2001.

41 Monstadt 2009: 1926.

flows "metabolized" by infrastructures are geographically concentrated'.[42] Erik Swyngedouw and colleagues have used Marx's concept of metabolism to explore this nexus of urban natures further.[43] Their essential point is that commodities such as water and food, which stand in for our consumption of nature, are socio-metabolically 'produced' through networks of power relations in the supply chain. The specific processes of production may be social, political, cultural and economic, and they are linked together in a 'nested articulation of significance, but intrinsically unstable geographical configurations'.[44] This networked production process is not socially or ecologically neutral and there are, as a result, always winners and losers.

Animal Histories and Animal Geographies

Other major strands of thinking about animals have emerged in the humanities and urban history,[45] and also geography,[46] without necessarily having an explicit environmental connexion. Common in Science and Technology Studies and human geography but less so in the work of historians, this genre rides under the banner of post-structuralism, although its publications have been so varied, and the intellectual energy so intense, that such a reductionist label seems ludicrous. To enable clarity, but not intended as an agenda statement, the following sub-themes are recognizable.

The first is 'animal studies', which as a field has become rich and varied; so broad in fact that it is impossible to encapsulate other than to say that it is often about human identities and place-making filtered through relationships with animals.[47] An excellent example is Kay Anderson's reinterpretation of domestication. Hitherto this was a field in which it seemed that 'humans are not in the grip of their instincts and senses … whereas animals are little more than their biology'.[48] Anderson's review of this misplaced boundary of humanness and animality showed that the 'improvement' of animals through domestication was also implicit in harnessing the energies and regularising the rationality of many human 'others', who were racialized and gendered.[49] Domestication was,

42 Cronon 1991, Swyngedouw 1997, 2004, 2006b, Katko et al. 2010, Melosi 2000.

43 Swyngedouw 2004, 2006a.

44 Heynen et al. 2006: 7.

45 Faure 1997, Hodak 1999, Creager and Jordan 2002, Henninger-Voss 2002, Ritvo 2002, Fudge 2002b, Pflugfelder and Walker 2005, Mason 2005, Kalof 2007, Kalof and Resl 2007, Brantz and Mauch 2009, Wolfe 2009, Brantz 2010, Montgomery and Kalof 2010.

46 Wolch and Emel 1995, 1998, Philo and Wolch 1998, Philo and Wilbert 2000, Wolch 2002, Emel et al. 2002, Johnston 2008, Wolch et al. 2003, Wilbert 2009, Emel and Urbanik 2010.

47 Wilbert 2009: 122.

48 Anderson 1997: 466.

49 Anderson 1995, 1997.

then, a politics of bringing various 'natures' under control, as defined by core Enlightenment values. Harriet Ritvo explored similar territory in her discussion of cattle breeding, pedigree and prize pets, the prevention of cruelty to animals, rabies, zoos, and hunting.[50] For her, each of these animal-human encounters served to reinforce or reproduce existing social hierarchies. In addition, Kathleen Kete's perspective on nineteenth-century Paris is that pet dogs were accorded affective characteristics, such as loyalty and heroism, that gave them some credit in the transactions of social capital, but this was not available to all dogs in the city.[51] Jean Baudrillard saw more clearly than most that such animal-human transactions were asymmetrical: 'our sentimentality towards animals is a sure sign of the disdain in which we hold them. It is in proportion to [them] being relegated to irresponsibility, to the inhuman …'.[52]

Animal studies have also pioneered understandings of the role of animals in the past in the making and unmaking of places and landscapes.[53] Alice Hovorka, for instance, finds that chickens have played an important everyday role in African cities and she claims that 'understanding urban human-animal relations is central to explaining urbanization in Africa'.[54] Her fieldwork was in Gaberone, where there are 200,000 human inhabitants and 2.3 million chickens. The sector there is so important economically for working people that the urban planners have been forced to take a positive view of it and to zone land accordingly. Other cultural geographers have told the story of rural landscapes through animal-human entanglements and their approach shows great promise for equivalent urban histories.[55]

In the humanities, there has been the recent development of 'animality studies', sometimes with an historical twist because of its emphasis upon a canon of literature. American institutions, such as Colorado State University have been at the forefront.[56] How is this different from animal studies? Let Michael Lundblad explain:

> Animality studies can prioritize questions of human politics, for example, in relation to how we have thought about human and nonhuman animality at various historical and cultural moments … I want to open up a space for new critical work that might have different priorities, without an imperative

50 Ritvo 1987.

51 Kete 1994.

52 Baudrillard 1994: 134.

53 Wilbert 2009: 124.

54 Hovorka 2008: 95. For dogs and the ordering of urban social space in South Africa, see McKenzie 2003.

55 See Matless et al., 2005, on otters in the Norfolk Broads and Lorimer 2006 on reindeer in Scotland.

56 http://animalitystudies.colostate.edu/ [accessed December 2010].

> to claim the advocacy for non-human animals that runs through much of the recent work in animal studies.[57]

A second departure has addressed the moral histories and spaces of animals, from philosophical studies of ethics to the legal and practical issues of animal rights and advocacy. Pain has been one aspect considered here, for instance in the city cattle markets and slaughterhouses, making them centres of concern for reformers in the nineteenth century, along with campaigning about the relationship between scientific advance and laboratory experiments on animals.[58] The vivisection debate, for instance, was particularly lively in Britain from the 1870s onwards and was heavily influenced by feminist activism.[59]

Third, urban political ecology has recently emerged as a means of relating ecology and political economy together in urban settings. There is some overlap with Swyngedouw's urban water research mentioned above but political ecologists are a broad church and their interest in metaphors such as metabolism and circulation should not be taken for granted.[60] Perhaps a stronger foundation is the way in which capital found ways to harness the rhythms, instabilities and time challenges of animal biology. The commodification of urban animal wastes described in Chapter Two is testament to how flexible and enterprising this sector was and how it contributed to complex systems of recycling that were very different from the large-scale, factory-based production regimes that followed.

Another application of political ecology lies in the relationship between nature and the growth of cities.[61] What I mean here is taken-for-granted, dirty, smelly, warm-blooded nature; nature 'in here', not nature as a representation of the sublime pastoral or of the wilderness. Raymond Williams' brilliant book is often quoted as a seminal work in this area but he was interested in the intertwining and dialectical opposition of these categories rather than nature *in* cities, its challenges and erasures.[62] Even James Winter, who was writing specifically on the environment in the nineteenth century, could find no room for this neglected topic.[63]

What then of the history of urban nature? It is important to note that recent literature is at last providing relevant theoretical frameworks. One strand has been Marxist interpretations such as 'second nature' (Lefebvre) and the 'production of nature' (Smith), where the argument is that what may appear to be natural has often been influenced by human factors, along with nature that has been eliminated or

57 Lundblad 2009: 497.
58 Turner 1980.
59 Rupke 1987, Mayer 2010.
60 Keil 2003, 2005.
61 Benton-Short and Short 2008.
62 Williams 1973.
63 Winter 1999.

compromised to the extent that it is no longer sustainable.[64] David Harvey's subtle yet powerful historical materialism takes this logic further and he concludes that

> all nature is urban nature, for to the extent that systems of production, exchange and consumption have become global, 'distant' natures and everyday urban environments are woven into tight webs of socio-ecological and spatial relations. This does much more than disturb the distinction between nature and society; it also radically reconfigures the terrain – and the goals – of green politics.[65]

Political ecologists also have an interest in the contests throughout the nineteenth and twentieth centuries over what kinds of nature should be encouraged or excluded. Urban blood sports such as bull running and cock fighting were controlled in Britain in the early nineteenth century but others, such as rat pits, took longer, and some rural hunting continues right through to the present day.[66] The Society for the Prevention of Cruelty to Animals was founded in London in 1824 and such activism in civil society was not without sympathy in the legislature. In fact there was some commonality with the 'humane' movements for the abolition of slavery and the improvement of working conditions for children.

Fourth, there is 'posthumanism'. This is a movement of social scientists seeking epistemological innovation through a reconsideration of human and non-human subject positions.[67] Some have looked to unbundle the diversity of what it is to be 'animal', for instance by pointing to 'social constructions' of difference. This is based on the rejection of essential truths, conditions and identities. Others have challenged the modernist ontological divide between humans and other animals, for instance through a flattening of the idea of separate agencies. One way of achieving this has been to imagine human-nonhuman hybrids that have shared agency, perhaps in 'actor networks' or in 'assemblages', which are mutually constituting collectives.[68] An example is the horse-drawn vehicle that we will meet in Chapters Three and Four. Apart from a few experiments with steam and electricity as motive power, most omnibuses and carriages throughout the nineteenth century were horse-powered and the combination of animal and machine was so successful that it dominated urban transport around the western world. Many horses would not have existed without urban demand and their survival depended upon their ability, for a few years at least, to pull heavy weights. Such was their indispensability that the faeces they dropped on to the street was tolerated. Horse and vehicle were an animal-machine collective that also required a human driver and all of the connexions that kept the horse fed and the vehicle

64 Lefebvre 1991, Smith 2008.

65 Braun 2006: 218.

66 Harrison 1973.

67 See the book series on 'posthumanities' published since 2007 by the University of Minnesota Press.

68 Roe 2009.

maintained. It is impossible, in this view, to ascribe full agency and capacity to the human actors alone or to see animals or even nature as separate. As a result, the term nature-culture has been coined in recognition of the overlap, the merging, the entanglement, the conjoining of the two.[69]

So far this may seem palatable but some posthumanists take their argument much further. An example is the anthropocentric flavour of animal studies in that the ultimate insight is always about society or individual human identity. Posthumanists want recognition of the equivalent sociality of nonhumans and the vitalism of their worlds. For these scholars, the 'lively agencies of bodies, technologies, and places' are important and they have turned for inspiration to the theoretical work of Bruno Latour, Gilles Deleuze and others.[70] Here they have found a concern for emergent rather than fixed material ontologies. Recent work on animal subjectivities has demonstrated the relevance of this approach, for instance to the interaction of cows and computers or robot milking machines.[71]

This thought of animals interacting with machines raises the question of the city being a more-than-human context. This is true of all people who wore spectacles to enhance their 'natural' sight, who took medicines to improve the state of their health, and who chose warm clothing in temperate climates. It was also the case for horses in harness or dogs on a leash. All were in a sense hybrids of themselves and whatever technology or organism modified their capacity for living. In the vocabulary of Donna Haraway this made them 'cyborgs' and the cities they inhabited were 'cyborg cities'.[72] Obviously the word cyborg has added meaning in the twenty-first century, with our ability to produce genetically modified organisms or have medical implants in our bodies, but the concept is also relevant to a posthumanist reading of urban history. If we were take it to its logical conclusion, we might include food and maybe even the microbes that in one way or another have become associated with humans. Zoonotic diseases, for instance, were significant in the toll of morbidity and mortality in nineteenth and twentieth century European cities and deserve an in-depth treatment from posthumanist historians.[73] Some of these organisms, particularly those causing disease, have been powerful enough to influence the course of civilizations and even the evolution of the human genome. Our co-evolution with them has been on the basis of co-presence and a sharing of resources.

One last comment on the potential for posthumanist urban histories of animals relates to the work of Sarah Whatmore. She has carved out new understandings of hybridity through work that ranges from animals used in the arenas of the Roman

69 Jones 2009.

70 Lorimer 2009: 347.

71 Risan 2005, Holloway 2007.

72 Haraway 1991. See also her posthumanist discussion of companion animals. Haraway 2003, 2008.

73 Atkins 2010, Nimmo 2010.

Empire to zoo elephants at the present day.[74] Although her approach draws upon Actor Network Theory, she goes beyond its limitations and finds plenty of room for a politics of animals. Steve Hinchliffe opens this out into the interrogation of animal presences and absences when he seeks the traces of shy animals such water voles and black redstarts in Birmingham.[75] Although historians cannot emulate the fieldwork element of this research, the implications of working with traces will not be lost on them. Hinchliffe has already shown the value of vitalist framings in this regard with his call for a rethinking the complex human-nonhuman entanglements of BSE.[76] In sum, this group of researchers has opened up new perspectives on the ontological politics of urban animals that are relevant right across the social sciences.

History–Nature–Animals–Cities

Nature for us is not 'eternal and immutable'.[77] On the contrary, even the 'wildness' of certain urban animals does not mean that they shun the advantages of living in or near humanized landscapes. Nor have cities necessarily degraded existing animal habitats in the way that is sometimes attributed to them. Those in Britain and continental Europe mainly grew from smaller settlements and have not modified a 'natural' environment. They were merely an intensification and a scaling-up of already humanized landscapes, where flora and fauna had long since been modified and physical changes initiated to hydrological and biogeochemical cycles. One profound change, though, in the age of tarmac and concrete, was the introduction both of organically sterile areas and of fragmented zones of habitat where biodiversity has sometimes actually increased.[78]

As Byrne and Wolch observe, 'nature suffuses the city'.[79] This realization means that we can now admit, in retrospect, that seeing cities as 'unnatural' was an oversight. It follows that, not only is the meaning of 'natural' softening but also in some quarters the nature-culture divide itself has begun to dissolve, or at least is losing its categorizing power.[80] Studies of urban habitats, urban ecology, urban ecosystems, and urban nature have become possible and even desirable. Cities can now be seen as home – albeit with different mixes of encouraging and discouraging factors – to vast numbers and species of plants and animals. As we have seen, vermin, parasites and microbes can all be viewed as part of such a zoöpolis. Why not?

74 Whatmore 2002.
75 Hinchliffe and Whatmore 2006, Hinchliffe 2007.
76 Hinchliffe 2001.
77 Braun 2009: 21.
78 Alberti 2009, Mockford and Marshall 2009.
79 Byrne and Wolch 2009: 47.
80 Jones 2009.

It was with these thoughts of uncertainty and complexity in mind that a team of scholars approached the topic of 'Animals in the City' at the Eighth International Conference of the European Urban History Association in Stockholm in September 2006. Three of the chapters in the present book were papers in that session and five others are by the participants. In one way or another they pick up on themes that have been raised earlier in this chapter, although we make no claim to a comprehensive set of answers to the challenges raised there. Our disciplinary backgrounds vary but most of us have associations with either history or historical geography. This gives our stories a greater epistemological coherence than is true of many edited collections.

The opening chapters, Two to Four, are closely related. They look at working and productive animals that lived and died in cities in the nineteenth century, using mainly the case study of London. The purpose overall is to argue that their presence yields insights into evolving contemporary understandings of the category 'urban' and therefore what made a good city. Chapter Two begins with an investigation of dirt, waste and the role of animal 'nuisance' as a catalyst to both medical and sanitary theories of the environment. There is plenty of evidence, it seems, that cities such as London and Paris continued to host food-producing livestock, from pigs to milch cattle, in large numbers and the resulting smells and faeces were only brought under control in the second half of the century by concerted legislative and regulatory action. It was the deliberate rupture of this function, coupled, in the second and third decades of the twentieth century, with the decline of horse-powered transport, that started moves towards the cleansed and de-animalized 'modern' city that was a goal for many.

A related strand of argument in Chapter Two is that the sewering of cities from the mid nineteenth century onwards weakened another link with the countryside. This was the circulation of nutrients, which for centuries had seen animal manure and human night-soil transported to peri-urban fields and, in return, vegetables and animal fodder were marketed in the city. A pinch point was the failure of sewage irrigation to be successful on a large scale, meaning that the disposal of all forms of human waste became a matter of municipal management rather than of profit. This was crucial to a growing perception by the local state of 'city versus country' in an era when it increasingly had the power and the capacity to shape urban futures. The chapter gives a name to this ontological re-mastering and parting of the ways: the Great Separation.

Chapter Three takes the recycling argument further. It identifies around London a 'manured region' where much of agricultural prosperity was sustained by animal dung in the nineteenth century. The radius of this was short because of the expense of carting a heavy, low-value, waste product, but within the favoured zone there was intensive horticulture and hay production. As the numbers of urban animals declined, so this system of sustainable fertility was undermined. A similar fate awaited the manured regions of Paris, Berlin and New York, although each city had its own pace of change related to factors such as attitudes to the presence of animals in urban areas and the technologies of disposing of human waste.

There has been surprisingly little about dead animals in urban history. Slaughterhouses have properly received attention but the bellowing of dying beasts has made us deaf to what happened next. Economic historians have examined the meat trade and leather but the other 'blood and guts' by-products have been under-researched. Chapter Four reminds us that animals made a major contribution, even when dead. Their traces were everywhere. There were many urban industries involved in processing the by-products of animal carcases, not just the meat but everything from blood to the use of fat in candles. The spatial patterning of these activities followed a particular logic, notably in south London, where the district of Bermondsey has a strong claim to the title 'animal city'. It was not only home to live productive animals and to slaughter-houses but it also had the largest single concentration in Britain of employment in processing the body parts of cattle and sheep. Its many tan yards and leather factories were internationally renowned for the quantity of their output, and animals were undoubtedly the crux of the local economy for centuries. The smells and pollution would have been an unbearable nuisance anywhere else in London, but in Bermondsey they represented a job opportunity and complaints were muted, proving that attitudes to the Great Separation were differentiated and that the 'purification' of the urban environment is likely to have been strongly contested in some districts.

Chapter Five stays with the dead animals theme. Here Paul Laxton gives a close reading of disputes in nineteenth-century Edinburgh about diseased meat: how common it was and its implications for human health. What emerges is a drama of personalities. The veterinarian, John Gamgee, and city Medical Officer of Health, Henry Littlejohn, were critics of a meat trade that sought to profit from a poor quality product. Against them were the vested interests of the meat trade, as might be expected, but also the veterinarian, William Dick, who was sceptical of the danger of zoonotic disease for consumers. This is not just a case study of the clash of interests but also a penetrating insight into the significance of individual agency at the local level. In the absence of the quality assurance systems that are taken for granted today, consumers relied for protection upon the enthusiasms of local actors and their ability to manipulate the political forces manifest locally.

Chapter Six, by Sabine Barles, is about 'undesirable nature' in nineteenth-century Paris. A discussion of nuisances illustrates similarities with London in terms of the survival of animals and animal-related trades in the centre of the city until the end of the century. And the smells were like London, as was the production of milk and the slaughter of animals. But Paris is much better documented than London, not only having octroi records of imports into the city, but also a greater appetite for surveys and statistics about animals, their by-products and their wastes. This chapter should be read alongside Professor Barles' other work, which together provides an example to us all of how history, with or without the animals, can help us to understand the evolution of the present environmental contexts and problems of our large cities.[81]

81 Barles 1999, 2001, 2002, 2005a, 2005b, 2006, 2007, 2008, 2009.

Takashi Ito, in Chapter Seven, argues that animal spectacles in nineteenth-century London influenced contemporary interpretations of the urban experience. London Zoo is used as a case of this public animal world. Its role as an animal space is first of all evaluated by comparison with the sites of other animal spectacles in the city. Then the zoo is contrasted with Smithfield, the infamous livestock market, in order to highlight the issue of animal inclusions and exclusions. Dr Ito also discusses the boundary between humans and animals, and the reactions to the zoo animals that resisted their confinement or transgressed their expected roles. Overall, the essay explores how the geographical transformation of London influenced popular sensibilities about animal life, and how this affected the emergence of different 'animal spaces' in the city. The zoo's success was a function of its location in Regent's Park and its portrayal as a scientific institution rather than a tawdry menagerie.

Chapter Eight, by Andrea Gaynor, is devoted to the contested spaces of suburbia in Australia in the period 1890–1990. Back-yard chickens, or 'chooks' as they were known, are a good example, first of the everyday acceptance of small livestock in these cities, as a 'natural' presence and, second, of the needs of ordinary working people to find additional income and food sources, for instance during the economic depression of the 1930s. In one Melbourne suburb in the late nineteenth century as many as two-thirds of households kept chooks but this proportion fell steadily in most Australian cities in the twentieth century. One reason for the eclipse of household fowls was the introduction of regulations that addressed health concerns about the proximity of residences to farm animals. This was in a similar spirit to the nuisance- and health-related legislation and local by-laws in Britain. A second factor was the 'modern outlook' that emerged in the twentieth century, affecting everything from the images in home-making magazines to the zoning mentality of local councils about the proper place of food production, which should be separated from residential districts. By the 1950s and 1960s, many of the interviewees for this study were pursuing other leisure activities and women's increasing participation in the workforce meant that they had less time and inclination to look after chickens. Overall, the chooks are a convenient vehicle for telling the story of what makes a good city and a good citizen.

The last word, in Chapter Nine, goes to Philip Howell. He has written about urban dogs before, for instance in his classic paper 'Flush and the *Banditti*', which is about dog stealing.[82] On this occasion he looks at the problem of the public dog and produces an account that enlightens us on the nature of space in Victorian and Edwardian London. The first thread is the call for dogs to be muzzled in public because of the fear of rabies. Although this disease was never so common in Britain as on the Continent, it nevertheless produced reactions that were close to hysteria. We might be forgiven for taking the second theme, the increasing use of the dog leash, as a similarly disciplinary measure but Dr Howell finds good reasons to interpret it differently as means by which owners and their pets were

82 Howell 2000, 2002.

able to create an altogether more positive public response and therefore carve out spaces in which particular behaviours were positively encouraged and even celebrated.

This is a book of selected animal case studies of nineteenth- and twentieth-century cities. As specified in the original conference, the emphasis is upon European cities, including Perth and Melbourne in Australia, which were heavily influenced by British values and by British immigration. We acknowledge that our insights are therefore limited to this narrow context and to a number of animal species. An extension of our enterprise might have included chapters on back-yard pigs, on 'nuisance animals' such as rats or pigeons, and it would have been particularly valuable to have further explorations of the concept of wildness, either in semi-domesticated species such as cats or the shy mammals of which so little trace is visible. Parasites, fish and microbes are other absentees but the point that we have raised is that there are so many participants in animated cities that no single compendium could ever be comprehensive.

Our collective voice in this book is that of the urban history literature rather than the more theory-intensive animal geography that is becoming influential, or even the environmental history that has been so prominent in America. This has given us the scope to develop arguments based upon the extensive use of archival source materials. These are much richer than has perhaps been imagined hitherto and great potential remains for further work. As mentioned earlier, historians often deal in traces, and we think that for animated cities these legitimately include the manure of live animals and the by-products of dead animals. Together these are departures from the existing literature, along with an interest in the cultural politics of accessories such as muzzles, leashes, cages and chicken coops.

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Chapter 2
Animal Wastes and Nuisances in Nineteenth-Century London

Peter Atkins

Dirt, Waste and Nature

Mary Douglas famously saw dirt in modernity as 'matter out of place', or, more precisely, as what is 'disgustingly or objectionably out of place'.[1] But she was less concerned about the health-degrading potential of the micro-organisms in dirt than the implications for social pollution, because 'a polluting person is always in the wrong'.[2] For her, then, dirt makes visible the margins of the socially acceptable.[3] Implicit in this is a relational ontology that varies through time and across space – your dirt may be invisible to me – and unspoken in much of the sub-Douglas literature is the point that views about dirt or waste, and decisions about the interventions to deal with them, are at most temporary political stabilizations and inevitably contingent.[4] I will argue that one such stabilization, the mid nineteenth-century enthusiasm for sewers, was a key threshold for understandings of dirt and waste, that had implications for the degree to which animals were integrated within the core project of modern urbanism.

The greatest possible respect has been paid to Douglas's semiotic interpretation of dirt, judging at least by the number of namechecks in the literature. To put it into context, her work was in the style of a modified functional structuralism and it was aggressively culturalist.[5] For her, 'to account for preferences there is only cultural theory'.[6] Douglas focused on symbols and found them helpful in identifying order- and meaning-producing accounts of dirt, impurity and polluting behaviours at the boundaries between society and nature.[7] She was especially concerned with the danger inherent in perceptions of dirt and the otherness attaching to those associated with it. This cultural-embeddedness type

1 Culler 1985: 4.
2 Douglas 1966: 113.
3 As Campkin 2007 notes, this is at odds with Douglas's structuralist universalism.
4 Gregson and Crang 2010. I am assuming that dirt and waste have a level of synonymy, although they were separate for Douglas.
5 Lupton 1999: 36.
6 Douglas 1992: 103.
7 Lamont 2004.

of argument has since been elaborated by many others, for instance by Vigarello and Laporte.[8]

But Douglas's analysis had its limits. According to her critics, there is more to dirt, dust, rubbish, junk, waste, debris, and detritus than social pollution and taboo.[9] It seems that Douglas herself was always alert to the ambiguities of dirt but her ideas have arguably been over-simplified by some of her followers.[10] Anyway, dirt theory has moved on to embrace Julia Kristeva's psychoanalytic ideas about the abject nature of excreta, blood and corpses.[11] Here, in the moment of horror, the very foundation of meaning is under threat, particularly primal boundaries such as the one between the human and the animal. Also prominent has been Georges Bataille, whose 'base materialism' of dirt and squalor extended previously circumscribed notions of materiality, and whose 'accursed share' explicates the excess in modern society that is ultimately destined to become waste.[12] More recently, a rapidly growing literature is developing on the themes of dirt, waste, ruination and recycling, further illuminating the material margins and their transgressions.[13] A particularly interesting departure is the discussion of dirt as contributory to the rise of a 'risk society', for instance through analyses of environmental pollution.[14]

For our purposes, it is helpful to draw upon these writings to identify a number of nineteenth-century dimensions of dirt and waste because dirt, in addition to teeming with bacteriological life of its own, is one of our traces of other aspects of nature. This is by no means straightforward because present-day notions of dirt and waste are not easy to map on to the ideas and linguistic categories of 150 years ago. Take 'dust', for instance. In the mid-century this was a word with a wide spectrum of meaning, as is clear in a reading of *Our Mutual Friend*,[15] where the 'dust' in Boffin's Bower is a mixture of cinders, fire ash, human waste, and domestic rubbish.[16] The terminology of the day has survived in British-English words such as dustbin and dustman, and there are still overtones of the humour and edginess that were personified in the popular Victorian character, Dusty Bob.[17] But dust for Noddy Boffin was not waste as redundancy; it was his source of wealth in an age when recycling was, by necessity, the norm.[18]

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8 Vigarello 1988, Laporte 2000.

9 Thompson 1979, Culler 1985, Bonheim 2004, Scanlan 2005.

10 Campkin 2007: 73.

11 Kristeva's 1982, Wolkowitz 2007.

12 Bataille 1991, Noys 2000.

13 Hoy 1995, Bonheim 2004, Edensor 2005, Hawkins 2006, Gille 2007, Gregson and Crang 2010.

14 Beck 1992, Daru 2002, Zinn 2008.

15 Sucksmith 1973, Metz 1979.

16 [Horne] 1850.

17 Maidment 2007.

18 Steedman 1991.

In what follows, four dimensions of dirt are identified with reference to nineteenth-century cities, particularly London.[19] The first uses words such as 'noisome' and 'nuisance', which at first sight appear archaic but in reality are fundamental in the genealogy of thinking about dirt and smells and how to eliminate them. Second, there is a discussion of animals as both representative and constitutive of a particular period of urbanism. Third, this point is elaborated in a discussion of what we will call 'urban farming'. Finally, the Great Separation of urban and rural, of culture and nature is traced to the sewering of cities and the banishment of food-producing animals, both happening in the second half of the nineteenth century.

Noisome Filth and Stink

Since the eighteenth century, modern urban societies have experienced a number of ontological gear changes with regard to dirt. To begin with, it was accepted as an extension of the farm life from which most migrants would have come. Later it was feared and eliminated with sanitary zeal, although that drive eventually lost its vigour, to the extent that it can be argued, for food in the first half of the twentieth century, that dirt was downgraded as an issue and no longer 'seen' as a threat in the same way as before.[20] Nowadays our views have changed again, to the extent that we recognize a category of 'good dirt' that is important for the development of our immune systems. The collective perception has therefore been subject to considerable change through time.

Norbert Elias demonstrated that changes in concepts of cleanliness closely mirrored the civilizing process. An example he drew upon was the emergence of disgust, which in late medieval Europe can be seen through the lens of table manners. The adoption of cutlery such as the fork, for instance, was due to qualms about eating from a communal dish that had possibly been contaminated by the fingers of others.[21] A second example was the shifts in practices of personal hygiene.[22] In medieval times this was hardly mentioned and, as late as the seventeenth century, bathing was not only unusual but possibly dangerous because it opened the skin to a variety of possible ills. By the mid eighteenth century the elimination of body odours had become a concern and sea-bathing was an increasingly fashionable cure for diseases. In the early nineteenth century washing with warm water was a means of protecting against cholera and eventually the installation of specialized bathroom furniture became a means of establishing status.

Views about the smellscapes of cities also altered. Late eighteenth and early nineteenth-century cities were interpreted in their own era as notoriously dirty

19 For other possible dimensions, see Cohen and Johnson 2005, Cooper 2010.
20 Atkins 2010.
21 Elias 2000: 59, Mennell 1996, Romagnoli 1999.
22 Vigarello 1988.

and smelly.[23] This was at least in part an outcome of the relational development of romanticized visions of rural landscapes, which in comparison made the dirt and disorder of urban areas seem more visible and reprehensible.[24]

Contemporary accounts were rich in descriptions of filthy streets, cramped housing and polluted rivers, and the air quality was poor as a result of coal-burning domestic fires and industrial emissions. Alain Corbin shows that the idea of dangerous odours was nothing new but the miasmic theory of disease grew in popularity in the early phase of urbanization as a 'common-sense' correlation between illness and an increasingly dirty and disordered environment.[25] At the end of the eighteenth century, enquiries into epidemics led to some speculation about the nature of contagion, principally in terms of climate but also increasingly in relation to smells and infectious gases rising from drains, graveyards, slaughter-houses, and city streets strewn with horse manure. By the turn of the century, public health was being rethought through analyses of geographies of dirt, and there were also the first stirrings of an interventionist mentality.

For Stallybrass and White, it was, primarily, the sense of smell that engaged the would-be social reformers; this was because of its apprehension as a pervasive and invisible presence that was difficult to regulate.[26] By the 1830s, animal and human wastes were, as a result, an increasingly important focus of attention.

> Accumulated waste that earlier had been perceived as an unpleasant but unavoidable reality of life in the city now seemed evidence of a vicious, even murderous, disregard for life. Bodily wastes were seen no longer simply as by-products of the life process, but as animated and hostile filth that would, given the chance, attack the body itself.[27]

Sanitary policing in a way was a response to an existential urban anxiety of the early nineteenth century that arose from a realization that cities were at the same time both generative and fearsomely destructive.[28] Meanwhile, the increasing repugnance for manure and excreta was hardly a matter of the uncanny or the unknown. Two million London noses were already attuned to their everywhereness and dread of them was becoming an identity-forming focus for the growing middle class. The dangerous miasm, or imagined filthy and infectious gas cloud that supposedly arose from contaminated earth, was worryingly yet satisfyingly immaterial. Everyone knew it to be there, somehow hovering over the dirtier parts

23 Brown 2001, Gee 2010.
24 Gold 1984.
25 Corbin 1986.
26 Stallybrass and White 1986: 139.
27 Gilbert 2005: 79.
28 For more on anxiety, see Trotter 2005.

of the city, but no-one had ever seen or measured it.[29] It was invisible, intangible, yet deadly.[30]

Miasmic theory provided a plausible explanatory framework in which disease could be linked to both human and animal waste, and this raised in the minds of many people a 'faecal crisis'.[31] We can get a sense of this with a couple of quotations from a key textbook of the day, Copland's *Dictionary of Practical Medicine*. The author's emphasis was upon 'animal exhalations', by which he meant any smells associated with animals and their by-products.

> Certain … causes of disease, of no mean importance, particularly marsh miasmata, and noxious animal exhalations, act directly upon the organic nerves of the lungs, and on the blood itself, through the medium of absorption.[32]

> The putrefaction of animal substances has been supposed by many to occasion disease in those who come within the sphere of the exhalations thus produced, and even to generate a malady which has become infectious, and has, partly thereby, and partly from other concurring causes, prevailed to an epidemic, or even pestilential, extent. It is not, however, merely dead animal bodies, or considerable collections of putrid matter, but also heaps of filth exposed in the streets, or animal excretions and exuviae, subjected to a warm and stagnant air, and neglect of domestic and personal cleanliness, that are thus injurious. These latter may be less energetic agents than the foregoing; but they more frequently exist, and are more common concurrent causes.[33]

In the 1840s, public awareness was raised by a flurry of official reports, such as Chadwick's *Report on the Sanatory Condition of the Labouring Population of Great Britain* (1842).[34] It is in these parliamentary blue books that we can read in most detail about excreta and other animal refuse, including the rotting carcases, body parts and blood that were said to be among the most offensive items of street rubbish. The Royal Commissioners on the State of Large Towns and Populous Districts (1843–5), for instance, found much to complain about with regard to animals. One common observation, reproduced from town to town, was about local arrangements for disposing of manure. It seems that it was the norm around the country to have a dump, or middenstead, for every neighbourhood. In the borough of Sunderland, for instance, they had 182, which were:

> generally situated in the close narrow streets and lanes inhabited by the poorer classes … [sometimes] in the basement floor of a dwelling-house, the

29 Hannaway 1993.
30 Barnes 2005: 117.
31 Hamlin 1998, Halliday 1999, Barnes 2006, Inglis 2007.
32 Copland 1834, vol. 1: 23.
33 Copland 1838, vol. 2: 771.
34 P.P. 1842 (006) xxvi.1.

> upper stories of which are occupied as bed-rooms … The contents of these middensteads are afterwards conveyed to large depots, of which there are two in the parish, one very lately advertised as containing 1,000 tons for sale. This belonged to the borough. It is on the Town Moor, closely adjoining to the most densely populated part of the town.[35]

Likewise, the Select Committee on Buildings Regulation and Improvement of Boroughs (1842) found in Liverpool:

> A great nuisance, and most offensive stench, is caused by the cowkeepers pumping into the street the water from their middensteads, and also by their being allowed to cart away their manure at any time, as they often have to throw it into the carts across the foot-walk. Keeping pigs, either in courts or back-yards, is also a great nuisance, as the draining from the yards generally runs through the passage leading to the courts.[36]

Chadwick's *Inquiry* was pivotal, adopting environmental pollution as a discursive trope of public health and marshalling, in support, a vast collation of empirical observations from around the country.[37] In retrospect, much of this can be described as gothic detail serving Chadwick's ideologically-motivated purpose of alerting the public to a need for radical change.[38] Maintaining a state of shock was certainly a key to building a political consensus for intervention and to establishing the self-confidence to try solutions that were expensive but untested on a large scale. Some brief examples will suffice to illustrate this point, starting with evidence from Greenock about the inappropriate storage of manure.

> In one part of the street there is a dunghill, – yet it is too large to be called a dunghill. I do not mistake its size when I say it contains a hundred cubic yards of impure filth, collected from all parts of the town. It is never removed; it is the stock-in-trade of a person who deals in dung; he retails it by cartfuls. To please his customers, he always keeps a nucleus, as the older the filth is the higher is the price … This collection is fronting the public street; it is enclosed in front by a wall; the height of the wall is about 12 feet, and the dung overtops it; the malarious moisture oozes through the wall, and runs over the pavement.[39]

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35 Royal Commission for Inquiring into State of Large Towns and Populous Districts: First Report, Part I, P.P. 1845 (602) xviii.46.

36 P.P. 1842 (372) x.140.

37 Flynn 1965, Hamlin 1998.

38 But Hamlin (1996) argues that the true motive was for change in management of the Poor Law.

39 Commissioners on Sanatory Condition of Labouring Population of Great Britain: Local Reports on England, P.P. 1842 (007) xxvii.79.

One has to visualize such dung heaps in all British towns and cities, and reading Charles Dickens' *Our Mutual Friend* certainly helps with the necessary leap of imagination. The character Mr Boffin, the 'Golden Dustman', was based upon the life of Henry Dodd, a London refuse collector who made a fortune. The Harmon Mounds in Boffin's Bower at King's Cross were a fictionalized account of one source of his real-life wealth. Thornbury identifies other, similar alps of dust at the sites of what are now Liverpool, Manchester and Argyll Streets.[40] The more manure-specific laystalls and middensteads were also common in London.[41] Cockayne comments, for instance, on one in Mount Pleasant in Clerkenwell that in 1780 covered an astonishing eight and half acres,[42] and in Rotherhithe

> on a piece of land near the viaduct there stands an immense heap of house refuse, covering an acre of ground at least, and forming quite an artificial hillock, the level of the surface having been raised 12–14 feet. The bulk of the heap is composed of ashes with a due admixture of putrefying vegetable matter and fish.[43]

It seems that New York also had its own mountains of rubbish and of manure. The latter, on vacant lots, 'sometimes rose to 40 and even 60 feet'.[44]

In their descriptions of manure, Chadwick and his fellow miasmatists seemed almost to vie with each other to evoke the greatest disgust in the mind of the reader, and they set a hare running that had enough energy to live out the century. Irrespective of the true causes – and attention of course did eventually switch to germ theory and to vectors such as flies – animal dirt and smells were never again acceptable. Even the seemingly indispensable horse came under critical scrutiny towards the end of the century because of the manure it left on the street. In 1894, for instance, there was a flurry of letters to the editor of *The Times* complaining about the streets of London, started by Randolph Churchill:

> The vocabulary of adjectives of a denunciatory kind would be exhausted in endeavouring adequately to describe the uncleanliness, the filth, the pollution of most of the West-end streets … which certainly could not be approximated in their dirtiness by any streets of the same character in any European city … I may remark on the miasma, the nauseating smell, the peculiar character of the dust, coarse, polluted with bad acids, which the eyes, the nose, and the mucous

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40 Thornbury 1879, vol. 2: 278. There were twenty or so laystalls in London. Guy 1848: 73.

41 A laystall was an urban storage space for manure.

42 Cockayne 2007: 190–91. This is now the site of the Royal Mail's Mount Pleasant sorting office.

43 Jephson 1907: 116, commenting on an 1858 report by the local Medical Officer of Health.

44 Morris 2007: 5.

> membrane of those who perambulate the thoroughfares in question have to resist the ill-effect of as best they can.[45]

This nuisance was not confined only to the cities, of course. Dr Franklin Parsons, reporting to the Medical Officer of the Local Government Board in the early 1890s, found that 'the complaints [about manure] have come loudest and oftenest from places of a suburban character situated in rural sanitary districts, and from small towns dependent upon the surrounding agricultural districts'.[46] An undercurrent here was a tension between residents and the local agricultural interests for whom manure was a basis of their livelihoods. Parsons was not in favour of prevention – 'the land must have the manure and the towns must get rid of it' – but he nevertheless sympathized with householders unlucky enough to live downwind of sidings where manure was unloaded for local collection. Swanley Junction, 17 miles from the capital on the London, Chatham and Dover line, was one example. It received 40–60,000 tons of manure a year and many complaints about this were made to the Board. Public meetings and petitions were organized locally to put pressure on the sanitary authority to remove the nuisance. The Board had similar communications from Feltham, Sunbury, Paddock Wood, Marden, Cookham, Egham, Welwyn, Maidstone, Bexley, Sidcup, Dartford, Grays, Milton-next-Sittingbourne and Faversham, all of them receiving London manure by rail or by sea.

These quotations from the blue books can be supplemented by the writings of Medical Officers of Health on their individual districts, and there were also many surveys by concerned individuals and sanitary groups, both academic and charitable. Hector Gavin's book *Sanitary Ramblings* is an example of the enthusiasm of an individual doctor exploring the East End of London on his own account and revealing its scatological topography.

> On the western side of Spitalfields workhouse, and entered from a street, called Queen-street, is a nightman's yard. A heap of dung and refuse of every description, about the size of a pretty large house, lies piled to the left of the yard; to the right, is an artificial pond, into which the contents of cesspools are thrown. The contents are allowed to desiccate in the open air; and they are frequently stirred for that purpose. The odour which was given off when the contents were raked up, to give me an assurance that there was nothing so very bad in the alleged nuisance, drove me from the place with the utmost speed I was master of. On two sides of this horrid collection of excremental matter, was a patent manure manufactory. To the right in this yard, was a large accumulation of dung, &c.; but, to the left, there was an extensive layer of a compost of blood, ashes, and nitric acid, which gave out the most horrid, offensive, and disgusting concentration of putrescent odours it has ever been my lot to be the victim of.

45 *The Times* 1 June, 1894: 14g.
46 Parsons 1893–4: 97.

> The whole place presented a most foul and filthy aspect, and an example of the enormous outrages which are perpetrated in London against society. It is a curious fact, that the parties who had charge of these two premises were each dead to the foulness of their own most pestilential nuisances. The nightman's servant accused the premises of the manure manufacturer as the source of perpetual foul smells, but thought his yard free from any particular cause of complaint; while the servant of the patent manure manufacturer diligently and earnestly asserted the perfect freedom of his master's yard from foul exhalations; but considered that the raking up of the drying night-soil, on the other side of the wall, was quite awful, and enough to kill anybody.[47]

The modern reader may be entertained by the Bakhtinian grotesque of such passages or perhaps nauseated by the detail, but Gavin's intention was somewhat different. Note his use of the word 'nuisance', which was the principal message of the piece. Gille articulated a similar sentiment in saying 'that political struggles have been more and more about the distribution not of goods but of 'bads' that is, environmental and health risks'.[48]

The idea of harm to a person or persons from environmental wrongs had been around for centuries but its legal development matured in the middle of the nineteenth century as a direct result of the problems that we have highlighted. Gradually, nuisance was elaborated into one of the major themes of the common law, to the extent that Christopher Hamlin argues for an emerging Habermasian public sphere rooted in tackling such material problems.[49] Dealing with inconvenient and potentially harmful nuisances was, he says, a breeding-ground of rights and eventually of collective rules about environmental behaviour in democratic societies. The application of public health measures was therefore a site of emergence for the modern state, and the smells and filth associated with animal waste in towns were a focus for the politics of 'us', the citizens, against 'them', the polluters. The mobilization of sentiment against productive urban animals was decisive in the period 1850–1914 and, after that, civic debate would never be quite the same again.

One way to achieve the mass persuasion towards the goal of sanitation was to find moral naturalism and spiritual satisfaction in the outcomes, often portraying dirty environments as bad and their inhabitants as dangerous.[50] One aspect of this was that association with animals – the breath of the beast – brought with it a moral stain. Driver calls this the 'conceptual topography' of environmentalism and it is clear that many of the novels and empirical surveys of the day were setting out to create a distance in the minds of their readers that would enable the identification of the Other – the city's residuum and their animals.[51]

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47 Gavin 1848: 27.
48 Gille 2010: 1053.
49 McLaren 1983, Hamlin 2002, Malcolm and Pointing 2006.
50 Hamlin 1985.
51 Driver 1988, Stallybrass and White 1986: 126.

This excremental vision of the 1840s and 1850s encouraged a language where slum inhabitants could themselves be seen as animals, similar in the conditions of their own sanitation to that of the pigs that lived in their back yards; and it was said to be their self-willed degradation that brought them to such a state of gracelessness.[52] From this moment on, animals were less likely to be thought to have legitimacy as urban dwellers and removing them and their associated nuisances was a way of guiding and disciplining the behaviour of their keepers and controlling a hazardous environment. Since waste in the second half of the nineteenth century was increasingly occupying a liminal world that was dirty, disgusting and distanced, patrols were increasingly mounted at the boundaries of these socially constructed notions of the acceptable.[53] What could be allowed in a city was becoming a matter of bodily purity and animals increasingly were identified with two of the principal sensed transgressions: smell and visible dirt, such as manure.

The concept of a nuisance, as something injurious or obnoxious to the community, had medieval origins.[54] It was usually generated by the dung heap, the privy or the 'noisome' smell produced by one of the so-called noxious or offensive industries.[55] In a sense, nuisance is therefore an early version of 'risk', but an unusual one in that it was subject to calculation and resolution in the adversarial setting of a court, usually the magistrate's court. As a matter of law, complaints about nuisances were costly and therefore restricted as a remedy to those with the time and resources for a court action and to those whose livelihoods did not depend in some way upon the ordure in question.

Hamlin and Hanley identify the 1830s, 40s and 50s as a hinge point in the transformation of nuisance into a principal tool of the public health movement.[56] The reason for this was concern about the spread of cholera, which was feared as no other disease for its rapid and devastating impact. The need to mitigate cholera's possible causes was a light that shone into the darkest corners of insanitary cities and a strongly felt urge to act energized the various types of survey that we have touched on. Epidemic disease was also invested by the common law with a significance far beyond any previous judicial imagination.

For London, the start of parliamentary interest in animal nuisance was the Act for Better Paving, Improving, and Regulating the Streets of the Metropolis (1817).[57] This insisted that any nuisances from pigs, slaughter-houses or 'horse boiling' must be either abated or removed.[58] It also forbade the breeding, feeding or keeping of 'any kind or species of swine in any house, building, yard, garden

52 Steig 1970, Stallybrass and White 1986: 132, Freeland 2002: 801–2.
53 Lougy 2002.
54 Spencer 1989.
55 For the history of industrial nuisances, see Brenner 1974, McClaren 1983.
56 Hamlin 2002, Hanley 2006.
57 57 Geo III, c.29.
58 Woolrych 1863.

or other hereditaments, situate and being in or within 40 yards of any street or public place'.[59] In the same genre, the Metropolis Buildings Act (1844) defined offensive trades mainly with smell in mind: blood boilers, bone boilers, fellmongers, slaughterers of cattle, sheep, or horses, soap boilers, tallow melters, and tripe boilers. But the issue was fudged at this time by postponing for 30 years the provision that would have made it illegal to carry them on within 50 feet of a dwelling house or 40 feet of a public highway.[60]

In the 1840s, while parliament struggled to agree the structure of a comprehensive Public Health Act, it meanwhile passed a Removal of Nuisances and Prevention of Epidemic Diseases Act (1846) that enabled intervention when a nuisance was certified by two doctors as injurious to health.[61] The following year, the Towns Improvement Clauses Act provided provincial local authorities with scope to prevent new slaughter-houses without a licence and they were also given power to establish systems of registration and by-laws.[62] This was permissive legislation, though, as was the Town Police Clauses Act (1847), which in theory prevented the throwing on the street of 'dirt, litter, or ashes, or night-soil, or any carrion, fish, offal, or rubbish' or causing 'offensive matter to run from any manufactory, brewery, slaughter-house, butcher's shop, or dunghill, into any street'.[63] This Act also forbade keeping 'swine in or near any street, so as to be a common nuisance' but its application was sporadic around the country. Similarly, when at last the Public Health Act did reach the statute book in 1848, many of its provisions were aimed only at the districts with the highest mortality rates. These could each appoint a local Board of Health, which then had the power (Section 61) to compile a register of slaughter-houses and prevent the establishment of any new premises of offensive trades without their explicit permission (Section 114).[64] Because it was adoptive, the Act's provisions for the confiscation and removal of dung after a day's notice depended very much on local circumstances, such as the available resources and enthusiasms of individual sanitary authorities.

Another Nuisances Removal and Diseases Prevention Act followed soon after, in 1848, and this gave a fuller definition than before of the role of animals.[65] Section 1, for instance, made it clear that potential nuisances now included the keeping of swine, cattle, or other animals, upon any premises or in any dwelling-house, so as to be a nuisance to or injurious to the health of any person, and the nuisance could

59 Sec. 67–8.

60 7&8 Vict., c.84, sect. 55.

61 9&10 Vict., c.96. Once appointed, a local Medical Officer of Health alone could sign the certificate. It was emergency legislation prompted by the cholera threat. Later, the Sanitary Act (1866) made the names of ten local residents on a certificate the equivalent of a Medical Officer of Health's signature.

62 10&11 Vict., c.34.

63 10&11 Vict. c.89.

64 11&12 Vict., c.63. The definition of offensive trades was the same as the 1844 Act.

65 11&12 Vict., c.123.

come from any accumulation of dung, manure, offal, filth or refuse.[66] There was no identification of general public nuisances, such as smells from offensive trades, however. These continued for the time being to be subject only to private redress in the common law.[67]

John Simon, appointed the first Medical Officer of Health for the City of London in 1848, very quickly established his credentials as a relentless enemy of what he called 'offensive and injurious trades'. He argued in his *First Annual Report* that 'no occupation which ordinarily leaves a putrid refuse, nor any which consists in the conversion or manufacture of putrescent material, ought, under any circumstances, to be tolerated within a town' and he gathered information that provided ammunition for change. Simon gradually persuaded the City's authorities to tighten their regulatory grip on trades such as cow-keeping and slaughter-houses.[68] The Inspectors of Nuisances policed this and gradually the offensive trades were squeezed out of his jurisdiction. Thus, in 1851 there were 135 slaughter-houses in the City, but only 31 in 1873.[69]

> With regard to such trades as are considered to be simply offensive, and where the evidence of injury to health is indirect and uncertain, I can hardly doubt that a wise legislation would exclude them … from the circle of the metropolis. Tallow-melting, whalebone-boiling, gas-making, and various other chemical proceedings, if not absolutely injurious to life, are nuisances, at least in the ordinary language of the law, or are apt to become such. It is the common right of the neighbourhood to breathe an uncontaminated atmosphere; and, with this common right, such nuisances must, in their several degrees, be considered to clash … [70]

Simon's efforts in the City of London were more significant in the history of urban sanitation than is sometimes allowed. Their practical implementation in specific relation to animal industries and their by-products was an example of the domination of nature that made a virtue of its elimination from the humanized urban realm. This was a culmination of the Enlightenment ideals of self-realization, where the separation of 'I' and 'it' became a legitimation of a planned urban landscape, and also of emancipation, which on this occasion was emancipation from the prison of filth-related diseases.[71]

The City of London initiative was taken up under the Metropolis (Local Management) Act (1855) by other London districts, which were now able to

66 Keane 1870.
67 Glen 1849: 5.
68 Simon 1854.
69 Select Committee on Noxious Businesses, Report, P.P. 1873 (284) x.434.
70 Simon 1854: 27–8.
71 Harvey 1996.

appoint their own Medical Officers of Health and Inspectors of Nuisances.[72] In the same year, section 55 of the Metropolis Building Act used the 1844 definition of offensive trades.[73] Those involved were forbidden to put up new premises in London within 50 feet of a house or a public road. It seems that 1855 was a busy legislative year because it also saw the passing of a Nuisances Removal and Diseases Prevention Act that consolidated the Acts of 1846 and 1848. This enlarged the national definition of nuisances along similar lines, and made the enforcement of the law easier by obliging each local authority to appoint at least one Sanitary Inspector.[74]

Here we see the beginnings of the spread of the idea of nuisance regulation as an everyday practical rationality. Coupled with a legislative framework that eventually accessed the possibilities of local sanitary improvement, this amounted to one of the most powerful of the various strands of health-related governmentality in the nineteenth century. Margo Huxley argues that the problematizations of chaos, disease and immorality that dominated thinking at this time amounted to a redefinition of the social, making it an object of state pastoral care for the whole population. In consequence, various new spaces of governmentalization were generated.[75]

Such was the pace of legislation from the 1840s onwards that one might assume that any opposition would have been overwhelmed. While it is true that the moral high ground was with the sanitary reformers, nevertheless there was lobbying from vested interests employing the liberal argument of laissez faire. An example of the tensions that arose was section 48 of the Public Health Act (1858), which repealed the locational restrictions upon slaughter-houses that had been imposed only ten years earlier.[76]

The Metropolis Management Amendment Act that followed in 1862 reaffirmed the powers of magistrates to close pig sties that were 'unfit' and to prevent their keepers from opening new premises.[77] It also introduced a compulsory licensing system for cowhouses and slaughter-houses. Then, a few years later, the 1866 Sanitary Act required local authorities to undertake sanitary regulation and to set out general powers for the abatement of nuisances, along the lines of Section 27 of the 1855 Act for London.[78] Section 53 also gave powers to require the regular removal of manure from mews.

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72 18&19 Vict., c.120.

73 18&19 Vict., c.122, repealed 1874.

74 18&19 Vict., c.121, section 27: 'any candle house, melting house, melting place, or soap house, or any slaughter-house, or any building or place for boiling offal or blood, or for boiling, burning, or crushing bones, or any manufactory, building or place used for any trade, business, process or manufacture causing effluvia'. Keane 1860, 73–4.

75 Huxley 2007.

76 21&22 Vict., c.98.

77 25&26 Vict., c.102.

78 29&30 Vict., c.90. See Michael 1867.

In 1873 the Select Committee on Noxious Businesses reviewed the clause of the Metropolis Buildings Act (1844) which would have closed many of the so-called offensive trades in London the following year.[79] They argued against implementing it, preferring instead new legislation, and the Slaughter-houses Metropolis Act (1874) was the result.[80] This gave the Metropolitan Board of Works the power to make appropriate by-laws and, sure enough, 284 London slaughter-houses were closed in 1875 and 1876.[81]

Soon after, the Public Health Act of 1875 was a landmark in the history of sanitation; it was responsible for creating a fuller set of guidelines on what was deemed acceptable in towns.[82] According to Section 47, penalties were to be imposed upon those creating a nuisance by keeping pigs in a dwelling-house. Section 49 enabled Inspectors of Nuisances to require the removal of any accumulation of manure, dung, soil, or other offensive or noxious matter within twenty-four hours and Section 50 insisted upon the regular removal of manure from mews and stables. Sections 112 and 113 forbade the establishment, without the consent of the urban authority, of offensive trades such as blood boiler, bone boiler, fellmonger, soap boiler, tallow melter, tripe boiler, and gave powers to make by-laws. Section 114 then went on, with regard to these trades and slaughter-houses, to allow complaints about nuisances to be raised by the local Medical Officer of Health, or any two medical practitioners, or any ten local inhabitants. Under Section 169 the possibility of licensing of slaughter-houses and knackers' yards was at last made general and no new premises could then be set up without a licence. Conditions for the issue of a licence included satisfaction of any by-laws on cleanliness, the prevention of cruelty, the removal of manure, and the provision of a proper water supply.

Following the 1875 Act, a set of model by-laws was issued two years later by the Local Government Board with a view to encouraging and enabling local action. These by-laws prevented the location of slaughter-houses anywhere within 100 feet of a house. They also added to the Public Health Act's list of offensive trades the following: blood drier, leather dresser, tanner, fat melter or fat extractor, glue maker, size maker, and gut scraper. According to Reid, the Board's inspectors saw offensive trades as essentially those dealing with animal refuse.[83] As a result, the Metropolitan Board of Works made its own by-laws in 1876 on tripe boilers, knackers, catgut makers; in 1879 on glue and size manufacturers, and blood driers; in 1881 on fat extractors and fat melters; in 1882 on gut scrapers; and in 1888 on animal charcoal manufacturers. Finally, at the end of the nineteenth

79 Select Committee on Noxious Businesses, Report, P.P. 1873 (284) x.433.

80 37&38 Vict, c. 67.

81 Otter 2004: 52. This figure applies to the administrative area of the Metropolitan Board of Works, which was much larger than the City of London referred to earlier.

82 38&39 Vict., c.55. See Husband 1883.

83 Reid 1904: 294. This was borne out when others, such as brick making, were found in subsequent court cases not to be covered by the Act.

century, sections 29–31 of the Public Health Acts Amendment Act (1890) made the length of licences a matter for local authorities.[84] The Public Health (London) Act of 1891 forbade the establishment of any new business of blood-boiler, bone-boiler, manure manufacturer, soap-boiler, tallow-melter or knacker under any circumstances.[85] It also made the length of slaughter-house licences variable, as in the 1890 Act. Following this, in 1893, the London County Council established new consolidated by-laws on offensive trades.

This legislative timeline of good intentions was, of course, very different from the reality of implementation on the ground. Unfortunately, as yet we do not have sufficient research on common law nuisance cases to analyse regional variations of disgust and litigiousness. Nor is it possible to identify the thresholds at which individual urban authorities began to take their regulatory duties seriously. So much of the legislation was permissive in its adoption at the local level that a complex geography of nuisance control is bound to have emerged in the second half of the nineteenth century. We certainly know that this was the case for cow-keeping, as will be shown later. Suffice to say for the time being that the concept of filth, as seen through nuisance, was completely different in 1900 from what had been the case just 70 or 80 years before. The emphasis had moved from private responsibility to action in the public sphere, and both regulation and legal action had shaped the possibilities.

Out of Place, or Constitutive of the 'Urb-an-imal'?

As Fernand Braudel once observed, 'all major bursts of growth are expressed by an urban explosion'.[86] And so it was in the late eighteenth and early nineteenth centuries, when Britain's industrial revolution and trade expansion were responsible for a period of extraordinarily rapid urbanization that was chaotic in many ways. The existing institutions of the local state were unable to cope with the profit-minded savagery of industrial capitalism and the speculative anarchy of residential and commercial land development. These shock cities were not favourably received at the time, the common perception being of a landscape in chiaroscuro, any colour being concealed by fog or washed into the drains along with so much pollution.

Dirt, waste and their synonyms *did* have a place in the eighteenth and early nineteenth centuries. They were not welcomed, still less celebrated, but they were nevertheless acknowledged and valued in the narrow sense. Almost everything in the city was packed with a use value and a re-use value. Wealth and employment were at least in part about making the most of residues,[87] and even a putrefying

84 53&54 Vict., c.59.
85 54&55 Vict., c.76.
86 Braudel 1984: 479.
87 Thompson 1979.

corpse in the River Thames had a value to the boatman in *Our Mutual Friend*.[88] Gaffer Hexam made his living from recovering and selling floating junk but he was only one small cog in a great machine of recycling that squeezed the last drop of worth from redundancy. The most entertaining account of this world is Henry Mayhew's extensive reporting on the characters in the army of sewermen, nightmen, toshers and mud-larks who populated the system in 1851.[89] He made them a knowable community in the sense understood by Raymond Williams – brought to life through literature from the frayed margins of society.[90]

Objects broken beyond repair were eventually allowed to drop out of the city's cycle of re-usage but organic waste could circulate forever in the form of nutrients. Even the street names in London were coined in recognition of this: Laystall Street in Clerkenwell, Maiden (Midden) Lane (there was one of this name between the Strand and Covent Garden and another in Southwark), and Sherborne (Shiteburn) Lane in City of London.[91] There are some similarities between this type of city – populated with animals and seeking to profit from a wide range of organic wastes – and the typical present-day urban experience of the Global South.[92] As Fiona Nunan shows, Indian cities compost much of their waste and use it in urban and peri-urban agriculture.[93]

The animal inhabitants of the new and rapidly changing urban worlds of the eighteenth and nineteenth centuries had a shadowy, liminal existence. Like mythical ogres, these cities were nourished by the sweat of their horses and by the flesh and blood of other livestock. It was as if the manure of these creatures soaked into the streets and fertilized urban growth, and their pain was part of the neural energy of town life. One paradoxical result of the centrality of animals was that the 'country' lived on in the 'city', for it was not until the regulative imposition of ideas of what made a 'good city' that the Great Separation of urban from rural came about in the mind and then on the ground.

> Although the Victorians often lamented the loss of rusticity, the Victorian town would strike us as an incongruous mixture of urbanity and barnyard setting, with town-houses interspersed with stables, pigsties, and slaughter-houses, and where sheep and cows jostled with horse-traffic, and pigs and chickens dwelt in close proximity to human habitations. Thus the town, as artifact, symbolized a rural society in rapid and uncontrolled transition.[94]

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88 Dickens 1865.

89 Mayhew 1851, vol. 2. Curiously, Pike (2005b: 57) sees these waste workers as a deviant challenge to mainstream society, so out of kilter were they with the rapidly rationalizing, modern city'. See also Scanlan 2007.

90 Williams 1973: 165.

91 Ackroyd 2001: 339.

92 Prain et al. 2010.

93 Nunan 2000a, 2000b, 2000c.

94 Wohl 1983: 82.

To adapt David Harvey's much quoted comment, not only was there nothing unnatural about London in 1840, but we may say that this was a high point of the working and food-producing urb-an-imal and therefore of a certain type of urbanized nature.[95]

The presence of animals was not, then, an accidental oversight of citizens who at some point would come to their senses and discover the true essence of urbanism. Rather, it is possible to argue that animals were constitutive of a certain stage of the urban. They facilitated growth, they fuelled it, and they provided an essential continuing link with the parallel rural economy. The facilitation was that the vast growth of cities in the nineteenth century, and the transition from walking cities, was predicated on horse-drawn transport: buses and trams, hansom cabs and private horses. The electric trams in the 1890s and motor vehicles from the middle of the following decade together wrought a transition to a new kind of city, without animal sweat and smells as the taken-for-granted lubricants of daily lives; but the transition was gradual – it took several decades.

Back in 1840 it had been clear to all concerned that the vast quantities of animal dung and human sewage produced by rapidly growing cities either had to be used up or disposed of. Allowing accumulations in residential neighbourhoods was no longer acceptable. It so happens that this was the year that Justus von Liebig introduced his mineral theory, which argued that soil fertility in Western Europe was gradually declining as a result of the extraction, without replacement, of nutrients in intensive farming systems.[96] Marx called it the 'metabolic rift' in the relations between humans and their environment.[97] Liebig then went on to suggest that both animal manure and human sewage should be used to redress the imbalances in soil chemistry where they were appearing.[98] Following his lead, within a few years, books began appearing on the subject of 'muck' in Britain, America, Sweden, France and Germany, popularizing Liebig's message that it was important for the future health of the land and the productivity of agriculture.[99]

Along with Liebig and the visionary and artist, John Martin, Edwin Chadwick was a principal advocate, from the 1840s onwards, of solutions to create wealth from sewage. He envisaged a holistic, utilitarian system that would transport both solid and liquid sewage to conveniently located farms, where crop fertility could be enhanced.[100] The net cost to society of building sewers would therefore be minimized by cross-subsidy. But the peak period of the idea of sewage irrigation coincided with a national railway bubble in Britain, and investment

95 Harvey 1996: 186.

96 Liebig 1840.

97 Foster 1999: 380.

98 Mårald 2002, 2006.

99 Dana 1842, Falkner 1843, Müller 1860.

100 John Martin was a visionary artist and engraver of apocalyptic Old Testament scenes such as *The Great Day of His Wrath* (1853). In 1842 he proposed a sewage system for London.

enthusiasm was never strong.[101] There were some trial schemes but never any proof that an infrastructure of pipes to carry the sewage into the countryside would be worthwhile.[102] An alternative, pioneered in several continental cities, was to take sewage to conveniently located factories for drying and concentration into a product such as the 'poudrette' that supported a small industry in Paris.[103] Although the experimental drying technology was tried in several countries, the promised profits did not materialize. This was, after all, a bulky, low-value product that farmers found to be a disappointing fertilizer and certainly one inferior in every way to fresh animal dung.[104] The manufacture of cheap chemical fertilizers and the importation of cheap grain from North America were other reasons why the organic recycling of human sewage failed to catch on but it is interesting that Liebig himself was still supporting this lost cause in the 1860s in letters to the Lord Mayor of London. Through these, he opposed Bazalgette's elaborate scheme to gather the city's waste through a complex system of interception sewers and pump it into the Thames downstream of the urban area.[105] For Liebig,

> if it were practicable to collect, without the least loss, all the solid and fluid excrements of all the inhabitants of towns, and to return to each farmer the portion arising from the produce originally supplied by him to the town, the productiveness of his land might be maintained almost unimpaired for ages to come, and the existing store of mineral elements in every fertile field would be amply sufficient for the wants of the increasing populations.[106]

In *Les Miserables*, published shortly after, in 1862, Victor Hugo expressed a similar sentiment about Paris, in prose that was rather more lyrical than Liebig's:

> A great city is the most mighty of dung-makers … All the human and animal manure which the world wastes, restored to the land instead of being cast into the water, would suffice to nourish the world. Those heaps of filth at the gate-posts, those tumbrils of mud which jolt through the streets by night, those terrible casks of the street department, those fetid drippings of subterranean mire, which the pavements hide from you, – do you know what they are? They are the meadow

101 For accounts of the irrigation of pastures in Edinburgh, see Smith 1975 and Hamlin 1994. Note here that sewage irrigation around Paris accounted for 12,600 acres as late as 1900 and was generally thought to be a model of intensive agriculture. There were also large schemes around Berlin (17,000 acres) and Milan (22,000 acres). Kropotkin 1892, Brooks 1905, Reid 1991, Barles 2005b.

102 Sheail 1996, Goddard 1996.

103 Reid 1991, Barles 2005.

104 Sheail 1996: 194–6, Mårald 2006. There were also concerns in the new era of bacteriology that human sewage might recycle waterborne diseases through crops, especially vegetables.

105 Brock 1997.

106 Liebig 1863: 274.

> in flower, the green grass, wild thyme, thyme and sage, they are game, they are cattle, they are the satisfied bellows of great oxen in the evening, they are perfumed hay, they are golden wheat, they are the bread on your table, they are the warm blood in your veins, they are health, they are joy, they are life. This is the will of that mysterious creation which is transformation on earth and transfiguration in heaven. Restore this to the great crucible; your abundance will flow forth from it. The nutrition of the plains furnishes the nourishment of men. You have it in your power to lose this wealth, and to consider me ridiculous to boot. This will form the masterpiece of your ignorance.[107]

Right through to the 1860s and later, then, we can find the idea of life fertilized, revived, reborn from waste.[108] According to Davison, this became an organic metaphor for the wholeness of life and the discourse of recycling on these lines is, of course, also one familiar to us in the early twenty-first century.[109] It rejects the negative connotations of ordure and celebrates the opportunity of creating circuits of resource sustainability. With regard to the food supply, it was easy to understand the possibilities of re-using waste materials, such as animal manure and body parts, since the energy and potency of animals would surely translate somehow into soil fertility. This was a key link with the rural: the recycling of materials from cities such as London and Paris to market gardens and farms within the range of horse-drawn cartage.

What ultimately undermined this phase of animal-constituted urbanism, which we might say lasted from the mid eighteenth century to the end of the nineteenth, was dirt and smell. Inevitably these were associated with the living animals in cities: both the draught horses and the food-producers, such as milch cows and pigs. They were also consequent upon the urban location of many noisome factories processing animal by-products: blood, fat, bones. Together these presented a challenge to the sanitary movement, particularly from the 1840s onwards. As Allen has pointed out, it was

> the specific and, at the same time, capacious definition of filth in the period [that] gave rise to an equally specific and capacious definition of purity. Victorian filth, we might say, created sanitary reform; that is, the particular way in which the Victorians imagined filth lent itself to a way of imagining purity that took shape as Sanitary reform … Sanitary reform was thus uniquely suited both to conditions on the ground and to the metaphoric meanings that had accrued to filth in the nineteenth century.[110]

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107 Hugo 1887: 84.

108 Cohen 2005. According to Simmons 2006: 75, 'excrement emerged in this period as the centre point of a brand of French anticapitalism'.

109 Davison 1983.

110 Allen 2008: 15.

Urban Farming

When I visited India for the first time in 1987 I was surprised to find compounds of dairy buffaloes close to the centre of Madras (now Chennai) being kept in conditions resembling those in the villages of the deepest countryside. Urban planning and food regulation have made strides in India since then but there are other countries in Africa and Asia where fresh animal food production in urban settings is not only tolerated but actively encouraged. The urban farming movement is a strand of thinking about development that argues for greater food self-sufficiency among city dwellers, and there is now abundant research suggesting that cultivating roadside verges and keeping livestock on unoccupied lots can make a substantial contribution to tackling poverty and also eliminating transport costs on food that has to be brought from distance. At present about 800 million people worldwide are involved with urban and peri-urban food production, of whom 200 million produce for the market.[111] In Cuba, 80 per cent of horticultural output is urban-based.

I am not trying here to claim that there are strong parallels between British Victorian cities and the Third World today. But the mismatch of 'urban' and 'agriculture' in modernity came to be thought of as so strong that it is important to remind ourselves that alternative urbanisms *are* possible, where animal keeping is not outlawed. In particular, there is a range of hybridities of nature and society demonstrated that is worthy of deeper investigation than there is time for in this chapter.[112]

At the peak of urban animal food production in Britain, in the mid nineteenth century, there was a mixture of outrage and amusement expressed by contemporary commentators about this phenomenon. The anger is represented by Thomas Beames' account of cowsheds in Whitechapel, in London's inner East End. He suggested that 'few nuisances are greater than these' and that

> animals, fed upon improper food, give milk scarcely fit for use, their sheds reek with an abominable odour; and not long since the public mind was disgusted with an account of cows kept … in Whitechapel, in underground sheds, where, for a long time, they never saw the light of day. This was scarcely so bad as the nuisance pointed out in … the Berwick Street district, where a cow-house, surrounded on all sides by buildings, harbours not only on the ground, but even first floor, a large number of cows and pigs. Such intramural dairies should surely be removed.[113]

In a more satirical register, George Sims recalled a court case in London, where

> some time ago a man was charged with assaulting his wife, and at the magisterial hearing it was elicited that the matrimonial quarrel was all on account of a

111 Waters-Bayer 2000, Santandreu et al. 2000, FAO 2010.

112 For further development of this topic, see Atkins 1977, 1978, 2003.

113 Beames 1852: 213.

Table 2.1 Cow numbers in London 1718–1914

Source	Cows	Source	Cows
Bates 1718: 84–5	4,000–6,650	AR 1867	9,753
Anon. 1793: 532	8,750	AR 1869	11,850
Foot 1794: 84	8,500	AR 1870	11,992
Middleton 1798: 301, and 1807: 417	8,000	AR 1874 AR 1877	14,702 12,624
Hunter 1811: vol. 2, 3	8,500	AR 1877	12,624
Loudon 1826: 1083–4	9,119	AR 1878	13,650
Youatt 1834: 255	12,000	AR 1879	13,863
Anon. 1834	9,600	AR, MBW 1880	13,000
Milburn 1851: 70	12,000	AR, MBW 1885	10,701
Poole 1852: 227	24,000	AR, LCC 1890	8,416
Timbs 1855	13,000	AR, LCC 1895	5,666
Anon. 1856: 674	17,000	AR, LCC 1900	5,050
Anon. 1858: 91	11,818	AR, LCC 1905	4,262
MOH Repts 1862	19,231	AR, LCC 1910	3,055
Morton 1865: 74	18,355	AR, LCC 1914	2,697

Notes: AR: Agricultural Returns and Statistics; MBW Metropolitan Board of Works, Annual Reports; LCC: Annual Reports of the London County Council

> donkey which slept under the bed. The magistrate was naturally astonished. He didn't believe such a state of things possible. Doubtless his wonder was shared by the public. The presence of a donkey in the apartment of a costermonger and his family is, however, by no means rare, and quite recently a zealous sanitary inspector has discovered a cellar inhabited by a man, his wife, three children, *and four pigs.*[114]

In a sense, it did not really matter whether such stories were true or apocryphal. By the time Sims was writing, the public had long since made up its mind that live food animals and cities did not mix. But economic historians have shown us that the scale of urban production continued to be quite remarkable. Table 2.1 indicates that in London the number of town cows peaked at over 20,000 in the 1850s, before the cattle plague of 1866 devastated their numbers.

The economic justifications for this urban activity were, first, that milk was highly perishable and therefore often in poor condition when brought by rail from distant farms, and, second, that the problem of adulteration of milk with added water was so rife that consumers had more trust in their neighbourhood suppliers than in anonymous rural producers. A third point is that many cowkeepers were themselves rural migrants for whom the milk trade was both a continuation of

114 Sims 1883: 42.

rural skills and a way into the otherwise alien metropolitan economy. In the case of London many were Welsh, particularly from counties such as Cardiganshire. For them, it seems that urban animal keeping was just one strand of an urban way of life and cultural context that was based upon mutual support, Sunday chapel, and in many cases, the Welsh language.[115]

The cows producing milk in London were high-value, high-yielding animals that were profitable enough to justify the expense of the fodder and the overheads of a city location. Generally they were not kept for long and, as soon as their milk began to dry off, they were fattened and sold to the butcher. In order to minimize the cost of inputs, some cowkeepers bought spent grains from breweries and distilleries.[116] These 'slop' or 'swill dairies' were also common in America, but there they attracted a great deal more adverse comment than in Britain.[117] John Mullaly gave a description of such a swill dairy on Sixteenth Street, New York City, between the Tenth Avenue and the North River, that disgusted many of his readers. Following the publicity he generated, swill dairies were banned from New York in 1873.

> The buildings and ground are owned by Mr. Johnson, the proprietor of the distillery adjoining, from which the cattle are supplied with the swill or slop. There are, properly speaking, three stables running parallel with each other, from the avenue to the river … Their length is from five hundred to seven hundred feet, and each one is made to contain between six and seven hundred cows. Their appearance outside is anything but inviting, and the stench can sometimes be perceived at a distance of a mile; but the exterior, disgusting as it is, conveys no adequate conception of the interior. The cows are ranged in consecutive rows, of fourteen or fifteen to a row, and are separated by wooden partitions which do not extend further than the animals' shoulders. At the head of each row is the trough which contains the swill, and to one of the boards which forms the framework immediately above this, the cows are secured by a rope fastened round their necks. The unfortunate animals are so placed as to be almost constantly over this trough, except when lying down; and even that position, instead of affording them rest, only subjects them to a new torture, for the ground floor of these stables is saturated usually with animal filth. It is almost needless to state that stables kept in this condition cannot be wholesome, and that the atmosphere which pervades them would, of itself, be sufficient to taint the milk, and render it unfit for use … The swill is a strong stimulant, and its effect upon the constitution and health of the animal, is something similar to alcoholic drinks upon the human system. Of this swill, each cow drinks about twenty five or thirty gallons per day, so that the total consumption in the stables is about fifty or sixty thousand gallons. The quantity of milk given upon this

115 Francis-Jones 1984, Jones 2001.
116 Youatt 1834: 255, Ballard 1878: 134–5, Mathias 1952.
117 Hartley 1842, Buckland 1867.

> food, varies from five to twenty-five quarts daily, that is, in every twenty four hours. The cows are milked twice, once at three o'clock in the morning, and once at two or three in the afternoon.[118]

Paris was another city that was home to many milk producers. There were 305 laitiers-nourrisseurs in 1879 and by 1892 this number had grown to 490,[119] with a further 1500 in the surrounding peri-urban area. Many were migrants from the Auvergne, often living in families well established in the city, for instance in the fifteenth and eighteenth arrondisements.[120] Table 2.2 shows a growth in Parisian cowkeeping, in apparent contradiction of the trend in London, but the expansion of the former by boundary adjustments in 1860 meant the inclusion of some existing milk producers. As a result, the proportion of the supply coming from the city itself increased to 16.6 per cent. This compares with London's 80 per cent own production in 1850, falling to 28 per cent in 1880 and three per cent in 1910.

Table 2.2 The milk supply of Paris, 1843–69

	1843		1854		1869	
	Litres (mn)	**%**	**Litres (mn)**	**%**	**Litres (mn)**	**%**
Rail	0	0	59.1	54.1	81.2	72.7
Road	63.1	88.3	41.8	38.2	12.0	10.8
City	8.4	11.7	8.4	7.7	18.5	16.6
Total	71.5	100.0	109.3	100.0	111.8	100.0

Source: Husson 1876

Two examples of knowledge-framing are important here. First, in the mid nineteenth century, milk producers in London believed that milk yield could be maximized in warm cowsheds. As a result, their buildings were often poorly ventilated. With this tended to go bad lighting, poor cleansing and drainage, and the lack of a clean water supply. The dilapidated cowsheds that were everywhere to be seen in 1850 were the perfect environment for the circulation of airborne cattle diseases and the accumulations of manure became a stand-out target for the sanitary conscience.

The Victorian interest in air quality and air circulation that had started with worries about miasmas and malaria later saw physical outcomes in the regulation of the air space available to town cattle. This was partly about the diseases

118 Mullaly 1853: 43–6.

119 There were 2,300 city cows in 1843, rising to 5,065 in 1873 and 6,850 in 1892. Husson 1876, Phlipponneau 1956.

120 Phlipponneau 1956.

Figure 2.1 Urban cowshed

Source: Savage 1912, 245

that were rife among these confined animals, such as tuberculosis and pleuro-pneumonia, although there was no understanding until the last decades of the century of the true mechanisms of infection. The criterion used was the cubic space in the cowshed available per cow and 400 cubic feet was a rule of thumb in the 1870s for many local authority inspectors. This was considered inadequate by others and figures such as 600, 800 and even 1,000 cubic feet were bandied about. Later, the Milk and Dairies Order (1926) shifted the emphasis away from cubic space and over to the cowshed conditions necessary for the production of clean milk.[121] By that date urban milk producers had been forced by the implementation of the Dairies, Cowsheds and Milkshops Orders to provide better structures and suitable ventilation. Figure 2.1 is a photograph taken in Colchester that proves that primitive urban facilities still remained just before the First World War.

The second knowledge departure was entomological. This was the better understanding of the ecology of the house fly and its relationship, in particular, to horse manure. Dawn Day Biehler's work on American cities indicates that entomology began to have an impact upon the imaginary of sanitation there in the last year or two of the nineteenth century.[122] This followed an outbreak of typhoid in Washington, DC in 1895, when a link was made with outdoor privies where flies were breeding. The first decade of the new century saw an emerging

121 McVicar 1935: 58.
122 Biehler 2010.

perception of a 'fly menace', particularly through a connexion made between flies as a disease vector and the infantile diarrhoea that was thought to be the result of babies consuming infected milk. This emotive link sparked research in Britain and a number of official and academic publications identified flies as a hazard.[123]

Given the increase in city horse populations on both sides of the Atlantic in the second half of the nineteenth century, it seems likely that their manure did indeed contribute to a growing house fly population, and to an intensification of bacteriological flows.[124] We know from other work that this was a period when many middle class women were giving up breast feeding and switching their infants over to cow's milk fed from bottles. Given their design, which often included a long rubber tube, these feeding bottles were easily contaminated by flies or dirt and difficult to sterilize. Flies will therefore have been one risk factor among the many faced by these babies.[125]

The development of these two ideas in the context of popular understandings about urban farming exemplifies the importance of established belief systems and their collision with the new sciences that were finding their feet at this time. By the 1880s and 1890s the germ theory of disease, and the bacteriological work of Koch, Pasteur and others, ushered in startling new understandings of the dangers of dirt and the nature of disease vectors, but these were widely derided or ignored at first. In the case of cowsheds, what mattered most was the view of the local Medical Officers of Health about bacteria in the milk, and their willingness to demand action by their local authorities. No doubt local lobbying was a factor, although evidence for this is sparse. The Metropolis Management Amendment Act (1862) provided a framework in London for sanitary authorities to begin a system of licensing, and then individual premises could be closed or stringent conditions applied to the renewal of a licence at the annual petty sessions.[126] The reality, though, was that only the wealthy districts in the West End had the political will to carry out the spirit of these provisions and the smells and other associated nuisances continued for decades in other parts of London. The rest of the country had to wait until the Contagious Diseases (Animals) Act of 1878, which made provision for national regulation.[127] This unfolded in a series of Dairies, Cowsheds and Milkshop Orders (1879, 1885, 1886, 1899), which gradually tightened the noose around the neck of urban milk production.[128] Inspections of premises increased and there were more objections at licensing sessions, so that cowkeepers were forced to make expensive changes to their buildings and their methods. Since margins in the milk trade were already tight, eventually many producers were forced out of town or out of business.

123 Hamer 1910, Niven 1910, Hewitt 1914.
124 Morgan 2002.
125 Dwork 1987: 45–9, Atkins 1992.
126 Atkins 1977.
127 41&42 Vict., c.74.
128 Dumsday 1923.

In London, it was the authorities in the East End who seem to have been the most tolerant of cows and pigs. Food production was a significant activity in districts such as Whitechapel and Bethnal Green, both poor areas, where sustainable livelihoods could not be taken for granted. Also, here the inhabitants of the slums were much less vocal about environmental hazards than their more comfortable and articulate counterparts in Belgravia and Mayfair, and the low rateable value of property in the East End meant that the Sanitary Authorities had less income to invest in inspectors and prosecutions. In other parts of the country there were also variations of practice. In most cities, cowkeepers continued longer than in London. In Liverpool, for instance, there were still 1,000 'urban' cows as late as 1956, and this was undoubtedly because of the Corporation's conviction that the cattle under their control were less likely to be diseased than those based rurally.[129]

We mentioned above the use of spent grains from breweries and distilleries in the feeding of town cows. These waste products were also fed to pigs and in the 1730s there were said to be 50,000 fattened in London principally using this input. Farmers in the Home Counties were concerned at what they regarded as this unfair competition because they were unable to compete with such intensive feeding.[130] Middleton found soon after, in 1807, that the 50,000 pigs were adding a value of £4 each, which represented about 20 per cent of the distillers' annual net profits. The main market for pigs fed this way was victualling contracts for the Royal Navy but they also made a contribution to the amount of pork and bacon sold nationwide. By 1798 neat cattle were also being fattened at distilleries and the system had become a very profitable sideline for the distillers and brewers, more so for the former, whose spent grains were nutritionally richer.[131]

Pigs were also common in early nineteenth-century cities.[132] They were relatively easy to manage and did not need a specialized diet. In fact, they were ideal as a seasonal protein supplement for urban working class diets. Hector Gavin found that they 'abound everywhere' in Bethnal Green in the East End of London; and Hendrick Hartog similarly observed that they 'wandered the streets of early New York City, just as they have wandered the streets of many pre-industrial cities, prowling in grunting ferocity'.[133] In 1816 the first ordinance was made in New York that pigs found in the streets could be taken to a public pound, but it was not until the scare which went with the 1849 cholera epidemic that pig-keeping came under serious threat there.

Back in the United Kingdom, in 1843 in Birmingham, Aston and Edgbaston there were said to be 2,359 separate pig sties, housing 3,375 pigs and indicating

129 Hill 1956, Lambertsen 1989.
130 Mathias 1952.
131 Middleton 1798: 327, 375, Middleton 1807: 579, Stevenson 1809: 522.
132 Tremante 2000, Malcolmson and Mastoris 2001: 74.
133 Gavin 1848: 87, Hartog 1985: 901–2.

Figure 2.2 A London sheep-fold

Source: Godwin 1859: 15

a profitable domestic pass-time.[134] Accurate figures would have been difficult to come by, however, short of the kind of house-by-house survey that was beyond the resources of the sanitary authorities. Householders themselves would certainly not have voluntarily declared such livestock for fear of intrusive inspections and fines.[135] This is why we should not place too much credence in the list of 412 piggeries, probably an underestimate, compiled for the Borough of Sunderland at the same date. But there is a ring of truth about the statement that 'the piggeries are chiefly in the most confined and ill-ventilated localities'. This was the case in many other cities too.[136] Stewart and Jenkins noted that the presence of hundreds of piggeries was selected as a battle ground by a new Medical Officer of Health in Leeds in the 1860s.[137] He was not wholly successful, though, because a 'Pig Protection Society' was formed and support for it came from local politicians and

134 Second Report of the Commissioners for Inquiring into the State of Large Towns and Populous Districts, P.P. 1845 (602) xviii.132.

135 Archer 1865: 14.

136 Ibid: 554.

137 Stewart and Jenkins 1867: 41.

even a judge, who ruled that the pigs could remain but their manure had to be removed on a daily basis.

As late as 1876, after much nuisance legislation, Edward Ballard of the Local Government Board commented in that pig-keeping was still reported as a frequent nuisance in the Medical Officers Health annual reports from all over the country: 'it is a nuisance notorious in every town, and nearly every village in the kingdom'.[138] This was because pigs were fed on waste scraps and their sties were allowed to become filthy.

In theory the problem had been soluble in London since 1817, when an Act forbade the breeding, feeding or keeping of pigs within 40 yards of a street.[139] Soon after that, in the 1820s, though, 'The Potteries', a district in North Kensington, developed as a shanty town occupied by a marginalized community.[140] Amongst the many means of scraping a living there was pig-keeping and at one point there were about 3,000 animals on just nine acres. This was to the great consternation of the people moving into the new middle class housing estates nearby.[141] The area, nowadays known as Notting Dale, was poorly drained clay soil, part of which had been dug for brick-making. It was one of London's 'shy neighbourhoods', to some extent a no-go area, that nevertheless served a purpose.[142] Apart from fresh meat, it provided the scullery maids, night-soil men, chimney sweeps, wet-nurses, laundry women, and other services required by the surrounding villas.[143] In return, the pig keepers took the slops from their kitchens as a cheap, readily-available feed.[144] It was not until the 1870s, with the appointment of an energetic and determined Medical Officer of Health, Dr Thomas Orme Dudfield, that the pig numbers began to fall and finally they disappeared from Kensington altogether in 1878.

The Great Separation

Part of the gloom surrounding the 'bacteriological city' of the mid nineteenth century was that no-one thought easy solutions were at hand.[145] Edwin Chadwick, the unofficial talisman of the sanitary movement, discovered this when in 1854 his career foundered on political resistance and personal antipathy from several quarters; and later in the same decade it took the Great Stink of 1858 to unlock the possibility of a comprehensive system of sewers for London. But maybe the

138 Ballard 1878, Part I: 134–6.

139 An Act for Better Paving, Improving and Regulating the Streets the Metropolis, 57 Geo III, c. 29, sec. 68.

140 Sheppard 1973.

141 [Wills] 1850: 463, Ritchie 1858: 14.

142 Dickens 1860.

143 Malcolmson 1975, Dyos and Reeder 1973: 372.

144 Hollingshead 1861: 157.

145 The term 'bacteriological city' is from Gandy 2004, 2006a.

greatest challenge of all was in the minds of ordinary people: the need to convince them that the environmental version of public health being sold to them was worth the cost. To make that feasible was a matter of, in Schoenwald's telling phrase, the 'training of urban man'.[146] In other words, it would be necessary for society to make the major psychic leap of personal discipline needed to live in modern cities. Gallagher gives this threshold a degree of metaphysical weight that 'is difficult for us to recapture'.[147]

One way of demonstrating the progress of cultural shifts of this sort is through art. In the 1830s and 1840s the urban environment was seen as so foul that it became a supporting plot line in novels such as *Oliver Twist* and *Bleak House*.[148] Here was the paradoxical 'attraction of repulsion' that Dickens himself later talked about.[149] Literary analysts have suggested that authors were reflecting a general environmental wariness that lasted for several decades, from the 1830s to the 1850s. But Janice Carlisle confirms that the literary social conscience did eventually move on.[150] The suffocating stink of the Davenports' cellar in Elizabeth Gaskell's *Mary Barton* or the smells in Charles Kingsley's *Yeast*, both published in 1848, had disappeared in the novels of the 1860s.[151] By then ordure was coming under control and could even be seen plausibly as a source of wealth, as in *Our Mutual Friend*.[152] Interestingly, Trotter has observed that artists also began removing any hint of dirt, rubbish or waste from their paintings, reflecting society's view of the proper subject for modernity.[153]

In addition to this cultural context, John Pickstone has argued that the sanitary idea itself was the product of an intellectual revolution in London.[154] Counterfactually, the dominance of Whig medicine in 1800 and its attitudes to fevers could have continued but instead it was overtaken by a dissectionist, physicalist paradigm, into which Chadwick's utilitarian theories fitted neatly. This was an empiricist critique of Enlightenment medicine and it sought a radical break with assumed correlations between poverty and disease. In Pickstone's view, then, the sensory environment provided the evidence that fuelled this intellectual shift, although it was not in itself a *sufficient* cause of the changes in public health thinking.

Once the sanitary idea had taken root, the move from what John Simon called the 'cesspit city' to a sewered city was gradual.[155] It had begun, in effect, with

146 Schoenwald 1973.
147 Gallagher 1989: 359.
148 Dickens 1838, 1853.
149 Forster 1872, Collins 1973: 537.
150 Carlisle 2004: 15.
151 Gaskell 1848, Kingsley 1848.
152 Dickens 1865.
153 Trotter 2000: 324–5.
154 Pickstone 1992.
155 Wohl 1983: 89.

the establishment in 1847 of a Metropolitan Sewers Commission, and progressed through many controversies. Three of the most important of these debates were whether pipes were better than brick-built sewers; what the optimum diameter of a pipe was; and whether sewers should be flushed with water.[156] In 1848 there were only 104 miles of piped sewers in the whole country but this had increased to 2,600 miles by 1854.[157] Despite the end of Chadwick's official career in the latter year, this was an idea that took off.[158] Ironically, in London it was one of Chadwick's critics, Joseph Bazalgette who was ultimately responsible for the victory of integrated sewer systems, in the shape of his colossal dendritic scheme of subterranean engineering, completed in 1875.[159] This created a new type of networked urbanism that was organizationally complex and expensive to maintain.[160] This was a re-formed 'metropolitan nature' that replaced earlier, organic understandings.[161] The sewers were the first of the technological networks that ultimately have become 'constitutive parts of the urban' and 'mediators through which the perpetual process of transformation of Nature into City takes place'.[162] The establishment of the sewered city amounted to 'an aggressive modernization of underground space' that required a greater centralized control and a biopolitical gaze.[163] The intellectual commitment to this path among the several alternatives was a utilitarian calculation embedded in a great leap of faith: 'Chadwick and company rejected work, wages, and food to focus on water and filth, arguably the greatest "technical fix" in history'.[164]

Here, potentially, then, was the materialized expression of the metabolic circulatory processes that previously had only informally been articulated.[165] It was made possible by improved pipe technology, by a continuous flow of water under pressure, and by the sheer willpower of sanitarians to shed public light on what had hitherto been the private matter of excretion. There were many consequences for the emergence of a new way of knowing the city. As Gilbert has shown, gravity-fed sewers were dependent for their planning upon detailed and accurate topographical surveys and so the mapping and discovery of urban space was at least partly achieved through this concern with dirt.[166] In London the chosen

156 Hamlin 1992, 1998.

157 There were 40 miles of sewers in Paris in 1830, 130 miles in 1850, and 348 miles by 1870. Williams 2008.

158 Finer 1952: 451.

159 Green 1956, Halliday 1999. See also Knaebel 1988, Tarr 1988.

160 Graham and Marvin 2001.

161 Gandy 2004.

162 Kaika and Swyngedouw 2000: 1.

163 Allen 2008: 42.

164 Hamlin 1998: 13. Chadwick's certainty that destitution was not responsible for disease came from his administration of the new Poor Law. He was converted to the new creed of sanitarianism in 1838.

165 Swyngedouw 2006a: 114.

166 Gilbert 2005: 79.

cartographic scale of five feet to the mile was the largest used up to that point and 250 military surveyors were required to complete the job.[167]

Matthew Gandy rightly sees sewers as 'one of the most intricate and multi-layered symbols and structures underlying the modern metropolis'.[168] Their retreat underground to a location in the 'urban uncanny' was associated with the anxieties of displacement and disorientation. This was at one of the sharpest boundaries between environment and society. It was a space of debasement and, for the general public, one that enabled a collective amnesia about bodily wastes.[169] Sewers are therefore dialectical to mainstream society on the surface.[170]

> The underground fascinates not merely because it contains all that is forbidden, but because it contains it as unimaginably rich, albeit inchoate and intoxicating, brew of other times, places and modes of being in the world, and because that brew intimates the fragility of the unity claimed by the world above.[171]

The sewered city fixed in the landscape an ideology of managing a disordered natural.[172] But this was by no means a straightforward social construction of ideas, representations and spaces. As we have seen, the materiality of dirt had been difficult to conceptualize and its hazardous presence had been slippery in its complexity. Above all, the technologies and performances of sewering were bitterly contested, so much so that physical outcomes varied from city to city. In being tamed and brought under control, many new natures and sub-natures were created, flaking away from modernity's points of impact. These were slivers and fragments of a subjected nature, but nature nevertheless. Victorian society's attempts to cleanse and purify were always short of their intended mark and its cities continued to swarm with non-human life, including nature re-introduced under controlled conditions, such as urban parks, roadside trees, zoos and companion animals.[173] This was a 'permanent and irreducible pluralism' of natures in the sense set out by Bauman.[174]

Raymond Williams saw the process of urbanization as a key site of the transformation of nature through social relations and David Harvey took this further by showing that it was through ecological transformations in the city that social relations are consolidated and reproduced.[175] The meanings of nature are, of course, multi-layered, but sewers, it seems, were a nodal site of re-imagining and

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167 Dobraszczyk 2007.
168 Gandy 1999: 24.
169 Hawkins 2003.
170 Donald 1999, Williams 2008.
171 Pike 2005a: 197.
172 Oliver 2000.
173 Green 1990, Gandy 2006b.
174 Bauman 1988: 225.
175 Harvey 1996: 94.

re-forming the meanings that became our modern understandings of what a city is, or what it should be. Cities without sewers came increasingly to be thought of as inferior, and maybe not real cities at all.

The division of nature and culture did not begin here, of course, but the mid and late nineteenth century was a crucial hinge point.[176] Noel Castree talks about the hybrid that is socio-nature.[177] His point is partly philosophical since it has become possible, he argues, to work towards relational understandings that have elements of both environment and society, fused in networks of actors. Fashionable jargon such as Actor Networks or assemblages aside, there is impressive momentum in such posthuman approaches. But Castree's other point here is that hybrids of culture and nature have become increasingly popular with academics and the general public as the realization has dawned that the impact of modernity has been so negative, through pollution, carbon emissions, and reductions in biodiversity, that the future of the planet is under threat. Rediscoveries of society-nature linkages and the recreation of new versions of lost or degraded natures have therefore become foci for green enthusiasms.

Our version of this history has been to push it back to the nineteenth century. If postmodernity has empowered us to rethink and encourage difference and hybridity in recent years, then what of the early decades of 'modern' ways of thinking about environmental bads? There were polluted and degraded environments in and around Victorian cities but the response at the time was very different. It was to separate out thinking about nature and to produce and reproduce it in ways that could be made over within the hegemonic ideological models of the day. In this sense, the Great Separation initiated in the 1830s and 1840s was the mirror image of the ecocity movement of today.

Some care is required in carrying this argument forward. We may be returning some channelled rivers to their 'natural' state and removing coastal defences in order to revive that natural balance of erosion and deposition, but no-one is calling for city streets to be covered once more in horse dung or for slaughter-houses to be re-established in city centres. Some of the erasures of organic pre-modernism are permanent and much of the current urban greening is as controlled and controlling in its ideology and practice as was Victorian sanitarianism.

The Great Separation was not an overnight revolution but a slow process, varying in pace and completeness from city to city. In the case of London, the rupture represented by the building of sewers took several decades from the 1840s to become established in the mind and in the landscape. Animal manure began to lose value in the second half of the nineteenth century, but this was as much about increasing horse numbers as it was about falling demand. Then, at last, in the first decade of the twentieth century the dominance of horse-powered transport in cities

176 James Winter points out that nineteenth century rural areas were becoming more countrified as they lost industry and population, falling back increasingly on agriculture. Winter 1999.

177 Castree 2003, 2005. See also Whatmore 2002, Hinchliffe 2007.

was decisively challenged by the internal combustion engine. Animal industries also came under severe pressure, with either direct or indirect sanitary motivation, and we can say that by the First World War both food-producing animals and the various by-product industries were no longer thought of as 'urban' in location.

The Great Separation was the materialization of an ontological split that had been building during the eighteenth century but which was conjured from its chrysalis in the early nineteenth century by one of modernity's most powerful tunes: the song of sanitation. Such was its astonishing force that the nation was persuaded to invest vast capital sums in a medico-environmental theory that frankly did not have a strong epidemiological basis but which was responsible both for the physical transformation of urban space and the generation of a tsunami of intellectual enthusiasm with few parallels in history. Thus were born new ways of seeing the environment, and the division of animals from urbanized culture was almost incidental to the wider project of bringing nature under control.

The following two chapters build on our story. Chapter Three shows that the influence of urban animals was felt in the peri-urban hinterland of large British cities. The point here is to investigate the 'manured region' as an example of the recycling of animal wastes that have been discussed in the present chapter. Then in Chapter Four the animal by-products industries will be discussed for their role in the urban blood and guts economy.

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Chapter 3
The ‘Charmed Circle’

Peter Atkins

All of the evidence indicates that Georgian and Victorian cities in Britain were filthy and represented one of the all-time peaks of sanitary transgression by any standard that one might wish to apply. Much of the problem lay with the inability or unwillingness of the local state to abate nuisances caused by poor housing conditions and to provide suitable facilities for the removal and disposal of human waste.[1] As we have seen, animals were also prominently involved. It was innate in the rapid population growth and accompanying urbanization of the early nineteenth century that animals were required for transport and for the provision of fresh meat and milk. Their numbers grew, as did the quantity of their faeces and the waste products from slaughtering, and the smells produced by the various manufacturing industries that were based upon processing their flesh, skin and bone.

With regard to their animal wastes, late eighteenth and early nineteenth-century cities were moving towards, but never quite achieved, a closed system in which the vast quantities of dung from the many town horses and cows were utilized in intensive peri-urban horticulture and hay-making. These in turn then provided sustenance for animal and human urban dwellers. In talking about agriculture in the environs of London at the mid-century, Andrew Wynter summed up the constant recycling involved:

> Every clearance of ground is deeply trenched, and its powers restored with a load of manure to every thirty square feet of ground. This is the secret of the splendid return, and it could be effected nowhere but in the neighbourhood of such cities as London, where the produce of the fertilizer is sufficiently great to keep down its price. And here we have a striking example of town and country reciprocation. The same waggon that in the morning brings a load of cabbages, is seen returning a few hours later filled with dung. A balance as far as it goes is thus kept up, and the manure, instead of remaining to fester among human beings, is carted away to make vegetables.[2]

1 Inglis 2007.
2 [Wynter] 1854: 294.

There is abundant evidence that similar systems were in operation in cities across Europe and North America, Paris being one of the best documented.[3] Michel Phlipponneau summed up the situation there well for 1892 when he said that many highly productive market gardens simply would not have existed without the city's horses and the waste they produced.

> L'existence de cultures maraîchères autour des villes de garnison de la région parisienne, Versailles, Saint-Germain, Meaux, Mantes, Rambouillet, n'est pas sans rapport avec la présence d'une nombreuse cavalerie.[4]

Johann Heinrich von Thünen, writing in 1826, understood the general significance of town-sourced manure to nearby farmers. His own estate was in Mecklenberg near the town of Tellow, to the south east of Rostock.[5] His interest was in formulating an abstract model of the rural economy, and one of his conclusions was that land use would vary with distance from urban centres according to a number of factors that included the cost of transport. With regard to peri-urban agriculture, his comment was that 'the distinctive feature of this ring is that it buys most of the manure it uses from the town … It is this which puts the first ring so far ahead of all the rest'.[6]

For the purposes of this chapter, we will concentrate mainly on London and its hinterland. The broader 'manured region', as we may style it, was initially the radius of convenient cartage, about five to ten miles at the beginning of the century, expanding with better roads to perhaps 15 to 20 miles and, later, with railway carriage, as far as 50 miles. The friction of distance was mediated through the expense of carting a bulky, low-value substance, causing the rapid taper of its profitability. Carey summed up well the peculiar tension between fertility and distance: 'Of all the things required for the purposes of man, the one that least bears transportation, and is, yet, of all the most important, is manure'.[7]

In sequence from London, this seems to have affected, first, the most intensive types of market gardening, growing delicate items such as asparagus; then, further out, vegetables and fruits were grown on farms; and, finally, hay was produced as fodder for the many town horses. The neat geometry of von Thünen's concentric ring model was never in evidence around London because of the distorting effects of the major routeways (including the River Thames and several canals) and of soil characteristics.[8] Figure 3.1 does nevertheless give some impression of the structure of the manured region.

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3 Barles 1999, Bouchet 1993, de Silguy 1996, Jugie 1993, Trochet et al. 2003.
4 Phlipponneau 1956: 74.
5 Rostock is on the Baltic coast of Germany.
6 Thünen 1966: 10.
7 Carey 1856, vol. 1: 274.
8 Atkins 1987.

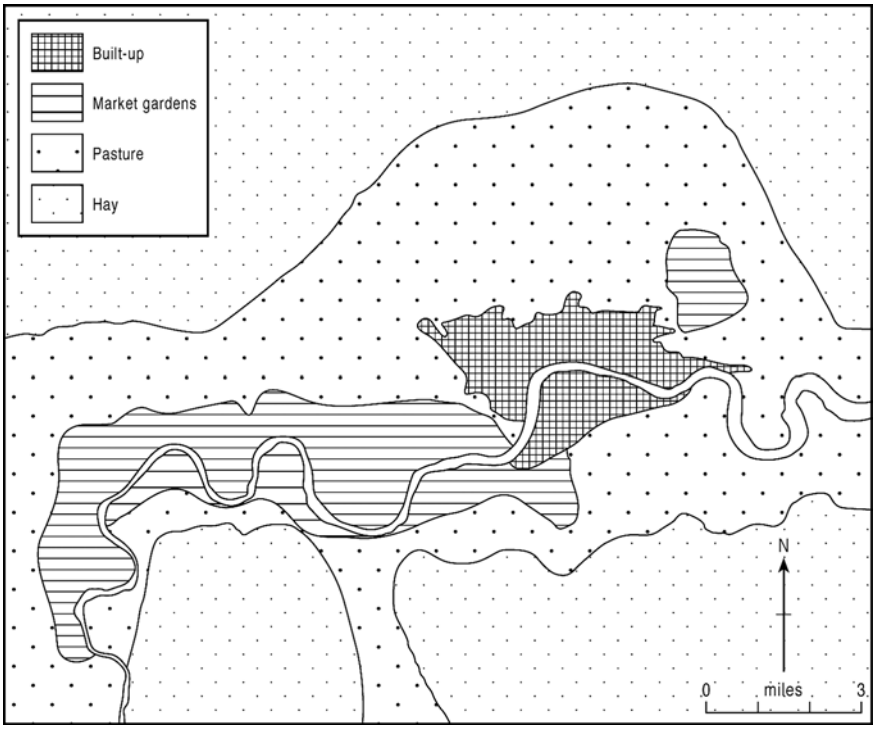

Figure 3.1 The manured region around London in the first decade of the nineteenth century

Source: Redrawn after Bull 1957

Hay-making for London Livestock

Starting at the spatial extremity of the manured region, we have many descriptions of the production of fodder. As early as 1748, Pehr Kalm, a Swedish traveller, published a detailed account of his impressions. Around London he was particularly struck by the luxuriant growth of grass in the meadows and pastures 'on most sides of London, close in to the town'. This was because, he observed:

> the grand opportunity for getting all kinds of choice manure here in London to spread on these meadows is the thing that especially contributes to this fertile growth. Their owners derived a very large profit from this source, for some of these pastures were let to those who kept cows, to supply the town with milk; others were hired out to butchers, to keep there for a time the cattle they had bought for slaughter; some to brewers or others, to turn their horses in. A fixed

> charge was paid per day for every animal that had freedom to go there, which for the whole year mounted up to a considerable sum.[9]

50 years later, John Middleton was a similarly close observer in his *General View of the Agriculture of Middlesex*.[10] He described a mature system of 'upland meadows and pasture', covering much of the county and dedicated to supplying hay to the 30,000 horses and 8,000 cows in London at that time. Middleton was impressed by this meadow, which was 'manured in a greater degree than any other **…** in this kingdom' and which yielded up to two tons of hay per acre, 'of the highest quality, for the feed of horses, in the world'.[11] The muck was applied in October when the soil was dry enough to bear the weight of a heavy cart. The clay soils of much of Middlesex meant somewhat restricted agricultural possibilities and the system of hay-making described by Middleton added welcome value. By now the pasturing of Kalm had declined – at least until the last hay was cut and the land was turned over to fattening cattle and sheep destined for the London markets. It had been replaced by a more intensive system of taking the hay to the animals.

There seems to have been some specialization in the production of either horse or cow fodder, with slightly different management systems for each. Land beyond the building frontier in St Marylebone, Islington, St Pancras and Paddington, for instance, was used by cowkeepers. They manured it every other year and mowed the grass two or three times a summer. It was common also, further afield in Middlesex, for farm tenancies to include a clause in which meadowland was to be manured every year or every other year at the rate of one load of manure to every load of hay sold off the farm.[12] In other words, a concept of sustainable fertility had been formalized in order to prevent tenants 'mining' the soil towards the end of their occupancy.

According to Middleton, hay-making in Middlesex had been 'brought to a degree of perfection altogether unequalled by any other part of the kingdom'.[13] He estimated that 120,000 acres of grass in Middlesex, 30,000 in Herts and Essex, and 100,000 in Surrey, Berks and Kent, were dedicated to it, at the equivalent of 6.5 acres per beast.[14] This hay was sent to markets in Whitechapel, Smithfield, St James's and Southwark.[15] Here it was sold in loads of 36 trusses, each weighing 56 lb. (or 60 lb. if it was new hay),[16] making a total of just under a ton per load.[17]

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9 Kalm 1892: 28–9.

10 Middleton 1798: 223.

11 Ibid: 225.

12 Rham 1850: 170.

13 Middleton 1798: 237.

14 Ibid: 301.

15 Middleton 1807: 546. The St James's hay market was transferred to the Cumberland market on the Regent's Canal in the 1820s.

16 The size of hay loads increased and the unit cost of transport fell once hay presses came into use in the second half of the nineteenth century. Tarr and McShane 2005.

17 Note that the tons referred to here are imperial tons. For American short tons, multiply by 1.12; for metric tonnes, multiply by 1.02.

According to an anonymous writer, the stimulus offered to the manured region continued well into the mid nineteenth century.

> In the neighbourhood of large cities, and especially in the neighbourhood of London, manure is a mere drug. The supply is so large in proportion to the demand, that it can always be had for an almost nominal price, and often for the mere cost of conveyance.[18]

This continuity was picked up again a decade later by Evershed in his prize essay on Hertfordshire for the Royal Agricultural Society of England.[19] He included a section on the belt of hay farms, mainly in Middlesex but extending north on the London clay as far as its junction with the chalk. Intensive management there seems to have remained unchanged since Middleton's day, with an average of five tons per acre of well-rotted manure being applied each year and yields of one to 1.5 loads of hay per acre, making them amongst the most intensive grasslands in the country.[20] With rents and labour costs higher than elsewhere, but also greater profitability, this system remained attractive to many farmers. Hay and straw was sold locally to agents who then transported it to market. Their return journey, more often than not, was carting a load of manure purchased at 1s. per load and sold in the countryside to farmers for seven times that rate.[21]

At about the time that Evershed was writing, the type of fodder used for horses was changing. The importation of maize created a cheap provender that was considered to be suitable as a substitute for expensive items such as oats and hay.[22] The cost of keep therefore fell between the 1850s and 1870s, facilitating a rise in horse numbers but stabilizing or reducing the call upon Middlesex hay.

Calculating the amount of hay consumed is problematic because requirements varied according to the amount of heavy work performed. Brewers' dray horses in 1798 were fed two trusses of hay a week (16 lb. a day), along with straw, oats and beans.[23] But these were large animals and their intake was certainly above the average diet for a town horse. Bradfield, who was knowledgeable about London omnibus horses, estimated the weekly consumption per stud of 11 horses to be 14 trusses (10 lb. per animal daily), a figure later confirmed (10.6 lb.) by Reynolds.[24] Sidney's ration for draught horses was 15 lb. of clover hay chaff and 22 lb. of oats, beans and maize, and Michael Thompson's calculation of an average for the whole

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18 Anon. 1850: 193.

19 Evershed 1864: 282–4.

20 Each load was 18 cwt or 0.9 tons.

21 The United Kingdom's pre-decimal pound sterling was divided into twenty shillings (abbreviated 's.'), each of which had 12 pence ('d.').

22 Gordon 1893: 16, Turvey 2005: 51.

23 Middleton 1798: 564.

24 Bradfield 1855, Reynolds 1882: 53.

country was 14.7 lb. of hay.[25] Turvey's analysis of the business archives of the London General Omnibus Company is more definitive.[26] It shows an average of 10.9 lb. of hay fed per horse in 1857 and 6.75 lb. in 1876.[27]

If we take 10 lb of hay daily as a minimum for the 200,000 or more horses in London at the end of the nineteenth century, then at least 325,000 tons of hay were required. The true figure is probably between 400,000 and 500,000 tons. It is therefore easy to see why meadow was so important to home counties' farming. As previously mentioned, yields were already two tons per acre in 1798, and on the most intensive farms this rose to six tons by the mid nineteenth century.[28] The Agricultural Returns for the 1890s show that meadowland in Middlesex and Surrey combined had fallen to 160,000 acres but this would still have been enough for London's horses and the cattle and sheep that passed through on their way to market.

Horticulture

Closer to the city the manured region was devoted to various forms of horticulture. In nineteenth-century Paris, horse and cow manure supported a system of cultivation that was 'one of the most productive ever documented'.[29] Using one million tons of town dung, it was responsible for 100,000 tons of primeur vegetables delivered to the central markets, a substantial portion of the city's out of season demand. The main crops were asparagus, beans, peas, cauliflowers, melons, cucumbers, lettuce, chicory, and radish. The system's peak of activity and prosperity seems to have been between the 1840s and 1880s, based on about 3,500 acres of market gardens within the 1860 boundaries of Paris and its immediate surroundings. There were 1,800 holdings, about one third in Paris itself, the average size of which was small, at about 1.85 acres, and the cultivation was intensive, employing a workforce of 9,000.[30] Every scrap of valuable soil was put to use, regularly producing four to five crops a year and sometimes as many as seven.[31] In 1900, 60 per cent of the cultivated land in the Departement of the Seine was fertilized by manure and street sludge from Paris.[32]

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25 Sidney 1880: 160, Thompson [1983]: 60.

26 Turvey 2005: 51.

27 In Paris the average ration before 1850 was 15.4 lb of hay. See Chapter Six in this book. Later, the Compagnie Générale des Omnibus fed a ration of 16.5 lb. of oats, 10 lb. of hay and 10 lb. of straw, and in 1871–2 the Compagnie Générale des Voitures gave rather less: 14.3 lb. of oats, 5.5 lb. hay and 6.6 lb. of straw. See Bouchet 1993: 207–8.

28 Caird 1852: 465.

29 Stanhill, 1977: 270.

30 Barral 1864.

31 Phlipponneau 1956.

32 Barles 2005a.

In the Paris of the 1860s, contractors, mostly farmers, were invited to bid for the removal of street waste. Much of this was used on the land and in 1900 there were about 500 contracts in operation.[33] In addition, there was a system of turning human waste into agricultural fertilizer, with ten or so drying plants processing it into pelleted form or poudrette, a manure made from night-soil, dried and mixed with charcoal, gypsum, ashes, earth, peat, or sawdust.[34]

Courtois-Gérard and Moreau and Daverne are the main sources for a reconstruction of this astonishing system, and also Ponce, who was himself a maraîcher on 2.5 acres of ground.[35] He grew each year nine tons of carrots; nine tons of onions, radishes and other vegetables; 6,000 heads of cabbage; 3,000 cauliflowers; 5,000 baskets of tomatoes; 5,000 dozen pieces of choice fruit; and 154,000 heads of salad – a total of more than 100 tons.

It took half a century for the anglophone literature to pick up on the maraîchères and publish lengthy accounts of their system. One of the most eloquent and enthusiastic was by Russian emigré prince Peter Kropotkin.[36] For him, the key activity in these market gardens was the use of fresh manure to create hot beds. Set up each November, these were in full production from December to April. The fermentation of the fresh manure used released sufficient energy to raise the temperature in the enclosed spaces of cold frames and cloches and make germination and growth possible well before the main season. Stanhill estimated that 472 tons of manure were applied annually per acre, where half of the holding was under glass for hot beds, but the average (with a quarter under glass) was 280 tons, equivalent to the manure of 45 horses per acre or a one foot depth across the whole plot.[37]

Each holding had a horse that was employed in hauling produce to market and then returning with manure from the stables and cowsheds in the city centre. Weathers, who looked into the costs of the maraîchères, estimated that manure, at 40 per cent of expenditure, was almost as big an input as labour.[38] The capital employed in such market gardens was substantial, with land as close as this to the built up area being very expensive – twice that of the equivalent London holdings – but also because of the elaborate arrangements that were necessary in the creation of the specific microclimatic conditions suitable for each crop. Key technologies used for this included large bell cloches (five to six million in the Paris region) and glass-covered forcing beds (half a million), in addition to frequent irrigation by hand-held watering cans. Straw mats were also called upon

33 Phlipponneau 1956.

34 Barles 2002.

35 Courtois-Gérard (six eds 1843–70), Moreau and Daverne (four eds 1845–70), Ponce 1869.

36 Kropotkin 1899.

37 Stanhill 1977: 273.

38 Weathers 1909: 17.

as protection from frosts, and walls were built at certain angles as wind breaks, sometimes with reflective surfaces to maximize the available light.

Such was the make-over of the land by these maraîchers that their leases allowed them, when they moved, to take their soil with them, down to a specified depth, along with their equipment. This was in recognition that they were responsible for creating the fertility and therefore deserving of recompense.[39]

Although perhaps never quite so intensive as Paris, the evidence suggests a similarly close association between horticulture around London and the use of manure. Malcolm Thick's history of the Neat House Gardens summarizes this convincingly for the seventeenth and eighteenth centuries.[40] He argues that their location near to the Thames, in Pimlico, was important for ready access to manure coming by water, and every gardener with a river frontage had wharfage rights. Manure was, he says, 'the mainstay of the Neat House's productivity' and he cites a Gardeners' Company petition in which it was claimed that they 'cleansed the city of all dung and noisomeness'.[41]

Dung from London enabled the Neat House gardeners to create hot beds on the same principle as in Paris. One has to remember that the climate during the Little Ice Age of the eighteenth century would not always have been favourable to the more delicate crops, but the motivation for the use of hotbeds, and other technologies of micro-climate modification, was probably more to do with the production of early season crops, in order to reap profits when demand could not be met by the farmers of 'main crop' varieties. The hot bed, if correctly laid, enabled the fermentation of fresh manure to raise the temperature of an enclosed space, so facilitating the germination and growth of delicate subjects under frost-free conditions. Also, as in Paris, part of the system was the use of 'lights', glass bell cloches and straw mats as regulators of this temperature rise. The heat created had to be watched at the upper end, so ventilation and shading were important skills.

According the Middleton, the Neat House gardens were the most productive in the London area, yielding £200 per acre.[42] At about 200 acres, their share of total value was about 16 per cent of the area under the spade at the turn of the eighteenth century.[43] But, rather than heavy field vegetables, the Neat House gardeners specialized in asparagus, melons, cucumbers, celery and other crops with premium prices, luxury items for those with deep pockets and a delight for the kind of out of season delicacies that would have come with attached prestige. As such, the Neat House occupied the same sort of niche later exploited by the Parisian maraîchers, not in competition with other market gardeners and farmers who produced roots and cabbages, but rather complementary to them. The Neat

39 Kropotkin 1899.
40 Thick 1998.
41 Ibid: 101.
42 Middleton 1798.
43 But only six per cent if the outer ring of plough cultivation is included.

House history came to an end in 1825 when the last remaining gardens were taken over as development land.

While the Neat House gardens were depicted as a kind of miracle of productivity and a triumph of environmental modification, later representations of London's horticulture tended to stress its survival against the odds. Already, by the time of the following description, it was obvious that competition for land at the urban fringe had become acute during the building booms of previous decades.

> The traveller by railway out of London, where he be journeying east, west, north, or south, or to any of the intermediate points of the compass, will observe, if he be looking out of the window of his carriage, the stubborn resistance of cabbages and onions to the progress of the great brick and mortar invasion. In the battle between the houses and the market gardens, the latter have been compelled to yield bit by bit of their territory; but the enemy finds himself closely pressed on every side. Celery and asparagus have thrown up earthworks to the very walls of his fortifications. Regiments of rhubarb with waving plumes, bristling squares and onions, orderly battalions of cabbages, wild rabbles of radishes and onions surround his outposts, and overflow every occupied spot. They maintain their position, in spite of the insidious attempts of the invader to befoul their water and poison the very air they breathe; but traitorous negotiations are opened between the nurseryman and the builder, and their strongholds must sooner or later be capitulated.[44]

As the re-imagining of the city progressed in the second half of the nineteenth century, it became stranger to think of horticulture close to the heart of a metropolis such as London. An example might be the famous 100 acre Brompton Park Nursery, which was founded in 1681 and in the 1850s provided the building site for the museums of South Kensington.[45] Despite our retrospective incredulity, Peter Atherall found that market gardens and nurseries were able cling on for lengthy periods on sites that were otherwise ripe for development.[46] His main explanation for this was that most were on leased land, where tenants-at-will or those on annual leases gave landlords the flexibility to sell a plot later to speculative developers at the moment when the price was right. During quiet periods in the building cycle, often the most profitable use of land was one form or other of intensive horticulture. One disadvantage of this knife-edge arrangement was that tenants had little incentive to invest in a particular plot if they could not be sure they would be there the following year. But this was less of a problem where a lease contained a 'resumption clause'. This was a legal device, similar to the one used Paris, that guaranteed the grower compensation for any 'improvements', such as the fertility created by intensive manuring. As a result,

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44 [Thomas] 1853: 409.

45 Harvey 1973, Sheppard 1975.

46 Atherall 1975.

> intensive nursery, glasshouse and floricultural holdings had the greatest competitive strength among non-urban land uses, and there was often little difference between the sale price of land devoted to these uses and that charged for open building land.[47]

There are other stories to be told about market gardening in the manured region. One we might call 'making the soil' is discussed by Joan Thirsk.

> It no longer appeared essential for horticulture to be confined to a few naturally-suited market-garden soils … The excellent soils in use around London were recognized as being man-made, and so long as town manure was available to maintain fertility, more such soils could continue to be manufactured.[48]

Both Middleton on Middlesex and Stevenson on Surrey, comment that, already in the early nineteenth century, immense quantities of manure had been used to enrich the soil of the peri-urban area.[49] Close to the River Thames on the south bank, for instance, the sandy loams of a strip from Battersea westwards to Richmond gradually became 'in general a black loam or rich mould'. At that time 18 to 20 miles was the outer limit for carrying manure, which, after all, was only a return load once crops had been delivered to the London markets. Figure 3.1 shows that market gardening near a river or canal was constrained in the first half of the nineteenth century to within a couple of miles of the wharf where it was brought by barge. The 1881 distribution is more scattered due to the possibility of railway transport.

One of the problems with stable dung was that it was mixed with straw and so needed to be stored and rotted until it could be put on the land. Night-soil, on the other hand, was applied immediately and was considered to give a bigger boost to fertility, although there is no evidence to suggest that it was ever used extensively near London.[50]

Tremenheere in his account of Ealing wrote that 'the abundance of manure which is obtained from London makes the farmer, in a great degree, exempt from that necessity which compels a systematic rotation of crops'.[51] This freedom was the result of the application of amounts of manure that varied from ten to 80 tons per acre, depending upon the type of crop. Celery and onions apparently responded best to heightened fertility.[52] Evershed even found one unlikely market garden, 'of

47 Ibid: 69.

48 Thirsk 1997: 171.

49 Middleton 1798, Stevenson 1809: 37.

50 This compares with the situation in America where, according to Tarr (1996: 295), in 1880 about half of cities had systems where farmers would collect human waste for composting or direct application.

51 Tremenheere 1843: 125.

52 Whitehead 1880, 1882. 1904, Dyer and Shrivell 1913.

40 or 50 acres, in the parish of Bermondsey, flourishing in the midst of smoke and vile smells', where 100 tons of manure were used per acre, bringing it up to levels of intensity that were not far below those of Paris.[53] Most of this holding was planted with radishes, cauliflowers, and celery – the same combination year after year, without rotation.

Whitehead was one of the most authoritative authors on what he called 'the charmed circle' of London's manured region.[54] By the time he was writing, the 'old system' was changing but there still remained an 'inner circle' of spade cultivation on smallholdings, where manuring levels remained high and there was the advantage of proximity to both stable manure and large wholesale vegetable markets, along with the availability of cheap labour, either local or migrating gangs who passed through at times when extra hands were required. It was here that the higher value crops were grown, such as asparagus, sea kale, broccoli, cauliflowers, French beans, celery, radishes, lettuces, mustard, and cress. These required skill in terms of their management and greater investment in equipment such as forcing frames.

Beyond this was an 'outer circle' of lesser intensity, where heavier vegetables were grown and those that provided less entrepreneurial opportunity for catching a high price on a day of shortage for that particular item in Covent Garden. Many of these 'farm-gardens', as they were sometimes called, sent their produce to central London and brought manure back on the return. They grew crops such as cabbage, peas, beans, onions, Brussels sprouts, cauliflowers, and purple sprouting broccoli, using the plough rather than the spade.

According to Brayley, there were 2,000 acres of market gardens around London under the spade, mostly in Middlesex, and about 8,000 acres under the plough.[55] Before the railways linked London to growers in Kent or the Vale of Evesham, it was difficult for other parts of the country to compete with the freshness, quality and price of such peri-urban produce and Dodd claimed that three-quarters of the capital's vegetable consumption was supplied from within a 12 mile radius.[56]

However, the distribution of market gardens and nurseries never stood still from year to year. A glance at the distribution around London in circa 1819-23 and 1881 (Table 3.1) demonstrates the degree of change. Almost all of those operating at the first date had disappeared 60 years later under the tide of urbanization and the new ones were less dependent upon manure brought on the river by barge.

Within the inner circle of spade cultivation there was a specialization by crop (Table 3.2) that in some instances was based upon physical characteristics of the soil, such as friability and free drainage. But there is evidence that the skills and risk-taking preferences of individual growers were also important. An example is the cultivation of herbs in Mitcham, which provided raw material on a large scale from the eighteenth to the mid nineteenth centuries for the nascent herbal

53 Evershed 1871: 423.
54 Whitehead 1878: 749-52.
55 Brayley 1810, vol. 1: 21.
56 Dodd 1853: 463.

Table 3.1 Estimates of extent of market gardens around London, 1795–1879

Source	Estimate
Lysons 1792: vol. 4, 575-6	5,000 acres of vegetables and 800 acres of fruit; 1,700 acres of potatoes; 1,200 acres of cow feed; 300 acres of herbs; 3–400 acres of nurseries. Fulham had by far the largest acreage (2,175), followed by West Ham (700), Kensington (590), East Ham (570), St Paul Deptford (500), Isleworth (430), and Barking (400).
Anon, *Gentleman's Magazine* 71, 1801: 273	10,000 acres under vegetables.
Middleton 1798	3,000 acres of fruit in Middlesex, spade vegetables 1,800 acres, 500 acres in Surrey. Plough vegetables up to 10 miles: 1,800 acres in Middlesex, 3,500 acres in Surrey, 1,700 acres in Kent, and 1,000 acres in Essex. 1,500 acres of nurseries.
Cuthill 1851	12,000 acres in vegetables, 5,000 acres in fruit trees. 35,000 horticultural labourers.
Shaw 1879	beginning of decline near London.

medicine industry in London. In 1805 James Moore had a 500 acre farm there on which he used 20 tons per acre of 'the strongest rotten dung' to grow a range of 'physic' plants: peppermint (150 acres), spearmint (four acres), marsh mallows (one acre), angelica (between a half and one acre), camomile (four acres), liquorice (ten acres), hyssop (half an acre), poppy (two acres), lavender (five to six acres), and roses (ten acres), among others.[57]

By the 1870s and 1880s market gardeners were feeling the effect of competition from further afield. There were a number of factors involved.[58] First, the railways were by then able to deliver quantities of the higher value, delicate crops in a timely fashion. By the end of the century, such were the contacts and the organizing capacity of the vegetable wholesalers that they were able to draw in supplies from all over the country. Meanwhile the 'inner circle' was under local challenge from growers who were investing in greenhouses made up of the large, industrially-manufactured panes of glass (10 x 8 inches up to 18 x 24 inches) that were coming on the market from the 1850s onwards.[59] These greenhouses were increasingly concentrated in the Lea Valley in East London. A third factor was the shortage, towards the end of the nineteenth century, of cheap, seasonal migrant labour, and spade cultivation had therefore all but disappeared by 1900.[60] Finally,

57 Malcolm 1805.
58 Whitehead 1882.
59 Thirsk 1997: 182.
60 Bennett 1950.

Table 3.2 Market garden specialisms around London, 1792–1879

Source	Specialism
Lysons 1792	Asparagus (Deptford St. Paul's, Chiswick, Battersea, and Mortlake); pineapples and grapes (Lambeth); onions (Deptford); herbs (Mitcham); potatoes (Barking); herbs (Mitcham)
Loudon 1825	Asparagus (Mortlake and Deptford); cabbage and cauliflower (Battersea); celery (Neat Houses); peas (Charlton and Plumstead)
Cuthill 1851	Herbs (Mitcham); liquorice, strawberries, rhubarb, horse radish, sea kale (Rotherhithe, Bermondsey)
Dodd 1856	Asparagus (Mortlake), cabbage (Battersea), celery (Chelsea), onions (Deptford), peas (Dagenham)
Burbridge 1877	Asparagus (Fulham, Mortlake, Isleworth), celery (Fulham), herbs (Mitcham), mushrooms (Fulham, Chiswick), onions (Fulham, Chiswick, Woolwich, Deptford, Mitcham)
Shaw 1879	Flowers (Barnet, Potters Bar, Finchley, Enfield, Tottenham); forced fruit (Finchley, Potters Bar, Barnet); grapes (Isleworth, Leyton, Finchley, Fulham); peaches (Finchley, Fulham); pineapples (Isleworth); outdoor strawberries (Isleworth, Acton, Deptford, Chiswick, Twickenham); beans (Wandsworth); spring cabbage (Wandsworth, Fulham, Gunnersbury); seakale (Fulham, Chiswick, Barnes, Deptford, Woolwich); forced rhubarb (Hammersmith); onions (Lea Bridge, Fulham, Chiswick, Deptford); celery (Fulham); herbs (Mitcham)

the decline in numbers of town horses after the First World War was decisive because a major element of comparative locational advantage was gone. By the 1930s market gardening had retreated on to the deep loams to the west, where the soil was sufficiently fertile not to require large applications of manure.[61]

Our understanding of the scale of the system in the manured region depends upon some calculations of the quantities involved. Various estimates have been made of the amount of manure produced in cities such as New York. In 1900 there were 130,000 horses creating 400,000 tonnes of manure to dispose of.[62] Clearly there would have been a correlation between horse numbers, the demand from commercial hauliers and public transport, and the prosperity of potential private owners of horses for their carriages; and there would have been some districts of cities where the residents would have been significantly more mobile than others. Both the populations and physical extents of cities were growing during the century and one would therefore expect the total of manure produced to have increased.[63]

61 Willatts 1937.

62 McShane and Tarr 2007: 25–7, Melosi 1981: 20, Lay and Vance 1992: 132.

63 McShane and Tarr 1997.

Table 3.3 Animal manure produced in London, 1800–1893

	Horses ('000)	Horse manure ('000 tons)	Cows ('000)	Cow manure ('000 tons)	Animals driven through streets			Total manure ('000 tons)
					Cattle ('000)	Sheep ('000)	Manure ('000 tons)	
1800	30[1]	320	8[1]	110	125[2]	842[2]	5	435
1825	32[3]	340	9[4]	120	157[2]	1,130[2]	7	467
1855	54[3]	620	17[5]	224	300[6]	1,553[6]	11	855
1893	200[7]	2,135	7[8]	88	232[8]	888[8]	9	2,231

Sources: [1] Middleton 1798: 301; [2] McCulloch 1834: 261; [3] Turvey 2005: 47; [4] Loudon 1826: 1083–4; [5] Anon. 1856: 674; [6] P.P. 1867–68 (153) lv.459; [7] Gordon 1893 estimated 300,000 horses but this was probably too high; [8] Agricultural Returns of Great Britain, 1893, P.P. 1893–4 (C.7256) cl.1

There is an attempt in Table 3.3 to make a calculation for London in the nineteenth century, based upon various assumptions. In the absence of any detailed information, the results should be taken as indicative. They add some modest additional depth to the musings of Michael Thompson and Ralph Turvey but there are limitations as to how far one can go with such calculations.[64]

Table 3.3 uses the horse dung multipliers discussed in Appendix 3A. Also included are the cattle and sheep that were driven through the streets on their way to market.[65] The extraordinary increase in horse numbers in the second half of the century explains the vast quantities of manure that were produced, topping two million tons annually in the 1890s. The demand from those market gardeners and farmers within a realistic carting or barging distance was probably falling at this moment, so it was inevitable that the bottom would drop out of the manure market at the very time that stable and cowshed owners needed it most. As Turvey has noted, manure became a 'bad' after having for so long generated a virtuous circle of fertility and prosperity.[66]

In view of the amount of manure deposited on the streets, it is not surprising that there were many crossing sweepers in London serving those pedestrians who wished to keep their footwear clean.[67] They mostly frequented busy streets where the potential of being rewarded for their trouble was greatest.

64 Thompson 1970, 1976, 1983, Turvey 2000, 2005.

65 It was decided here is that only one day's manure would be included for these animals because after that they would either have left London after being sold or been quickly dispatched in the capital's slaughter-houses.

66 Turvey 2000.

67 A system of street orderlies was started in 1843/4 by the National Philanthropic Association, a vehicle for the philanthropy of Charles Cochrane. Low 1850, Winter 1993.

By the middle of the nineteenth century, local authority scavengers had begun systematic street cleaning and business for the crossings sweepers declined. But a modern system of household refuse collection and disposal by local authorities was delayed until the Public Health Act of 1875.[68] This made provisions for the removal by the Sanitary Authority on appointed days of accumulations of refuse from premises.

The Transport of Manure

Charles Cochrane of the National Philanthropic Association, in a letter to the editor of the *Medical Times*, estimated in 1851 that 2,000 cart loads of manure were at any one time waiting to be removed from the stables and mews of London.[69] This was in July of that year but it seems likely that the true figure was much higher than Cochrane imagined because regular removal was more common in the autumn and winter when the fields were being prepared. Accumulations built up in the city in summer, when arable farmers were too busy with their crops to worry about town manure.

Farmers and market gardeners seem to have made deals with the owners of individual stables but there were also collection points where agents accumulated large heaps of manure that were visible for all to see. At the beginning of the nineteenth century St George's Fields in Southwark had a 'grand depository' for manure and night-soil,[70] and there were other large laystalls in Clerkenwell, Bloomsbury, Hyde Park Gardens, Lincoln's Inn Fields, and Tothill Fields.[71]

The spatial envelope of the manured region depended upon the relative availability and costs of road and water transport. According to Arthur Young, market gardeners in Lewisham and Blackheath did not bring dung back by road from London after delivering their crops.[72] Instead they barged 'large quantities' from Deptford Creek. The main reason for this was the high cost by road, which at 3d. to 5d. a ton mile meant that manure costing 2s. a load in London was 4s,10d. after a journey of ten miles and 9s,2d. after 17 miles, a price that was prohibitive for most growers. John Middleton made a similar calculation in 1798 and found the expense to be even higher at 10s,2d. per ton mile over 13 miles to South Mims for back carriage but 19s,4d. for a one-way load of manure.[73] One factor was the poor state of the roads, which slowed the journey and, as

68 Wilson 1976.

69 *Medical Times* 24, 1851: 106–7.

70 Malcolm 1805: 117, Stevenson 1809: 510, 512, Thornbury 1885, vol. 6: 343.

71 Fussell 1971: 173, Commissioners on Sanatory Condition of Labouring Population of Great Britain Report, P.P. 1842 (006) xxvi, 439.

72 Young 1772: 94.

73 Middleton 1798: 302. The cost was less, at 12s. if this was back carriage after a load of vegetables had been delivered.

late as the 1840s, carts generally delivered manure only up to a range of six to nine miles.[74] One reason for the poor road surfaces, according to the turnpike commissioners was that there were some heavy-duty carts, with loads of six to eight tons, that were carrying hay and straw into London at a half toll and then returning back with toll-free manure.[75] These churned up the road surface.

Barge or lighter transport was much cheaper. The cost at Weybridge and Chertsey, over 20 miles from central London, in 1809 was only 4s. to 5s,6d. per ton, a 50 per cent mark-up as against 400 per cent or more for the cart and horse.[76] It is hardly surprising, therefore, that Figure 3.1 shows a strong guiding of market gardening along the corridor of the Thames, mostly within two or three miles of a wharf.[77] Some individual market gardeners and nurserymen in west Middlesex required large quantities of manure. A Mr Norris of Isleworth, for instance, in the early 1840s was taking 50 barge loads a year, equating to over 1,500 tons.[78] It was much the same picture south of the river in Surrey.

> The culture of both garden and nursery grounds is principally limited to those parishes which lie within a moderate distance of the river Thames, on account of the convenience it affords of water-carriage for the manures from the London stables.[79]

There were economies of scale for barges carrying 30 or 40 tons, loading from gathering points such as Letts' Wharf in Commercial Road, Lambeth, which in the 1870s was handling 30,000 tons of horse manure annually for the City of London, along with 'street slop' and household refuse.[80] Some of the barges were specially designed with flat bottoms and sails to navigate the shallows of the lower reaches of the Thames to ports as far as Rochester, 80 to 90 miles downstream. They were described by Dickens in *The Uncommercial Traveller* as a 'fleet of barges that seem to have plucked their brown and russet sails from the ripe trees in the

74 Royal Commission for Inquiring into State of Large Towns and Populous Districts: First Report, P.P. 1844 (572) xvii.Q.4661

75 Commissioners of Metropolitan Turnpike Roads North of Thames, Fifteenth Report, P.P. 1841-I (327) xii.249, Turvey 1996.

76 Stevenson 1809: 511.

77 Pratt (1906) found west Middlesex still to be one of the key clusters of horticulture in the country, much of it within twenty miles of London, stretching from Chiswick and Kew, through Isleworth and Brentford, to Hounslow, Feltham, Heston, Southall, West Drayton, Yiewsley, Harlington, Hayes and Harmondsworth. The holdings, at 50 to 100 acres, were larger than those of earlier eras close to the urban area, suggesting that by then the farming gardener had replaced the more intensive spade gardener.

78 Royal Commission for Inquiring into State of Large Towns and Populous Districts: First Report, P.P. 1844 (572) xvii.Q.4651.

79 Brayley 1850, vol. 1: 233.

80 Turvey 2000.

landscape'.[81] These so-called 'stackies' made return journeys to central London with hay stacked up to 12 feet high on deck.[82] According to Bagwell and Lyth, their trade peaked just before the First World War, with hundreds of vessels involved.[83]

In east London, the Lea Navigation was in use in the early nineteenth century as far as Enfield for as little as 3s,4d. a ton.[84] In 1862 120,000 tons of manure were carried and this represented just over one third of the total traffic of all goods on that waterway.[85] The Paddington, Regent's and Surrey canals were also heavily used.[86]

The opening of railway lines with facilities for storing and carrying manure did not bring a revolution in the extent of the manured region. The structure of freight rates was such that this type of bulky, low value commodity was expensive to move. Frere summed up the farmer's dilemma when he hypothesized that 'a farmer can buy London manure at his local railway station for 8s,6d. a ton but he is indifferent, whereas his friend who has access to barged manure for 5s. at a local wharf has a good deal'.[87] At this time the usual price paid at stables in London was 2s,2d. per ton. Carting to a railway station within a mile added 60 per cent, and the railway rate was a further 3s. per ton for a 25 mile journey, a total of 6s,6d delivered to the rural station.[88]

Some growers brought only as much manure by cart as they had room for after delivering their produce to market, the rest coming by other means. An example was the garden-farm in Barking, eight miles from London, described by Evershed.[89] The carted manure here, about half of requirements, was bought in London at 3s. or 3s,6d. per ton, and the rest came at 5s. a ton to the railway station or quay. A few years later, Whitehead described a market garden a little further out in Essex, 16 miles from London.[90] This was apparently too far for carting manure, which had to be brought by barge to Rainham and then by traction engine, adding greatly to the cost. This confirms once more that there were limits to the outer radius of manure transport by road.

As manure in London became more of a nuisance than an asset in the last decades before the First World War, its value fell sharply and, paradoxically, it was taken further afield. In the 1890s, for instance, it was available at Swanley

81 Dickens 1868: 303.

82 Benham 1948, 1951, Carr 1951, Davis 1970.

83 Bagwell and Lyth 2006: 31. Dung was used as ballast and regulated by legislation. An Act of 1805 (32 Geo II c.16), for instance, limited the annual total that could be carried to 2,000 tons.

84 Middleton 1807: 376.

85 Royal Commission to inquire into best means of preventing Pollution of Rivers: Third Report, Vol. II, P.P. 1867 (3850-I) xxxiii. Q.4521.

86 Mayhew 1851, vol. 2, 194–6.

87 Frere 1863: 128.

88 Evershed 1864: 285.

89 Evershed 1871: 424.

90 Whitehead 1879: 842.

Junction, 17 miles from London, at the astonishingly low price of 2s,1d. per ton.[91] It is difficult to see how this could have been achieved unless the Borough of origin, Newington, was subsidizing the carriage in order to find an outlet for its unwanted street sweepings.

Rider Haggard's account of rural England, based on his travels in 1901 and 1902, makes many references in the chapter on Hertfordshire and Middlesex to manure brought from London. He quotes one farmer as saying that 'In Hertfordshire prosperity is, in the main, confined to the neighbourhood of the railway line'.[92] Farmers were using 15 tons or more per acre for potatoes and two to three tons for other arable and pasture.

Bedfordshire is an unusual example of how the manured region lived on beyond the immediate environs of London. On the valley gravels and greens and of the Sandy and Biggleswade areas, market gardening expanded when the Great Northern Railway was built in 1851 and enabled the movement of large quantities of stable manure from London.[93] It arrived by the truckload and 'a strong factor in the concentration of market gardening within a belt a mile or so from the railway line was the limit to which large tonnages of manure could be moved by horse and cart'.[94] The area affected was a corridor 15 miles by five that had not been highly valued as arable land because it was 'thin hungry loam underlain by gravel'.[95] But in the hands of a band of small independent growers on plots of ten to 15 acres each, this was an advantage because they were able to exploit a soil that was easy to work and 'warm and early', and now with a fertility and humus content that could be made and remade with imported dung. The problem for them came after the First World War when London manure was scarce and it finally ceased to be available in the late 1930s.[96]

Conclusion

Strategic urban thinkers such as John Martin and Edwin Chadwick had hoped that all urban faeces, both human and animal, would be used productively in agriculture and so achieve the objective of a clean and healthy city funded by a sustainable income stream.[97] One can see the utilitarian influence of Chadwick's mentor, Bentham, here but there is also something peculiarly Victorian about the urge for both 'good and

91 Parsons 1893–4: 99.
92 Haggard 1902, vol. 1: 511.
93 Rigg 1916.
94 Evershed 1871: 432. Coppock 1961 recalls that manure cost 4s.6d. per ton at the railway station but double that five miles away.
95 Hall 1913: 424.
96 Beavington 1963: 93.
97 Martin 1842.

gold'. It was difficult to escape a moral foundation to this cleansing of the Augean Stables.

According to Zola, writing about Paris, the manure there 'symbolizes the world and its life … Paris rotted everything, and returned everything to the soil, which never wearied of repairing the ravages of death'.[98] In other words, this chapter has reflected the view current in the mid nineteenth century that animal 'wastes' carried a creative and regenerative potential; indeed, they were crucial to a cycle of fertility that gave the world an organic wholeness that was an 'improvement' of nature rather than the interruption introduced by modernity.

As we have seen, the manured regions around London, Paris and other large cities supported several highly productive agricultural activities and were responsible, for a period, for supplying the bulk of horticultural commodities and horse fodder to the city. It was the Great Separation that disturbed the 'urban symmetry' of circulating waste and removed the possibility of a manured region.[99] Night-soil was no longer available and manure became expensive to transport over longer distances as the city expanded and market gardening was pushed further out. Eventually even the quantity of manure declined as urban horses were replaced by motor vehicles and other waste-producing animal industries were removed to where they were less likely to cause a nuisance. In the next chapter we will look in greater detail at these 'noxious' industries that made up London's blood and guts economy.

Appendix 3a: The Quantity of Animal Manure Produced in London

The assumptions used in Table 3.3 are worth spelling out. First, many of the nineteenth century commentators relied heavily upon Boussingault's (1843) calculation of a manure output per animal of 34.2 lb.,[100] but in retrospect this seems to be on the low side. Reviewing the modern literature, Lawrence et al. regard 57.3 lb. as a daily average for a 1,100 lb. horse involved in intense exercise, making 9.3 tons per annum per beast.[101] This annual output, which is used in the present calculations, is more than the 7 tons assumed by McShane and Tarr,[102] the 7.3 tons of Mayhew, the 5.9 tons of Stanhill,[103] and the 5.4 tons of Primrose McConnell,[104] and it is considerably more than the three to four tons allowed by Thompson and the five tons of Evershed.[105] Stephens comes in higher at 12 tons but this includes

98 Zola 1873: 243.
99 Gandy 2004.
100 For example, Aikman 1892: 20.
101 Lawrence et al. 2003.
102 McShane and Tarr 2007: 26.
103 Stanhill 1977.
104 McConnell 1897. McConnell estimated an additional 1.8 tons of urine.
105 Thompson 1976: 77, Evershed 1864: 284. The National Philanthropic Association estimated 30 lb. per day on streets per working horse (4.89 tons per annum).

litter.[106] For Paris, Vincey calculated that 8.9 tons of stable manure were produced per horse in that city, and more if a portion of the ever-present street mud, 'gadoue', is included.[107] In Table 3.3 no allowance is made for changes in the average size of town horses through time.

Second, horses used in vehicle traction would have spent no more than a portion of their day on the road. The heavy weights they pulled meant that rest was essential and much of their dung would therefore have been collected in the stable. London omnibus horses spent only four hours a day working,[108] but the delivery horses kept by railway companies and vestries worked about 70 hours a week.[109] It seems reasonable to assume that the average horse spent one third of its time on the road and excreted about half of its manure there. When in the stable, the manure would have been mixed with litter, and Thompson remarks that this meant a tripling of its bulk. Overall, a fair division seems to be 9.3 tons for the street and 12.0 tons for the stable. According to Heiden, a horse worked 260 days, of 12 hours each, in the course of a year, or the equivalent of 130 whole days in the open and 235 days in the stall.[110] Calculating from the above data, he estimated that a well-fed working horse would produce about 50 lb. of manure in a day, or 8.15 tons in a year.

The annual manure output of cattle is assumed to have been 11.4 tons yearly or 13.2 tons including litter; that for sheep 0.6 tons.[111] Overall, Middleton suggested that 500,000 tons of manure were produced in London, more or less in line with Table 3.3.[112] Thompson estimated that English towns together saw three million tons of droppings a year in the 1830s, rising to ten million in 1900.[113] If he is correct, the latter figure is about a quarter of the national output of farmyard manure, which Dyer thought was 40 million tons,[114] and Russell and Richards 37 million.[115] Other estimates were somewhat lower. The General Board of Health reported in 1850 that in the one third of a mile in Regent Street, between the Quadrant and Oxford Street, three loads of manure were collected daily – the equivalent of 1,000 tons a year. Then using an unnamed City of

106 Stephens 1889, Division 3, 98.

107 Vincey 1896 cited by Barles 1999: 244. See also Barles 2001, 2005a, 2005b, Jugie 1993.

108 Gordon 1893: 21. Mayhew observed that horses worked for no more than six hours a day. Mayhew 1851, vol. 2: 194–6.

109 Ibid: 58, 80.

110 Heiden 1866.

111 The cattle estimate is from Morton (1868: 83–4), and that for sheep from Aikman (1892: 21). There were, of course, many other calculations, for instance by Turnor (1911: 76) 8 tons per cow; McConnell (1897) 8.9 tons per cow and 3.6 tons of urine, sheep 0.3 tons, pigs 0.8 tons.

112 Middleton 1807: 374.

113 Thompson 1970: 10.

114 Dyer 1894.

115 Russell and Richards 1916. See Brassley 2000: 537.

London district where 20,000 tons were estimated to be collected annually, a total for the whole of London was calculated at 200,000 tons. This must have been an upper estimate because it was arrived at by multiplying the area of that district by 20, in proportion to its size as five per cent of the total area. But, of course, the traffic would have been less further out from the centre.[116] Henry Mayhew's calculation was even lower.[117] He notes that 141,466 loads were scavenged from the streets of London and lists the contractors in each parish. About 150 carts and 440 men were engaged, along with 550 'orderlies' who swept the streets. Some of the scavenged material was mud or dust ground from the granite sets by the wheels of carriages, but about 80 per cent by weight had started as manure.[118] Mayhew's figure, including the droppings of cattle and sheep driven through the streets to and from markets and slaughter-houses, was 160,000 tons.[119] This seems modest, not least because the authorities in a much smaller city, Manchester, were collecting 40,000 tons from its 24 street sweeping machines and the total carted away from that city to surrounding farms was at least 78,000 tons in 1845.[120]

Appendix 3b: The Value of Manure

Manure was of such value in early nineteenth-century New York that heavy urban horses were able to earn their purchase price back in a relatively short working life of five years.[121] This was never quite the case in Britain. It is true that prices were on a rising trend up to about 1860, with manure from private stables available in central London to be carted away at 1s,3d. a load in 1763, 2s. in the 1790s,[122] 3s. in 1809,[123] and 3s. in 1851.[124] Some local authorities also made money by selling street-scavenged manure (Table A3.1) and in the case of a number of Scottish cities in the 1840s, most notably Edinburgh, these sales paid for their cleansing

116 Report by the General Board of Health on the supply of water to the metropolis, P.P. 1850 (1218) xxii.247–8.

117 Mayhew 1851, vol. 2: 186.

118 But Codrington (1888, 4) pointed out that only 14.2 per cent of London's soft core was street manure.

119 Mayhew 1851, vol. 2: 194–6.

120 Playfair 1845: 348. Adding stable and cowshed manure together, the Manchester total would have been about 100,000 tons a year or about half a ton of animal manure per inhabitant. Royal Commission for Inquiring into State of Large Towns and Populous Districts: First Report, P.P. 1844 (572) xvii.Q.6087.

121 McShane and Tarr 2007: 26.

122 Baird 1793: 19.

123 Stevenson 1809: 512.

124 Mayhew 1851, vol. 2: 201. In deflated 2010 values these are equivalent to £4.67 (1763), £5.60 (1790), £5.09 (1809), and £8.78 (1851).

Table A3.1 The sale of scavenged manure, 1845

Town	Cost of scavenging (£)	Sale of manure (£)	Quantity collected (tons)	Collection points
Aberdeen	1,400	2,000	–	2
Ashton-under-Lyne	170	17	–	1
Chorlton-upon-Medlock	650	–	2,153	1
Edinburgh	12,000	10,000	30,000	2
Glasgow	2,759	1,100	–	6
Haddington	–	130	–	1
Liverpool	4,820	1,150	–	1
Manchester	5,600	800	–	7
Rochdale	207	18.5	–	2
Perth	1,300	1,730	–	1
Preston	531	271	–	1
Salford	–	88	–	1
York	–	8–10,000	–	–

Source: Playfair 1845.

budgets.[125] Later, the Royal Sanitary Commission reported that sales to farmers in the late 1860s were at a considerable loss to a number of urban local authorities: Bury £100 (removal costs £700), Leeds £7,445 (1869), Leicester £136 (1868, but costs £1,900), Northampton £560.

After the mid-1870s the manure market went into decline, with 1s,4d. to 1s,6d. the going rate at the end of the century, and 1s. in 1905.[126] The price rebounded just before the Great War when the introduction of motor vehicles made it a scarce commodity as horses were replaced. In 1910 it was 3s to 3s,6d., and in 1913 4s. to 4s,6d.[127] In other cities where there were fewer takers, prices were significantly lower. In Edinburgh, for instance, one ton of manure fetched only 3d. in 1890.[128] The manure of London omnibus horses, which had been worth 14s. a year in the 1850s, by the 1890s earned only 1s to 2s. per animal,[129] a trend that closely shadowed a similar depreciation in New York.[130]

125 I am grateful to Paul Laxton for this reference. Sales in some cities included night-soil.

126 Haggard 1902, Hall 1913: 428.

127 Dyer and Shrivell 1913: 11–12. The deflated values here are £4.04 (1900), £2.87 (1905), £9.27 (1910), and £9.15 (1913).

128 Wilson 1976: 126.

129 Turvey 2000: 11.

130 McShane and Tarr 2007: 27.

Falling prices were partly due to a broadening of the agricultural fertilizer market in the second half of the nineteenth century. Fresh animal manure was now in competition with guano imported from Peru and manufactured chemical fertilizers, which could be afforded by middling and larger farmers. Nevertheless, advocates of the agricultural uses of manure and night-soil still had a voice. Their enthusiasm was recorded by various observers and travellers, such as Daniel Hall, Rider Haggard and the prize essay writers for the Royal Agricultural Society of England.[131] Having said that, the scale of the London-centred manure economy was impossible to reproduce in other parts of the country and anyway the intensive or 'high farming' of the mid nineteenth century was different because it depended upon expensive concentrates and capital investments such as drainage. Ironically, outside the Home Counties and a few other peri-urban regions, organic manure was at times in short supply and not well used by comparison with its skilful application around London, where there were experienced gardeners directing large labour forces in the finer points of nutrient management.[132]

The second, and clinching, factor in the declining value of London manure is clear to see in Table 3.3. Its availability increased from approximately 435,000 tons in 1800 to 2,231,000 tons in 1893, a five-fold increase, but the area of vegetable cultivation in market gardens in Middlesex and Surrey increased from 10,000 acres in 1800 to about 14,000 acres in 1893, not enough additional absorptive capacity to deal with the surplus locally.[133]

By the late 1880s, manure was becoming difficult to dispose of from the smaller London stables.[134] In Kensington, it was remarked that

> non-removal is sometimes the fault of the coachman, who will not give the refuse away and the farmers being now, as a rule, unwilling to pay for it. At certain seasons – e.g. haymaking and harvest time – there is no doubt a difficulty in getting the receptacles cleared, farmers being too busy to collect the refuse. Formerly, when the parish consisted largely of market gardeners, the cultivators of the soil were glad enough to get the manure by satisfying the demands of the coachman and others. Now that it has to be hauled miles to the suburban farms and gardens, the stable owners, moreover, being at the mercy of the waggoners, the case is far otherwise, and not infrequently payment has to be made to ensure removal, however irregularly.[135]

A third, lesser, reason for the dip in manure prices from the seventies was a change in quality. The London General Omnibus Company's report for the first

131 Haggard 1902, Hall 1913.

132 Brassley 2000.

133 Anon. (1801) *Gentleman's Magazine* 71: 273, Agricultural Returns.

134 Codrington 1888: 4, Turvey 2000.

135 Medical Officer of Health (1890) *Annual Report of the health and sanitary condition of the Parish of St Mary Abbots, Kensington*: 207–8.

half of 1877 stated that until recently straw only had been used for bedding, but cheaper materials were now being introduced, and that these might lower the value of the manure. Six months later, the Directors expressed a hope that manure from their stables in which sawdust was used would become better appreciated by farmers and easier to sell. The other alternative to straw was peat, and this too seems to have lowered the value of the manure, since the Great Western Railway had a Paddington contract in 1883 of 2d. per horse per week for horses littered with straw and 1d for those littered with peat.

London manure was what Thomas Magnell has called a 'collapsing good'.[136] The long-term price trend was such that, by 1893,

> all over London horse owners are growling about this manure question. At one time the manure was worth threepence a horse a week; happy is the man who can nowadays get a farthing a week per horse for it; many give it away, and there are a large number who are obliged to pay for its removal as trade refuse.[137]

From once being a profitable good, horse dung had become a public bad.[138] It created smells and dust and turned major thoroughfares into obstacle courses for those with clean shoes. It attracted flies and was associated in many minds with disease.[139]

136 Magnell 2006: 162–3.
137 Gordon 1893: 46.
138 Turvey 2000.
139 Biehler 2010.

Chapter 4
The Urban Blood and Guts Economy

Peter Atkins

I have argued that the sanitary idea and its enthusiastic adoption by many in the public health movement were responsible for two major changes in the mid and later nineteenth century. First, there was a materialization in physical infrastructure of the idea that waste products and their smells had to be removed before they could cause disease. A range of technologies, from sewers to waste destructors, were employed to achieve this purpose. Second, food producing animals and animal by-product industries became unwelcome in many cities, with the ultimate aim of establishing nuisance-free, and therefore cleansed, environments. Together, these amounted to a greater conceptual and physical separation of the urban realm from organic nature than had been experienced before.

Simultaneously, however, there were two contradictory trends. On the one hand, the second half of the century saw a further intensification of the horse domination of urban transport. There were more and more horse-drawn omnibuses, trams, cabs and private carriages, all of which had an employment multiplier in associated horse-related industries. On the other hand, this was also an era when a cheap and efficient supply of animal protein was satisfying a growing demand. Not all sections of society or regions benefited equally from this increase in meat consumption, and change was gradual, but by 1910–14 the average intake in the United Kingdom was up to an annual 126.9 lb. per person from 82.5 lb. in the decade 1841–50.[1] A declining proportion of this was from cows and pigs kept in cities or animals killed in city-centre slaughter-houses. We might say, then, that the nutritional transition initiated by this additional protein was experienced at the same time as the centre of gravity of these activities moved away to peri-urban and rural areas.

As a result, there were complex and sometimes conflicting trends in the second half of the nineteenth century. The present chapter will add some colour to this outline in touching, first, on the lives cattle driven to market and of horses used for transport, and then their deaths. It will also argue that it is possible to identify cities and districts of cities that were most active in processing the body parts of animals in the post-slaughter phase. Bermondsey in south London is particularly interesting in this regard because of a concentration of tanning and a number of closely related leather-based trades.

1 Perren 1978.

Sweat and Pain

First then, we start with urban horses. It was their ceaseless work that provided the mobility and rhythm of this period.

'Cities have been made by building around the horse'. So the editorial writer of the *New York Times* summed up the vital importance of urban horsepower in 1881.[2] McShane and Tarr argue that the rapid expansion of American cities in the nineteenth century was predicated upon the efficiency of this animal machine, and the town horse certainly multiplied in numbers in a 'co-evolution' with its context. The degree of reliance that built up is demonstrated in the story of the so-called Great Epizootic. This was an infectious disease (probably equine influenza) that in 1872 spread from Toronto to New York and Boston and brought the economies of those cities to the edge of stasis because horses were in short supply for both freight and passenger transport.

Horses registered a similar level of importance on the other side of the Atlantic. In France, Mom argues that they amounted to a 'paradigme moderne de la mobilité'.[3] In Britain, Thompson estimated that the number of town horses increased from 500,000 in 1811 to a peak of about 1.5 million in 1901.[4] These vast numbers represented respectively 40 and 50 per cent of the nation's total population of horses. In London, Turvey found about 11,000 horses in the early nineteenth century, rising to 70,000 in the mid-1860s and perhaps to 300,000 by 1900.[5] These numbers were still increasing at the century's turn despite competition from other forms of transport, such as electric trams, automobiles and, to some extent, the railways.[6]

Barker and Robbins note that the transition from animal-powered to motorized journeys in London was rapid in the years immediately before the Great War, with motor taxi cabs, for instance, exceeding the combined numbers of hansom cabs and hackney coaches for the first time in 1910.[7] This was the same year that the capital's petrol omnibuses outnumbered horse-drawn omnibuses for the first time.[8] Theo Barker argued that in 1900 the world 'depended more on horses … than ever before', for instance as a result of a general expansion in the need for commercial transport, even to the extent that railways required connexions with horse-drawn transport in order to link goods and passengers with their final destinations.[9] In

2 Quoted in McShane and Tarr 2007: ix.

3 Mom 2009: 19.

4 Thompson 1976. The numbers are even greater if one includes the horses that were being bred on farms for eventual use in towns and cities. The present author declares an interest here because his grandfather and great grandfather used horses in the family road haulage business in Liverpool.

5 Turvey 2000: 57, Barker [1983]: 103, Gordon 1893: 113.

6 The peak year in Paris was 1899 with 17,323. Bouchet 1993: 89.

7 Barker and Robbins 1974, vol. 2: 329.

8 Ibid., vol. 2: 170.

9 Barker 1983: 101.

the twentieth century, horse numbers in Britain as a whole declined steadily, but there were still 923,000 in towns in 1924 – 48.9 per cent of the total – and, as late as 1939, the total animal 'horse power' on British farms still exceeded that of tractors.[10] In France and other European countries total horse numbers continued to grow into the 1920s and 1930s.[11]

Cattle Markets: 'the Cauldron of Steaming Animalism'[12]

In his wonderful book, *Nature's Metropolis*, Bill Cronon describes the relationship between nineteenth-century Chicago's ever-growing stomach and the transformation of American agriculture.[13] His point is that the ceaseless demand of the city's stockyards was responsible for bringing about a profound environmental change in the broader hinterland of the city. He shows that the animals brought from far afield were every bit as human-made as the streets of Chicago.

Contemplation of Chicago's stockyards or of the livestock market at La Villette in Paris brings to mind the industries of disarticulation that depended upon fat, bone, blood and sinew. The experiences of exploitation, slaughter and disassembly were common means for contemporaries to understand their animals, either through gothic descriptions that were somehow emblematic of society's broader problems with urbanization, or through the morality of regret. After all, this was the century of campaigning against animal cruelty and against experimentation on animals.

Animals walked through the streets of London and other large cities on their way to market and thence to the slaughter-house. Smithfield was the largest congregation of cattle, sheep and pigs in the capital and was notorious, on the one hand, for its overcrowding – it was only three acres in extent – and, on the other, for the casual cruelty shown to the animals. A large proportion of them were driven down the Great North Road, with a pre-market stopover in Islington at the lairages of Laycock and Rhodes. Others came from the east along the Whitechapel Road, or walked through the streets from the railway stations. It is clear that this activity caused great frustration and a sense of powerlessness among the general population. The Highway Acts of 1835 and 1864,[14] and the Metropolitan Police Act of 1839, gave means to prohibit cattle from being driven or tethered on footpaths but it was the main roads that were the real issue.[15] More effective were restrictions on the time of droving. The Islington Parish Amendment Act (1857) closed the streets of that particular district for 24 hours each Saturday midnight,

10 Thompson 1976: 63.
11 Mom 2009: 20.
12 The quotation is from Dodd 1856: 244, cited in Maclachlan 2007.
13 Cronon 1991.
14 5&6 Will. IV, c. 50, 27&28 Vict., c.101.
15 2&3 Vict., c .47.

and the Metropolitan Streets Act (1867) created a London-wide curfew on droving between 7 p.m. and 10 a.m.[16] Meanwhile the Metropolitan Market Act (1857) had given the police powers to make rules for the driving of cattle in the streets of London but their negotiations with various interested parties were drawn-out and the rules did not come into effect until the mid 1860s.[17] One prescribed route, for instance, was to be from the Metropolitan Cattle Market in Islington, along King's Cross Road and Farringdon Road to Blackfriars Bridge, and so to the south.[18]

The increasing incongruity of the street chaos around Smithfield was demonstrated in 1849 by the experience of Mrs Elizabeth Brown of 291 Great Warner Street, Clerkenwell. She was surprised by a runaway bullock that charged into her house and fell down the stairs. There it became stuck and it had to be butchered in order to get it out.[19] It seems that animals occasionally broke away from the herds taken through the streets and, panic-stricken, some knocked over or even gored passers-by. In Mrs Brown's case the bullock was being driven to market, and certain routeways were notorious for their disturbance to local life. Indeed, it was probably Smithfield that best symbolized at this time the clash of ideas about how live animals should become meat. It was described in a *Times* editorial as a 'monster nuisance':

> Every week on the two market days the traffic of the city is disturbed, and the passengers along the streets kept in a state of apprehension and terror, by the rush of the infuriated cattle along the public thoroughfares.[20]

Apart from the congestion of the surrounding streets, another objection frequently heard was the cruelty of the drovers. They were under pressure to deliver their animals and present them for sale in a space that was too small to accommodate them all comfortably. Most notorious were the 'ring-droves' of 20 to 30 animals in a circle with their heads facing inwards. Violence was routinely used to keep them in this formation, for instance by goading them with spikes or beating their hocks.[21]

One reason for such chaotic scenes was that there were different drovers for each successive leg of the animals' journey. The country drovers walked with them into London, as far as the overnight holding pens or lairs. The salemen's drovers then brought them to market and handed over to the butchers' drovers, who took

16 20&21 Vict., c. 118, 30&31 Vict., c.134.

17 20&21 Vict., c. 135.

18 Select Committee of House of Lords on Traffic Regulation (Metropolis) Bill. Report, P.P.1867 (186) xi.Q.291.

19 Select Committee on Smithfield Market: Report, P.P.1849 (420) xix.Q.576.

20 *The Times* 17 January 1849: 4d.

21 Select Committee on Smithfield Market: Report, P.P.1849 (420) xix.Q.1146, J.R. Norris; Royal Commission to Make Inquiries Relating to Smithfield Market, and Markets in City of London for Sale of Meat. Report, P.P. 1850 (1217) xxxi.Q.1362, J. Harper.

them for slaughter. This division of responsibility meant that the degradation of meat quality from beating, goading, and the sheer terror that the beasts must have felt, was difficult to pin on any one individual.[22] Rather than auditing the actions of individuals, it seemed increasingly obvious in the 1840s and early 1850s that the whole market had to go.

Dickens brought his argus eye cleverly to bear upon Smithfield. In *Oliver Twist* he made it into a sculpture of sounds and smells:

> The whistling of drovers, the barking of dogs, the bellowing and plunging of beasts, the bleating of sheep, and the grunting and squealing of pigs; the cries of hawkers, the shouts, oaths, and quarrelling on all sides, the ringing of bells, and the roar of voices that issued from every public house; the crowding, pushing, driving, beating, whooping and yelling; the hideous and discordant din that resounded from every corner of the market; and the unwashed, unshaven, squalid, and dirty figures constantly running to and fro, and bursting in and out of the throng, rendered it a stunning and bewildering scene which quite confused the senses.[23]

It is no surprise, then, that Smithfield was described as a nuisance 'picturesque in its enormity'.[24] It was emblematic of what we might call the old and new animal geographies of London, and even to the conservative eye it seemed overcrowded and in the wrong place, so close to the heart of a world city. The noise, smell and pain all were contradictions to the 'new urban identities associated with standards of civility, public decency, and norms of compassion'.[25] Yet the vested interests of the City Corporation, which benefited monetarily from the market tolls, coupled with the inertia of the other participants – cattle salesmen, slaughterers, and butchers – led to a concerted campaign that resisted change for three decades. The delay in establishing a new Metropolitan Cattle Market in Islington, in 1855, after several false starts and much parliamentary investment in enquiries, was lengthy and is proof that 'modern' modes of organization were slow in developing and taking hold in the collective mind of the trade.[26] The new market covered an area of 30 acres, with enough accommodation for 10,000 horned cattle, 40,000 sheep, 3,000 calves, and 2,000 pigs,[27] making a 'heaving, restless, noisy sea' of animals arranged in 'long lines of writhing horns'.[28] Provision was made for abattoirs in close proximity, separated from the street by a high wall. These public buildings had floors of waterproof cement, sloping to allow waste to drain away easily.

22 Dodd 1856: 235.
23 Dickens 1838.
24 *The Times* 10 April, 1851: 5b.
25 Wilbert 2009: 124.
26 White 2007: 188–9.
27 Palmberg 1895: 119.
28 Gordon 1890: 22.

A Foreign Cattle Market at Deptford followed in 1871 for beasts landed under controlled conditions that were meant to prevent the importation of disease.[29] Over 1,000 steamers a year arrived at the Deptford wharf, mostly coming up the Thames on Sundays and Wednesdays, the days before the twice-weekly markets. Animals equivalent to 1,000 tons of meat per week were sold and slaughtered there.[30]

The irony of both new cattle markets was that their heyday was relatively short-lived. The ease of railway transport had already led to an increase in country-killed meat being brought into London and this trend continued, supplemented by refrigerated meat from overseas. The new dead meat market that opened for business in Smithfield in 1861 became increasingly important, along with Leadenhall.[31] The measure of this is illustrated by data for 1890.[32] At that date Smithfield received 170,000 tons of country meat by rail, and about 140,000 tons from Australia, New Zealand and America. The town-killed meat it gathered from London's abattoirs and slaughter-houses had shrunk to only 70,000 tons. Meanwhile, the 350,000 cattle and 1,800,000 sheep that Islington had marketed in the early 1860s, were down in the years immediately before the First World War to only 50,000 and 290,000 respectively.[33] London had become the world's largest market for meat and therefore also the main outsourcer of the pain and suffering of the slaughter process.

Blood on the Streets

Most of the livestock sold at Smithfield were taken to the many small slaughter-houses in the immediate neighbourhood. As a result, the local population were subjected to yet further nuisances associated with blood and smells.

> In Bear Alley, that is a lane running from Farringdon Street to the old wall of London called Breakneck Steps … there is a slaughter-house … The stench is intolerable, arising from the slaughtering of the cattle, and from the removal too, after they are slaughtered, of what I may call the evacuations of the faecal matter, the guts and the blood and the hides of the animals; and when they clean the guts out, the matter is turned out; some of the heavier parts of the manure are preserved to be carted away, but a great deal of it is carried away by the water into the sewers.[34]

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29 This market only lasted until 1913. Perren 2006.

30 Gordon 1890.

31 It replaced Newgate market, which closed in 1861. Ironically, Smithfield became more and more important with the increase in imported meat from the 1870s and its business quadrupled up to 1932. Passingham [1935]: 14.

32 Gordon 1890.

33 Perren 1978: 153.

34 Select Committee on Smithfield Market. Report, P.P. 1847 (640) viii.Q.2181, Dr J.R. Lynch.

Figure 4.1 The Slaughterman

Source: Pyne, W.H. (1804) *The Costume of Great Britain*. London: Howlett and Brimmer, courtesy Wellcome Library, London

It was by no means unusual to see blood running in the gutters and water courses of early nineteenth-century British cities.[35] This and other evidence of the effluvia of killing were commonplace because of the slaughtering facilities in back street yards or in residential and commercial buildings made over into slaughter-houses without any particular adaptation. Animals were also killed close to city centres in retail butchers' shambles, where animals were led into a back room. Their death, so close to the point of consumption, did at least guarantee fresh meat, but associated nuisances became increasingly intolerable. In Hull, for instance,

35 Select Committee on Smithfield Market: Report, P.P.1849 (420) xix.Q.476.

> most of the slaughtering-houses … are in the midst of the town, in a long narrow alley passing from the main street to a parallel street at a considerable distance. Those slaughtering-places are very confined, and generally have a muck-yard attached, which is filled with the offal, dung, and blood, taken from the animals, and most offensive effluvia are constantly flowing from the purifying masses; the bloody matter, moreover, flows in streams along the open channels towards the covered sewers in the streets.[36]

30 years later the system had not greatly changed. In the early 1870s there remained about 1,500 private slaughter-houses in London, for instance 75 in the parish of Marylebone and 43 in Fulham.[37] Between November 1875 and March 1877 Edward Ballard, a Medical Officer of the Local Government Board, visited over 70 slaughter-houses around the country. His are the best-informed and among the most detailed eye witness accounts that we have of the industry for the period. He was surprised to find that small-scale killing was still carried out in 'an open yard, in some stable or inappropriate outhouse or even within a dwelling-house, in a room, cellar, or shop'. In South Shields he found that 24 shops were used for slaughter and 14 dwelling houses, including some where cupboards, cellars or wash houses were employed, sometimes even adjoining inhabited rooms.[38]

Publicly-owned slaughter-houses had begun to spread by this date. Some were deliberately located on the edge of town, as with the Foreign Cattle Market at Deptford in south east London, and those at Croydon, Manchester, Reading, Hereford, and Glasgow. Others were much closer to the centre, as in Newcastle, although the abattoirs there were in private ownership. Ballard's is the best contemporary description of the killing process at that time.

> The ox is led by a rope round its neck or driven into the slaughter-house, and the rope being run through a ring in the wall near the floor … the head is drawn down to a level convenient for the reception of the blow. Sometimes the rope is held by an assistant, and sometimes the animal is blindfolded. Taking a good aim, such as only long practice will ensure, the slaughterman with one swing of the pole-axe drives it into the centre of the crown a couple of inches in front of the horns, and the ox instantly falls heavily upon the floor. By the opening thus made, a long cane is run into the vertebral canal. As the animal lies on its side, the slaughterman then drives a knife deeply into the carcase above the sternum so as to cut thoroughly into the large vessels behind that part, and the blood gushes out freely. When it begins to run feebly, the slaughterman presses upon and kneads the abdomen and sternum so as to promote the flow and press the blood out. The blood, as it flows, is received in shallow iron vessels and

36 Royal Commission for inquiring into State of Large Towns and Populous Districts: Second Report, P.P. 1845 (610) xviii.670.

37 Select Committee on Noxious Businesses, Report, P.P. 1873 (284) x.434.

38 Ballard 1878: 149.

> set aside, or it is allowed to flow out upon the floor of the slaughter-house and into what is termed a blood-hole, that is to say, a sunken paved or cemented receptacle the size of which varies in different slaughter-houses. In this process a certain quantity of blood rarely fails to flow upon the pavement and into the drain. The carcase, when sufficiently bled is then turned over upon the back, in which position it is supported by what are termed 'prytches'. A prytch is a stout stick of wood about two feet long, provided at each end with a stout iron point. The point at one end is forced against the carcase, while the other point is slipped into little shallow holes in the floor which are termed 'prytch-holes'. An incision through the skin is then made along the whole length of the carcase, the skin is turned back sufficiently, and the abdomen opened and partially disembowelled. The head and neck are flayed, the horns are chopped off so as to be left upon the hide, and the head and feet are cut off. The sternum is sawed in the middle line along its whole length and the symphysis of the pubes also. The ends of a stout wooden bar are then introduced between the hinder leg bones and the tendons, and by this bar the carcase is hoisted head downwards into a perpendicular position by means of pulleys. The disembowelment and the flaying and dressing are then proceeded with. The omentum containing fat is cut off and hung on a hook to cool, and other portions of the folds of peritoneum containing fat are similarly removed. The portions of intestines to which fat is attached are removed to a table where the fat is cleaned off and set aside for the fat melter. The paunch and second stomach are separated; the former is opened and the contents removed, being either thrown upon the floor of the slaughter-house or put into an appropriate receptacle, and the paunch is then hung up on a hook. The second stomach is set aside for preparation as dogs' meat. The intestines, when freed from fat, if not otherwise required for pigs' or dogs' food, go away with the manure. Of the thoracic viscera the heart is used for human food, while the trachea and lungs are hung up for use as dogs' or cats' food. In this process more or less blood and other animal fluids and manure are spilt upon the floor, varying with the degree of carelessness of the slaughterman – the spilling of more or less is inevitable.[39]

Slaughter-houses, along with other noxious and noisome industries, had long been considered nuisances under the common law and were therefore subject to action by affronted citizens. In 1845 they were identified as

> an almost constant source of complaint and almost without exception, centre of the diffusion of noisome influences, affecting, with more or less intensity, the immediate vicinity, deteriorating the sanatory condition of the surrounding population, commonly poor and dense, as recorded in the local reports of the

39 Ibid., 149–50.

> Commissioners, and in a more remote degree vitiating the general atmosphere of the town, and thus becoming a nuisance to the inhabitants at large.[40]

In the light of such contemporary descriptions, it is no surprise that pressure was building by the middle of the nineteenth century to alleviate the suffering of animals in the marketing process and their painful deaths in the pre-modern conditions of urban slaughter-houses. Indeed the condition of animals in the food chain became a campaigning issue for early animal rights activists. Henry Salt was advocating humane slaughter in the 1890s and the Admiralty – a large purchaser of meat for its ships worldwide – investigated killing techniques in 1904 and made recommendations for improvements. But it was not until the Slaughter of Animals Act (1933) that these were implemented to any extent.[41]

The Modernization of Death

The original Napoleonic abattoirs that were opened in Paris in 1818, and later in other cities, were of strategic advantage in supplying the French army with protein. But it is the emergence of modern, rationally-planned abattoirs in Europe and North America in the second half of the nineteenth century that has attracted most academic interest. Their significance was at two spatial scales. First, within their often palatial architecture they were heterotopias: withdrawn from the mundane, and responsible for a renewable and limitless cornucopia of bloody flesh.[42] The designed-in inspectability was an important factor in their popularity with urban authorities, although for obvious reasons the butchers liked them less and resisted them strongly in many cities.[43]

Second, within the city as a whole, the abattoir was generally pushed towards the edge, to a neutral space that was neither urban nor rural.[44] Here society's growing queasiness and guilt about the killing of animals could be mitigated because it was out of sight and out of mind. Certainly, in Victorian visionary utopia, slaughter-houses were marginalized. For instance, Buckingham in his model city had them 'removed some distance from the town', along with the cattle market, reservoirs for sewerage, and tan-pits.[45] Something similar was dreamed of by William Morris in *News from Nowhere* and Benjamin Ward Richardson in his *Hygeia*.[46]

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40 Royal Commission for Inquiring into State of Large Towns and Populous Districts: First Report, Part I, P.P. 1845 (602) xviii.46.

41 Burt 2006b, McLachlan 2008.

42 Lee 2008: 6.

43 Otter 2008b.

44 But these locations often became absorbed into the city fabric due to rapid urbanization.

45 Buckingham 1849: 185 and 207.

46 Richardson 1876, Morris 1890.

> The slaughter-houses of the city are all public, and are separated by a distance of a quarter of a mile from the city. They are easily removable edifices, and are under the supervision of the sanitary staff … All animals used for food … are subjected to examination in the slaughter-house, or in the market, if they be brought into the city from other depots. The slaughter-houses are so constructed that the animals killed are relieved from the pain of death. They pass through a narcotic chamber, and are brought to the slaughterer oblivious of their fate. The slaughter-houses drain into the sewers of the city, and their complete purification daily, from all offal and refuse, is rigidly enforced … The buildings, sheds, and styes for domestic food-producing animals are removed a short distance from the city, and are also under the supervision of the sanitary officer; the food and water supplied for these animals comes equally, with human food, under proper inspection.[47]

Patrick Joyce sees the public abattoir as symbolizing a new attitude to death: that it had to be invisible and anonymous, thereby mitigating one of the 'deep anxieties of governing' but at the same time objectifying it and thereby seizing control of nature.[48] Joyce argues that the unreformed cattle markets and slaughter-houses had been perceived as a threat to social order and that producing new, architecturally-designed buildings with routinized and regulated regimes of action was a key aim of larger city authorities in the transition to modernity. He gives a good account of the shift to suburban industrial slaughtering in the second half of the nineteenth century, starting with the opening of the new Metropolitan Cattle Market in London (1855), the Union Stock Yards in Chicago (1865) and La Villette, Paris (1867). Chris Philo adds that slaughter-houses were among those institutions, such as asylums and cemeteries, that were removed because of their troubling association with madness or death; and they were among the features of the Victorian cityscape that were thought to be responsible for the spread of disease.[49] But these geographical otherings or 'exclusions' were balanced by 'inclusions' of animals that were considered acceptable, notably pets, and also, from the 1820s, by ethical debate and action concerning cruelty and animal welfare.[50]

Abattoirs were public, regulated spaces where the slaughter trade in theory was monitored and controlled in order to ensure that it measured up to the new science of hygiene. This was a very different world from the chaos of Smithfield and the dingy and sordid private slaughter-houses that encircled it like flies around a rotting carcase. Abattoirs were 'part of the engineered landscape around which

47 Richardson 1876.

48 Joyce 2003: 77.

49 Philo 1998, Otter 2008a.

50 The Society for the Prevention of Cruelty to Animals was founded in 1824 and received its royal warrant in 1840.

abstractions like 'national health' would gather meaning'.[51] Chris Otter articulates a vision of modern abattoirs in which the animals are humanely stunned and dispatched, their carcases handled as little as possible.[52] There was also introduced a mechanized process of dismemberment but in most countries this was a twentieth century achievement, post-1945.[53]

Abattoirs were also exemplars of a new type of industrial process, with two motivations. The first was the felt need for greater hygiene in both the slaughter-house and the meat cutting plant. The second was the creation of organizational efficiencies, such as economies of scale. After all, it was from the 'disassembly lines' of the Chicago meat packers that Henry Ford got his idea on how to plan his car factories with attention to time and motion.[54] In America it was capitalist entrepreneurship, in the shape of the stockyards and meat-packing plants in Chicago and Cincinnati, which drove forward the modernization of killing and mechanized butchering.[55] Workers here were less skilled than those in the smaller rural slaughter-houses and their working conditions were often wretched but the sheer scale of operations amounted to an industrialization of death. Upton Sinclair's extraordinary book, *The Jungle*, about Chicago's meat packing industry, published in 1905, coincided with public concern about poor standards of meat hygiene, especially the spread of zoonotic diseases such as trichinosis and tuberculosis.[56] The publicity for Sinclair's exposé of filthy and heartless methods of slaughtering and the low quality of product reaching the consumer was enough to force the passing of America's first Pure Food and Drug Act the following year.[57]

It would *not* be correct to see the abattoir idea as carrying all before it. There was resistance to the centralization and standardization implicit in bringing slaughterers and butchers into large-scale facilities, partly because of worries by vested interests about the loss of restrictive practices and the increase in quality-surveillance at a time, in the mid and late nineteenth centuries, when cattle disease was rampant and there were significant losses from diseased meat.[58] Berlin did not have a modern abattoir until 1881 and innovation in England was slower even than Scotland.[59] The main reason for this stagnation was the strength in local politics of the various actors in the meat trade, who combined against the establishment of modern, centralized facilities for selfish reasons of business survival. The number of abattoirs opening did gather pace towards the end of the nineteenth century, after decades of making do with dirty, cramped and ill-designed buildings. By

51 Otter 2004, 2006: 528.
52 Otter 2008a: 96.
53 Collinge 1929.
54 Ford 1922: 78.
55 Cronon 1991.
56 Sinclair 1905.
57 Young 1985.
58 MacLachlan 2008.
59 Brantz 2008, Perren 2008.

1892 there were 48 municipally-owned and controlled facilities in Britain but this did not mean that they would necessarily replace private slaughter-houses.[60]

The original Parisian abattoirs were supplemented in 1867 by the opening of a vast new market and meat processing facility at La Villette. This was designed in a similar spirit of architectural modernism as Les Halles and represented an important step in the town planning – the Haussmanization – of Paris.[61] But large-scale did not necessarily mean efficient. The layout and practices in La Villette are said to have remained archaic and the whole amounted to little more than 'an agglomeration of private butchers stalls' that were unhygienic and poorly regulated.[62]

The political significance of market organization and architecture in the early modernization of urban food systems is brilliantly captured in Emile Zola's novel, *Le Ventre de Paris*.[63] In this the hero is an escaped political prisoner, Florent, who was deported to Cayenne after the 1848 revolution and has returned, penniless, to the corruption and conspicuous consumption of Second Empire Paris. Zola used an engaging naturalistic style which persuaded the reader that, through his innovative technique, he was seeking to mirror the earthquake of socio-political change that he was describing. Claude, a counterpoint character in the novel, saw the newly opened pavilions of Les Halles, designed by Baltard, as 'that colossus of ironwork, that new and wonderful town … the embodiment of the spirit of the times'.[64] But to Florent the buildings were more like

> some gigantic modern machine, some engine, some cauldron for the supply of a whole people, some colossal belly, bolted and riveted, built up of wood and glass and iron, and endowed with all the elegance and power of some mechanical motive appliance working there with flaring furnaces, and wild, bewildering revolutions of wheels.

To Florent's revolutionary eye, Les Halles

> appeared symbolical of some glutted, digesting beast, of Paris, wallowing in its fat and silently upholding the Empire. As he walked in the market he seemed to be encircled by swelling forms and sleek, fat faces, which over and over protested against his own martyr-like scragginess and sallow, discontented visage. To him the markets were like the stomach of the shopkeeping classes …[65]

60 Otter 2006: 529.
61 Brantz 2001.
62 Claflin 2008: 31.
63 Originally published in 1873.
64 Zola 1996: 34.
65 Zola 1996: 182.

Florent is used by Zola as part of the well-known mid-century discourse of the 'fat' (gras) and the 'thin' (maigre), the fat representing the moral depravity of satiety at a time when malnutrition remained common in the slums; but there is another theme in the planning of the markets.[66] Zola reproduces a common contemporary view, very much found also in London, that urban projects should be used as a means of cleansing the city, sweeping away dirty and diseased housing in order to regenerate on the basis of rational order and cleanliness.[67]

We may read across from Les Halles to La Villette, a similar contemporary project, and indeed to the architectural designs in London of Horace Jones – Smithfield Meat Market (1868), Billingsgate Fish Market (1877), and Leadenhall Market (1882). They all represented a 'symbolic potency' where the charivari of the street had been tamed or excluded.[68] They had rules, they had opening hours, they generated revenue, they could be inspected, and they could be kept clean. Even their monumental architecture was a coded message of control.

Bermondsey: 'Land of Leather'

In an important, agenda-setting comment some years ago, Martin Daunton called for an 'ecological history' of London's industry.[69] As one way of classifying factories and workshops, he saw a distinction between those that were clean and those that were polluting, and he firmly placed the history of the 'mass of dirty trades' south of the River Thames. The present chapter makes a small contribution to Daunton's ecological history by arguing that it is important to look in greater depth at the transformations of living organisms into industrial raw materials. In this sense, an ecological history of industry should start with the uses of animal bodies.

In what follows, it will become clear that certain elements of nineteenth-century London's blood and guts industries were locationally concentrated. It seems either that they gained an economic advantage by association or that their proximity was imposed upon them because of their 'noisome' characteristics. South and East London both had clusters of tanners, soap makers, gut scrapers and other 'noxious' industries, mainly operating at the workshop scale, but with some in the larger manufacturing units that were developing.

George Dodd called Bermondsey, on the south bank, the 'land of leather'.[70] The lives of the city's animals generally ended elsewhere, and it fell to this district to preserve for posterity their 'useful' vestiges. Skin and hide, for instance, when fossilized by the tanning process, were used to shoe the human population, bind

66 Scarpa 2000.
67 Johnson 2004.
68 Joyce 2003: 83.
69 Daunton 1996: 3–4.
70 Dodd 1842: 17.

their books, and provide drive belts for their machinery. Leather was absolutely central to the British economy: in the early nineteenth century it ranked second only in industrial turnover to textiles.[71] As Riello comments, it 'exemplified the complexity of the boundaries of what has been defined as an "organic economy"'.[72] In other words, the cluster of industries in Bermondsey was a key passage point through which animal organicism was processed into the human realm.

Noisome and noxious trades such as tanning started to be excluded from the intra-mural parishes of the City of London as early as the fourteenth century, not only from its physical neighbourhood but also from within the range of smells and airborne pollution.[73] In the late fifteenth century one branch of leather preparation, the white tawyers, were specifically sent to Southwark and Bermondsey, the journey across London Bridge apparently being a psychological threshold of banishment to the 'other' London. In this new setting they were at least able to continue enjoying 'the freedom of the City, although residing outside, inasmuch as they cannot exercise their art within the same without annoying their neighbours'.[74] As a result of many other forced migrations, which included services such as theatres and brothels, the south bank of the river gradually acquired a bad name as being polluted, poor and morally dubious.

An initial factor in Bermondsey's favour was the availability of sufficient water in the tidal streams of the Neckinger system to facilitate the processing of hides, but this was no more determining than were the sources of bark, another vital input.[75] It was this complex of slimy ditches that Dickens described when Oliver Twist visited Jacob's Island.[76] Poverty and pollution went hand in hand in this, one of the worst of London's many slums. According to Dodd, 15 years later, the area was still 'no credit to our sanitary age' and Bermondsey generally had a reputation for smells and a degraded urban environment.[77]

''What *is* this smell?;' 'Oh it's the leather'. 'But what is that *other* smell?' 'Oh, that's the glue!'' This was Dodd's impression of Bermondsey, which, by the time of his writing, had been the centre of English leather industries for centuries.[78] Here was such a concentration of tanners, curriers, fellmongers and skin dealers that this one small district was widely known and of significance nationally and internationally. As a result, it was monitored by investigative journalists, statistical surveyors and any number of voyeurs trying to understand the horrific essence of the animal industries there. Henry Mayhew, for instance, noticed a profusion of trades:

71 Church 1971.
72 Riello 2008: 75.
73 Beier 1986: 157, Barron 2004: 264.
74 London Letter Books, folio 133b, Ordinance 27th February 1478.
75 Malden 1912, Christy 1925, Hoover 1937.
76 Dickens 1838.
77 Dodd 1853: 463.
78 Ibid.

> On every side are seen announcements of carrying on of the leather trade … The signboards announce, in thick profusion, dealers in bark, tanners, curriers, French tanners and curriers, leather-dressers, morocco and roan manufacturers, leather-warehousemen, leather factors, leather dyers, leather enamellers, leather sellers and cutters, hide salesmen, skin salesmen, fellmongers, tawers, parchment makers, wool factors, woolstaplers, wool warehousemen, wool dealers, wool dyers, hair and flock manufacturers, dealers in horns and hoofs, workers in horn, glue makers, size makers, and neat's-foot oil makers.[79]

Bermondsey, then, was one of London's many specialist industrial districts but unique in making possible, indeed encouraging, a human dependence upon animalness. A virtue was made here of a clustering of trades that were closely related, each one representing a stage in processing or recycling of waste. In death, the animals that fuelled this local economy were utilized to the very last particle of their blood, bone, flesh and skin. All that was left of them was the same pall of offensive odour that had hung over Bermondsey for 400 years. Dead animals here had taken control of the air.

A great deal has been written recently about 'industrial districts'.[80] Following the ideas of Alfred Marshall, economic geographers have pointed to the importance of local factors of location, such as horizontal and vertical linkages, along with less tangible social processes like easy communication and the conventions of trust.[81] Together, these ensure that the whole is more than the sum of its parts. The type of vibrant localities described have been identified in northern Italy and in other countries, and their flexibility and their adaptability have led to them acquiring the label 'learning regions'.

Bermondsey's animal industries met some of the criteria of Marshallian districts, but not all. They had little scope for scale economies in the early nineteenth century and they seem to have been owned on the whole by local entrepreneurs who shared a pool of trade skills. They were not especially attractive to innovation-seeking capital because their production processes were so firmly embedded in the organic nature of their raw materials. Intra-district trade was vital, with each successive trade in the processing of hides providing the raw material of the next. Labour seems to have been skilled or semi-skilled, but wages were low due to a system of piece-mastership and there were regular lay-offs when trade was slack.[82] There was, of course, in London, a vast supply of ox and cow hides from the many slaughter-houses and wholesale butchers, along with those imported. Under the

79 Mayhew 1850.

80 Asheim 2000.

81 Marshall 1920.

82 Piece-masters were contracted by the employers and they, in turn, hired the necessary labour. This system was open to abuse. Skills were of a higher order in the leather finishing trades than in tanning. Booth 1903.

Flaying Act (1803)[83] these had to be taken for inspection, mainly to Leadenhall,[84] but from 1833 onwards sheep and calf skins were traded in the new leather market in Bermondsey, one of the largest in Europe.[85]

The district's profile fits that predicted by Scott and Walsh:

> The literature suggests that Marshallian externalities are likely to be of particular importance for mature industries not subject to rapid technological change, which gain important benefits from access to pools of local trade knowledge and long-term cooperative relationships fostered through repeated interactions between firms.[86]

But there was none of the institutional density here expected of Marshallian districts. On the contrary, the South Bank was bereft of the gild and local authority strength of its dialectical other, the City of London.

Most of the eighteenth-century Bermondsey tan-yards were modest in output but, because of their need to have open sites, each with maybe 100–150 pits, their footprint in the townscape was extensive.[87] This created unfavourable ratios between, on the one hand, the rents they paid and, on the other, their employment and turnover. In the 1820s there were 164 leather firms in London insured with fire offices but 80 per cent of them had a capital of less that £3,000.[88] One problem throughout the eighteenth and early nineteenth centuries was that the tanning of the thicker hides was a very slow process, taking as much as 18 months in some cases before they could be passed on to the currier.[89] It is hardly surprising, therefore, that speculative entrepreneurial energy and capital were at first drawn elsewhere.

The 1851 census contains detailed occupational information for each district of London. Table 4.1 selects the industries associated with animal by-products and demonstrates clearly the prominence of the South Bank and the East End. A location quotient of >1.0 shows a concentration above the national average.[90] Some of the figures are astonishingly high, for instance those in Bermondsey for tanners, fellmongers and curriers, and must be amongst the highest for any industry in the capital or any other city at this date. By way of comparison, the 1911 location

83 43 Geo. III, c.106.

84 See the evidence given to the Committee on the Bill to Repeal Acts Relating to Use of Horse Hides in Making Boots and Shoes, P.P. 1826 (323) vii.183.

85 Dodd 1842, Greenwood 1867.

86 Scott and Walsh 2004: 115.

87 Spate 1938.

88 Barnett 1998: 67, Riello 2008.

89 Burridge 1824.

90 Ball and Sunderland 2001 also use location quotients but they compare London as a whole with the rest of the country. As a result, they miss some of the extraordinary concentrations discussed here.

quotient for the Borough of Bermondsey in skins and leather was 14.2, indicating a steady decline in concentration in the second half of the nineteenth century.

The 1870 factory returns record the number of large tanning and currying establishments around the country.[91] The problems with this source are well known and so we cannot draw definitive conclusions, but the county of Surrey – for which read Bermondsey – was listed as having eight out of 50, and 1,149 employees out of 5,644 for the country as a whole.[92] According to James Statham, this date was the high tide of tanning in Bermondsey, although he goes on to establish that light leather goods manufacture and merchanting continued to congregate here well into the early twentieth century.[93]

Vertical integration in leather manufacture had been prohibited in theory by a statute of 1603 that was not rescinded until 1830.[94] The leather trades were nevertheless interlinked horizontally and co-presence was therefore an advantage and provided agglomeration economies. The skin-dealer, the fellmonger, the tanner, the currier and the leather cutter and dresser all worked in series, and the Bermondsey cluster also included their suppliers, such as skin-dealers, bark peelers and bark shavers. In addition, end users of leather were numerous locally, such as shoe-makers, leather enamellers, gilders, stampers and stainers, the saddle and harness trades, glovers, makers of leathern pipes, buckets, jackets, hats and caps, and makers of luggage, pocket-books and various other trades such as bookbinders and upholsterers. In addition, there were the users of by-products and waste, such as wool-staplers, flock mattress-makers and glue and size makers, and there were also parchment makers and the various hair trades that sourced their raw materials here.

Tanners processed the thicker hides, for instance those of cattle and horses, used in shoe soles and harness, whereas the fellmongers and leather dressers specialized in the suppler skins of other species. It was the thinner sheep and goat skins processed by the fellmonger that became 'Morocco' leather for coach-linings, chair-covers, book-binding and ladies' shoes, 'roan' for shoes, slippers, and common book-binding and 'skiver', an inferior leather, for hat-linings, pocket-books, work-boxes and toys.[95] Kid and lamb skins went for gloves and shoes, and sheep and deer skins became chamois wash leather.[96]

It was well into the nineteenth century before large leather factories emerged.[97] In 1851 Bermondsey was home to about one-third of the country's leather industry

91 Return of Number of Manufacturing Establishments in which Hours of Work are regulated by Act of Parliament in each County of United Kingdom, P.P. 1871 (440) lxii.105.

92 Jenkins 1973, 1978.

93 Statham 1965.

94 1 Jas I, c. 25. Select Committee on Petitions Relating to Duty on Leather, P.P. 1812–13 (128) iv.609. Evidence of Mr Brewin.

95 Dodd 1843: 162.

96 Watt 1906.

97 For the chemical processes applied in the second half of the nineteenth century, see Stevens 1890, Procter 1893, Watt 1906, Bennett 1920.

employees and most of those in London.[98] It seems to have specialized at this time in shoe leather.[99] In the mid nineteenth century, Hepburns of Long Lane was formed from what had been five separate tanneries shown on Rocque's map of 1746. By 1850 they were one of the largest operations in London, tanning over 45,000 bullock and 10,000 horse hides a year, as well as a number of calf skins. Their 250 employees compared with the 85 of the more famous Bevingtons of Neckinger Mills, who eschewed bullock hides for the thinner and softer leathers of seal, deer, lamb and kid. Bevingtons used sumach (*Rhus coriaria*), alum, the yoke of eggs and various oils in what strictly speaking was not tanning but leather preparation, and in this way they processed about half a million skins a year.[100] A third Bermondsey factory was that of Learmonth and Roberts, who employed 290 tanners and dyers to produce high quality morocco leather. Their throughput was 350,000 calf, sheep, deer and goat skins a year.

Tanning had a reputation for being amongst the dirtiest and most malodorous of trades. One reason for this was that hides often arrived in a state of advanced putridity and the first task was 'fleshing' or removing the fat adhering to the inside. Second, the hair on the outside was loosened either by immersion for a few days in a solution of quick lime or by putting the skin in a closed chamber to encourage fermentation. Again, the subsequent scraping created offensive smells that would have been unacceptable in most other parts of London. Third, the 'pelts' were softened or 'mastered' for a short period in a solution of hen, pigeon or dog faeces[101] and, finally, they were steeped for months in pits and cisterns in a chocolate coloured 'ooze' that contained a tanning agent such as oak bark.[102] They were then hung up to dry, and beaten or rolled to make them supple and ready for further dressing by a currier, whose job it was to make leather smooth, flexible and waterproof.[103] Up to a third by weight of a currier's output was the various oils that were added to the leather.[104]

Far from being a learning region of the industrial districts literature, Bermondsey was more about forgetting. In Foucault's terms it was a heterotopic space, a parallel world where the norms of society were in a sense suspended. Here were the essential processing and manufacturing animal industries but their smells and polluting waste products could only be tolerated at a distance.

98 Sheppard 1971: 161. Sources for this statement include the population census and Kelly's directories.

99 Select Committee on State of Laws relating to Manufacture of, and Duties on, Leather, P.P. 1816 (386) vi.99.

100 Bevington 1993.

101 In London there were professional collectors of dog mess. Mayhew, 1861 edition, vol. 2: 142, Turvey 2000: 4.

102 Aikin 1836, Herbert 1836, Mayhew 1850, Collins 1876, Ballard 1878: 182–99, Clarkson 1983, Procter 1903, Wood 1912.

103 Tomlinson 1854.

104 Statham 1965.

Table 4.1 1851: Districts of London with high concentrations of employment in selected animal industries

Occupation	London districts
Soap boiler	St George in the East (13.1), Whitechapel (10.2), St George Southwark, Shoreditch, Stepney, Camberwell
Tallow chandler	Lambeth, St Saviour Southwark
Comb maker	Bethnal Green, St George Southwark
Others dealing in grease and bones	Bermondsey (13.6), Holborn, Whitechapel, Shoreditch, Clerkenwell, Bethnal Green, St George Southwark,
Fellmonger	Bermondsey (42.0), St Olave Southwark
Skinner	Bermondsey (17.6)
Currier	Bermondsey (41.7), St Olave Southwark, St George Southwark, Newington
Tanner	Bermondsey (62.6), St Olave Southwark
Other workers in Leather	Bermondsey (25.3), Clerkenwell (14.6), St Luke (10.1), St Saviour Southwark, Strand, Shoreditch, City of London, St Giles, Newington, Camberwell, St Olave Southwark
Feathers, quills	St George Southwark (18.5), St James Westminster (12.5), Whitechapel (13.9), Shoreditch (10.0), Bermondsey, Holborn, Newington, Bethnal Green, Camberwell, St Luke, Islington, City of London, Strand, St Pancras, Clerkenwell
Hair manufacture	Bethnal Green (15.8), St Luke (14.9), Shoreditch (13.8), Bermondsey, Whitechapel, St George Southwark
Brushes and brooms	St George Southwark (12.1), Clerkenwell, Newington, St Luke, Shoreditch, Bethnal Green
Other workers and Dealers in hair	St George Southwark, St Olave Southwark

Source: Population census

Note: All of the districts listed have a location quotient over 5.0, and those over 10.0 are shown in brackets

Because these functions were beyond scrutiny until the mid nineteenth century, they retained a certain transgressive and destabilizing potential. The district was a portal into the profane world of dead animals; it was brought into existence as a dustbin into which were swept the left-overs of the re-orderings of city space that were responsible for gradually crystallizing the features of modernity.[105] This industrial cluster was therefore formed as a result of the spatial play of difference and deviance.[106]

105 Hetherington 1997.
106 Cenzatti 2008.

For all its frantic processing and manufacturing activity, it is really no surprise that this was the poorest part of London and a district without a voice.[107] Even the ancient common law of nuisance did not operate here, because, as one judge declared, 'what would be a nuisance in Belgrave Square would not necessarily be one in Bermondsey'.[108] What one has to remember about nuisance is that the plaintiff had to pay the costs of bringing an action and in poor areas, where employment opportunities were limited to the very workshops that were producing noxious vapours, smoke, smells and noise, it is hardly surprising that cases were few. Anyway, according to Brenner and Hamlin, the very definition of nuisance had undergone a sea-change in the nineteenth century that favoured industrialists.[109]

The spatial organization of the leather trades was restructured in the nineteenth century. The dominance of London waned in the face of competition from northern industrial cities, particularly Liverpool and Leeds. Various factors were involved, including changing routes of hide imports, and lower port charges and cheaper rents for large tanning yards in cities such as Liverpool.[110] In addition, the innovation of chemical means of processing leather overcame the time barriers implicit in traditional tanning methods, and capital therefore became more involved.[111] But Bermondsey gradually declined as a leather centre once the organic lock-in at the heart of its success had gone. Also its markets were changing, particularly when demand for leather goods for horses (saddles and harness) disappeared at the beginning of the twentieth century. One saving grace was that, in terms of volume, shoes were the main destination of British leather, about half in the 1830s, rising to 80 per cent in the early twentieth century.[112] People were buying more shoes at the latter date but shoe leather was not enough to save Bermondsey.

Other trades followed suit as their path dependency had directly or indirectly been linked to leather.[113] Take the strange case of hats. In the first half of the nineteenth century, Bermondsey was London's centre of hat manufacture. Christy's of Bermondsey claimed in 1841 to be the world's largest hat factory, producing a quarter of a million hats a year and employing about 500 operatives.[114] These were the felt or beaver hats that were popular in the early nineteenth century. But by 1850 beaver was being replaced by silk and eventually both the fashions and the jobs moved elsewhere.[115] The centre of gravity of hat-

107 Green 1995.

108 Brenner 1974: 414.

109 Brenner 1974, Hamlin 2002.

110 Booth 1903, Church 1971.

111 Bennett 1909.

112 Church 1971.

113 For more on lock-in and path dependency, see Belussi and Sedita 2009.

114 Sheppard 1971: 161.

115 Brayley 1850, vol. 5: 27–8. Beavers were being hunted to near extinction in many parts of North America and so the raw material was becoming rare and expensive.

making shifted westward to Southwark St George and St Saviour, where labour was cheap and plentiful. There was no longer a need for close proximity to the furriers and curriers of Bermondsey.

David Green has argued that London's industrial prosperity was unstable, with many fluctuations in individual sectors.[116] He and Paul Johnson have shown that, apart from agriculture and mining, London's mix of industries was not unlike the national profile, and that the presence of small workshops was a sign of a flexible, not an archaic, economic structure.[117]

In the mid nineteenth century Bermondsey was also home to most of the glue-making in London.[118] This was because the raw materials were readily at hand in the tan yards. First there were the so-called 'wet' materials such sheep-pieces or 'spetches' from fellmongers; 'fleshings' from leatherdressers and tanners; roundings of hides previously limed; animal ears; portions of bones to which tendons were still attached; and the clippings of salted and alumed skins used for covering cricket balls. Second, 'dry' materials included damaged pelts; salted ox feet; calves' pates; horn 'sloughs' – the pith or core of horns; clippings and roundings of parchment; glue pieces from fellmongers, leather dressers, tanners, and trotter boilers; rabbits' pelts and shreds from furriers.[119] These raw materials were first limed, then washed in tanks or pits, and dried on racks. After that they were boiled in huge vats.[120] In one factory in Bermondsey that Ballard visited, 12 tons of fleshings were boiled with one ton of water, yielding about 1.25 tons of glue. The liquid glue was drawn off and allowed to solidify into lumps, before then being dried in a heated chamber. The residue, known as 'scutch' was raked out of the pan and sent to a local manure factory.[121] In the twentieth century animal glues were replaced by vegetable-based adhesives (starch and starch products) and casein from milk. Bermondsey's role in this particular industry therefore largely disappeared.

Fat, Blood and Bone

The dismembered urban animal had lost its life but not its value; and meat was only part of that value. Animal by-products were an integral and essential part of the butchering industry.[122] Take offal, for instance. This represented 40 to 45 per cent of the body weight of British cattle in the mid nineteenth century, and

116 Green 1996.
117 Johnson 1996.
118 Dodd 1842: 30.
119 Ballard 1878: 202–6.
120 Lambert 1905.
121 Ballard 1878.
122 Cronon 1991: 251. In the Chicago meat packing industry no body parts were wasted and the sale of hides, fat and meat scraps represented the difference between profit and loss.

Table 4.2 Weight of the body parts of fat cattle

Body parts	Weight in lb.	
	Simmonds (1873)	**McConnell (1897)**
Hide and horns	32–56	90–100
Tallow	24–80	72–319
Head and tongue	16–28	40–51
Kidneys	2–4	–
Back collop	2–4	–
Heart	6–9	6–7.5
Liver, lungs, windpipe	12–16	28–30
Stomach and entrails	80–112	50–81
Contents of stomach	–	180–220
Blood	24–32	42–56
Meat	–	428–522
Bones	–	87–186
Spleen	–	3–3.5
Diaphragm	–	6–7.5

respectively one-third for pigs and a half for sheep and horses.[123] For fat cattle, the breakdown is shown in Table 4.2, although Simmonds and McConnell clearly had different ideas about the total weight of a fat beast.

An important point to make here is that offal was not regarded as 'waste' in poor households. Apart from the ever popular black pudding and tripe, other organs and body parts were valued and popularly thought to be nutritious, not as delicacies as in some countries but as basic foods.[124] Thomas Archer, writing about pauper lives in Shoreditch and Bethnal Green in the 1860s, celebrated the role of such food in the diet:

> I have already mentioned the shops for the sale of offal. Many of these may supply some really good articles of food – amongst which may be classed cows' heels and those baked sheep's heads, the appetising steam from which, as they frizzle in the long japanned kettles, salutes the nostrils of many an expectant family who have been hungry all the week, and look forward to this as the crown and reward of their week's work on Saturday night. It may readily be believed that in a business where all the family must, if they are fortunate enough to

123 Dodd 1856: 217.

124 Over 600 tons of black puddings, polonies and saveloys were sold from London cookshops every year. Gordon 1890.

> obtain employment, help to keep the wolf from the door – the cookshop is a convenient substitute for the kitchen of more favoured households.[125]

But the non-meat part of carcases had many uses beyond food. As far as blood is concerned, for instance, its peak of use in London was probably in the 1850s, when 800,000 gallons were collected and processed annually. By far the largest portion of this was converted into concentrated agricultural and gardening manure.[126] In addition, the albumin in the serum was used in clarifying wine and cider and as a mordant for fixing the colours in dyes. The haemoglobin was employed in the manufacture of the pigment 'Turkey Red'.[127] Blood was also valuable in the preparation of adhesive cements, as a thickener for heavy duty paints, an ingredient in the bleaching process, and as an additive in stucco.[128] There was also a predecessor of Bakelite, known as 'bois durci', that was made of a mixture of cattle blood and sawdust, heated and pressed into moulds.[129] It was manufactured in Paris from the 1850s until the 1920s.

Scientifically, blood came to be known through the 'animal chemistry' of Berzelius and Liebig in the early nineteenth century and, following the work of James Blundell in the 1820s and 1830s, it was the subject of medical experiments with transfusions.[130] Animal to human xeno-transfusions had been tried in the eighteenth century and continued to be advocated in Germany as late as the 1870s. This belief in the potential of animal bodies as raw material for human health is paralleled in the apparent popularity of visiting abattoirs to drink warm blood. Many such people were suffering from anaemia or from tuberculosis. In 1875 Lafacadio Hearn in his journalism for the *Cincinatti Commercial* described a similar daily ritual:

> It may not be generally known that, like New York, Cincinnati has its blood drinkers – consumptives and others who daily visit the slaughter-houses to obtain the invigorating draught of ruddy life-elixir, fresh from the veins of beeves … Lowensteins, on John Street … has perhaps half a dozen visitants … Between the hours of two and four o'clock almost any afternoon, the curious visitor may observe many handsomely dressed ladies and others enter the cleanly, well-kept establishment in question, and waiting, glass in hand, for a draught of crimson elixir yet warm from the throat of some healthy bullock. Just as soon as the neck of the animal is severed by one slash of the 'schochet's' long blade, glass after

125 Archer 1865: 17–18.
126 Simmonds 1873: 77.
127 Simmonds 1877, Ballard 1878.
128 Dodd 1851: 383.
129 Campbell 2006: 118.
130 Coley 2001, Pelis 1997, 2001.

> glass is held to the spouting veins and quickly handed to the invalids, who quaff the red cream with evident signs of pleasure, and depart their several ways.[131]

In addition to blood, animal bones were also valued, so much so that their importation increased, and this caused nuisances from the bone vessels in the Port of London, from which 'the smell was exceedingly sickening, and was perceptible at a great distance'.[132] The majority of domestic supplies of bones came from cities because that was where the slaughter-houses were situated until their better regulation in the later nineteenth century. A principal use of bones was in powdered form as an agricultural fertilizer and also phosphorus extracted from bones was a key raw material of the match industry.[133] The Medical Officer of Health for Rotherhithe reported in 1857 that

> in the mile length of Rotherhithe Street there are no less than nine factories for the fabrication of patent manure [superphosphate], that is to say, nine sources of foetid gases. The process gives out a stench which has occasioned headache, nausea, vomiting, cough, &c. Many complaints have been made by the inhabitants.[134]

The bones were ground/milled into different sizes: inch bones, half-inch bones and bone-dust.[135] The vast majority were then boiled in order to extract the oil and most of the gelatine, both of which were sold on to candle and soap makers.[136] Other uses included bone ash, prepared by calcining bones and powdering them, and animal charcoal or bone black, which was used by sugar refiners and in black paint, inks and dyes.[137] Animal charcoal was also a component in water filters.[138] A final use of bone was as a material for knife handles and other articles.[139] Two million ox shank bones were used in Sheffield each year for knife-handles and spoons, for instance. They were also made into tooth brushes, combs and fans.[140]

Gut scraping was another of the most objectionable of animal-related trades in towns. The intestines used were usually those of sheep and pigs and the products varied from sausage skins to the catgut spun for violin strings, tennis rackets

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131 Hughes 1990: 197–8, 338.

132 Royal Commission on Improvement of Health of Metropolis, Minutes of Evidence (Ch: Robert Grosvenor), P.P. 1847–8 (895) xxxii.60.

133 Barles 2005.

134 Jephson 1907: 114.

135 Dodd 1851: 398–99, Ballard 1878: 262–4.

136 From the 1870s onwards gelatine was used in photographic emulsions and as a gelling agent in food processing.

137 Lambert 1913.

138 Late in the nineteenth century bone was replaced by cheaper and less smelly alternatives. Barles 2005.

139 Desrochers 2001.

140 Simmonds 1877: 146.

and certain types of machinery. The 'scraping' was the handy work of someone, usually a woman, who passed the gut between her fingers from one tub of water into another, pushing the contents along with a wedge-shaped wooden tool. The process was repeated until the gut was clean and it was then soaked in brine for over a week, followed by a spell in cold water. For spinning, a number of guts were interwoven for added strength, as many as 700 together for an industrial-strength rope. Finished strands of catgut were bleached, stretched and dried on a frame for a number of days. Only the best quality guts were used for musical instruments.

> Speaking generally-of gut-scraping and gut spinning establishments … they are the most intolerable of nuisances wherever they may chance to be located. Within the workshops the stench is inconceivably horrible: few persons unaccustomed to it could bear to remain for a single minute in some scraping rooms that I have visited, and I myself have sometimes had a difficulty to restrain vomiting and to carry on the inquiries I was bent upon. The stench, after I have been in some of them for twenty minutes or half-an-hour, has so pertinaciously attached itself to my clothing and hair, that only repeated ablutions have removed the odour from my hair, and my clothing has retained the stench for days. It spreads from the workshop and yard all round the neighbourhood, and often gives rise to such loud complaints that local authorities in some towns have insisted upon entire removal …[141]

Some of the smell was due animal fats boiled down from the waste portion of carcases processed in city slaughter-houses and scraps – so-called 'town stuff' – collected from butchers and tanners.[142] This was mostly cattle and sheep fat; pig fat, or lard, was too expensive. 'Kitchen stuff', essentially domestic scraps, was also used, suggesting that the quality and condition of the inputs fats was not a key consideration. These materials were first rendered by boiling in large copper vats, in order to remove impurities, and then boiled again for several days with a caustic alkali to achieve saponification: sodium or potassium hydroxide for hard and soft soaps respectively. George Dodd described the large works of Messrs Hawes in Southwark, which made 2,000 tons of soap and 800 tons of candles annually.[143] Their prosperity had been boosted by gradual reductions in the soap duty (1833–52) and changes in ideas about personal hygiene, which together increased demand. Soap factories were still found in most towns in the middle of the nineteenth in the same way that slaughtering was universal.[144] But eventually the mass-market success of

141 Ballard 1878: 256–7.

142 Anon. 1818: 355–61, 382–7.

143 Dodd 1843: 187–202. See also Brayley 1850, vol. 5: 40–42. Other large works were located in Lambeth and Wandsworth, also in south London.

144 London manufacturers produced 20.8 per cent of British dutiable soap in 1835 and 22.4 per cent in 1845. Soap: accounts of soap made in each town in Great Britain, P.P. 1836 (292) xlv.635; P.P. 1846 (81) xliv.413.

Gossage and, later, of Lever Brothers, increasingly using vegetable oils with better lathering properties, ruptured the local connexion with animal fats and solved the many complaints about smells. Scale was an advantage in soap-making because of the increasing need for capital investment in heating and refining technologies.[145]

In the late 1870s Edward Ballard visited 60 fat melting, candle dipping and soap factories. By then there had been a decline in tallow candles, which were being overtaken by gas lighting, the increased use of vegetable fats, and the discovery of paraffin wax. The tallow came from the stearin in animal fat and it was cheaper than wax, but its disadvantages were smell and a low level illumination in an age when 'the desire for brilliant lighting is insatiable'.[146]

Knackers and Other Animal Industries

There is one estimate that 400 horses died of exhaustion and disease on the streets of London each week.[147] The figure is difficult to verify but certainly incidents of horses collapsing were common and not considered as horrific as they would be now. The dead horses rarely lay for long.[148] Rigor mortis reduced the value of the carcase, so the knacker took possession quickly. Worn out horses were also delivered to knackers' yards by 'crock collectors', being walked through the city in strings of up to 15 at a time, nose to tail.[149]

In the second half of the nineteenth century there were 20 to 30 horse-slaughterers' yards, mostly clustered in east and south London. They had contracts with the larger users of horses, such as omnibus companies, cab firms, brewers and coal merchants. In the 1890s London's largest knacker's yard was in Garratt Lane, Wandsworth, processing 26,000 horses a year.[150] Their output was 70 tons of dog and cat meat a week, amongst other products. The yard worked 24 hours a day and was the ultimate disassembly line, from which there appears to have been no 'waste' in the sense of useless leftovers. To get a sense of the craft of killing, it is worth recounting a part of Gordon's description.

> In two seconds a horse is killed; in a little over half an hour his hide is in a heap of dozens, his feet are in another heap, his bones are boiling for oil, his flesh is cooking for cat's meat. Maneless he stands; a shade is put over his eyes; a swing of the axe, and, with just one tremor, he falls heavy and dead on the flags of a spacious kitchen, which has a line of coppers and boilers steaming against two

145 Watt 1896, Hurst 1898, Lamborn 1918.

146 Williams 1876, Booth 1903: 115.

147 Simmonds 1873: 56.

148 McShane and Tarr 2007.

149 Mayhew, H. (1849) Letter XIII, *Morning Chronicle* November 30th; [Greenwood] 1883: 106–13.

150 Gordon 1893: 184–8.

Table 4.3 Horse carcase by-products, 1873

Item	Weight (lb.)	Value	Uses
Hair	1	1s. to 1s.3d.	Haircloth, mattresses, bags for crushing oil-seed, plumes
Hide	50	12s.	Tanning, table cloths
Tendons	6	–	Glue and gelatine
Flesh	252	31s.6d.	Dog, cat and poultry food
Blood	60	3d.	Dye and manure
Intestines	25	1s.	Sausage skins
Grease	28	4s.8d.	Candles, soap
Bones	60	4s.6d.	Knife handles, manure
Hoofs	12	10d.	Gelatine, glue, prussiate of potash (potassium ferrocyanide); also made into pincushions and snuff boxes
Old horse shoes	10	8d.	Scrap iron

Source: Simmonds 1873, 56–7.

Table 4.4 London traders in animal waste, 1873

Occupation	Number	Occupation	Number
Bladder and sausage-skin dealers	14	Grease manufacturers for coaches, carts, railway axles, &c.	32
Blood driers	2	Guano merchants	17
Bone dealers, bone boilers and crushers	16	Horn and bone merchants	14
Feather purifiers	12	Ivory-black and lamp-black makers	13
Fellmongers	15	Manure merchants and manufacturers	76
Felt makers	16	Melters and tallow chandlers	46
Gelatine makers	12	Plasterers' hair manufacturers	12
Glue and size makers	14	Scum boilers	2
Glue piece merchants	5	Tanners	54
Glycerine manufacturers or agents	8	Tripe dressers	113
Gold beaters' skin makers	8	Waste ivory, bone, and tortoiseshell dealers	3

Source: Simmonds 1873, 29–30.

> of its walls. In a few minutes his feet are hooked up to crossbeams above, and two men pounce upon him to flay him; for the sooner he is ready the quicker he cooks. Slash, slash, go the knives, and the hide is peeled off about as easily as a tablecloth ; and so clean and uninjured is the body that it looks like the muscle model we see in the books and in the plaster casts at the corn-chandler's. Then, with full knowledge gained by almost life-long practice, for the trade is hereditary, the meat is slit off with razor-like knives, and the bones are left white and clean and yet unscraped, even the neck vertebrae being cleared in a few strokes – one of the quickest things in carving imaginable.

After having their fat extracted, which was used for greasing harness and the wheels of carts, the bones were sent to manure merchants to make superphosphate or to the button-makers. The hoofs went to glue-makers and Prussian blue-makers, but there was also an extensive trade in 'neat's foot oil', a lubricant, and a small outlet for sheep's trotter oil, which was used as hair oil.[151] The tails and manes of the dead horses became the stuffing in furniture and their hides were tanned for a variety of purposes such as carriage roofs and whip-lashes. The average carcase weight of working horses was 905 lb. and this was divided up as shown in Table 4.3.

Since we are taking a broad definition of animal industries, we may also include brush makers. They used bristles and hair to make everything from tooth brushes to hair brushes. Along with fur-pullers and similar trades, this was women's work, often 'put out' to domestic situations rather than in a workshop or factory. Located mainly in east and south London, this was poorly paid labour.[152]

Conclusion

As Paula Young Lee points out, slaughter and the industries associated with animal waste products have rarely been analysed for their cultural politics.[153] This chapter has raised some relevant issues for London and has also added material of an economic nature. As pointed out, there is a great deal of work to be done at the local level and the lowest hanging fruit is undoubtedly the extraordinary animal-intense districts of south and east London, and their equivalents in Paris, Berlin, New York and other major nineteenth-century cities. There are potentially cultural, economic and political insights to be gained here that are urgently required to nuance and problematize our notions of the emerging human-animal, society-nature relations that helped to birth the modern world.

The present chapter has barely scratched the surface of this vast, yet neglected topic. If space had allowed, two further themes could have been explored. The first is the veterinary knowledge and expertise that became associated with urban

151 Simmonds 1873: 50, Ballard 1878: 223.
152 British Weekly Commissioners 1889.
153 Lee 2008: 2.

animals in the second half of the nineteenth century. Anne Hardy has discussed the role of municipal veterinarians in the control of animal disease, and meat inspection to protect human health.[154] We need further research and theorized narratives in order to understand the constructions of knowledge and the application of expert professionalism here if we are to understand this aspect of urban animal existence. Second, zoonotic disease was an often hidden aspect of the blood and guts economy. Here historians have published helpful national-scale accounts but fine-grained research for individual cities deserves further encouragement. In Chapter Five Paul Laxton will touch upon both of these themes.

154 Hardy 2002.

Chapter 5
This Nefarious Traffic: Livestock and Public Health in Mid-Victorian Edinburgh[1]

Paul Laxton

> '*Unwholesome Butcher Meat*. – About a fortnight ago an old cow, belonging to a man resident in the south of the town, was seized with disease. Learning that death would be the inevitable result, Captain Stuart, as laudably anxious to preserve the health of the citizens as to protect their persons and properties, caused a watch to be kept on the carcase. It was skinned and conveyed over to the dog-kennel behind the Castle. Thomas Diet, a fellow of long experience, who can scent out carrion with the eagles, purchased the quarters for 20s., placed them in a cart, and drove off. When passing along College-street, hurrying to get beyond the jurisdiction of the magistrates, horse, cart, quarters, and escort, were seized by Sutherland, the inspector. This was a quantity of the most loathsome carrion ever intended for human use; – the bare sight of it was sufficient to turn the stomachs of a squadron of famished Cossacks. The fellow was tried before the magistrates yesterday, and though he had been repeatedly convicted of the same offence, he was allowed to escape with a fine of three guineas, and the expenses. When incorrigible offenders are allowed to escape in this way – when they are licensed, as it were, at a small expense to overreach the fair and honest dealer – when permitted to poison the people as a quit for picking their pockets, the meritorious exertions of the inspectors are comparatively lost to the community, and profitable only to the person, or body that pockets the fines. This nefarious traffic will never be put down till punishment be awarded, or fines extracted, severe enough to teach the offenders that they will best promote their own interest by dealing in a decent wholesome article'.[2]

Diseased Meat as a *Cause Célèbre*

In December 1864 a pantomime in the Princess's Theatre, Edinburgh, loosely based on the Arabian Nights, amused the audience with topical local references: 'The diseased meat question is particularly referred to,' observed a critic, 'and

1 In the preparation of this chapter I have received generous help and advice from Richard Hunter (Edinburgh City Archivist) and his colleagues, Patricia Jonker-Cholwe (Liverpool University Veterinary Library), Susanne K. Whitaker (Flower-Sprecher Veterinary Library, Cornell University), John Chartres (Leeds University), Ian Maclachlan (University of Lethbridge) and Denise Walton (Peelham Farm, Berwickshire). Most of all I have benefited from the constant advice and encouragement of Richard Rodger (Edinburgh University) and the patient editor, Peter Atkins. All errors and misjudgments are of course mine.

2 *Scotsman* 13 June 1829: 374b.

the best is made of the same subject in the harlequinade'.[3] Diseased meat had indeed become a *cause célèbre* in the Scottish capital, a classic local food scare, but for one local newspaper it was a passing commotion: "It has been a 'nine days' wonder,' and the chances are that it will cease to be talked of in nine days more."[4] The writer was wrong on both counts.

The sale of rotten meat is probably as old as the butcher's trade itself and the case of the curiously named Thomas Diet must have been but one of many in the Scottish capital before the 1860s, when the 'nefarious traffic' became the talk of the town dramatized in newspapers, public meetings, and above all in the Town Council and the courts. It drew into open conflict leading figures in politics and medicine. It elevated a local dispute about the quality of butcher's meat into a wider debate about the quality of food generally, its regulation, and its significance for the poor. As in all Victorian cities, most inhabitants could not afford the diet their health demanded and were at the mercy of local retailers; a universal truth familiar enough today.[5] Historians have written about public concern over meat taken from sick animals mostly in the context of the 1880s when, following Koch's discovery of the tubercle bacillus in 1881, the veterinary profession conducted an international campaign, led by the French and Germans, to restrict the production of meat from animals with tuberculosis. Long-held suspicions that a disease could spread from animals to humans – a zoonosis – were now confirmed in a particular case.[6] And if the precise risks

3 *Caledonian Mercury* 26 December 1864: 2e. The detailed review in the *Scotsman* 26 December 1864: 3a merely refers to 'some happily conceived local allusions'.

4 *Caledonian Mercury* 11 September 1864: 2cd.

5 The *adulteration* of food is as old as food retailing itself and its regulation long predated the industrial era; the best account for Victorian Britain remains Burnett (1966). The first edition of Frederick Accum's best-selling exposé, *A treatise on adulteration of food*, mentions meat on only one of its 362 pages (Accum 1820). The fourth edition (1822: 38–48) describes some of the methods used by graziers and butchers to cut corners and 'enhance' their meat. These include the practice of selling meat from beasts that had died of themselves and not been slaughtered. A comment by Accum, whose chief concern was reckless fraud and consequent risk to health, seems particularly apposite to this chapter: 'the injunction given to the Jews not to eat any creature which had died in consequence of a disease, seems to have a strict regard to health, and ought to be observed as a wholesome lesson by Christians as well as Jews'. (p. 41). The question of the inherent *quality* of food, notably that derived from animals, was largely left to the consumer until the nineteenth century and an understanding of food *poisoning* and *dangerous* food – as opposed to food that was merely unappealing, or sold in short measure – led to the application of laboratory science (Hardy 1999). In recent years, far from receding, the public debate has shifted to factory farming, animal welfare, and the consequent effects on the quality of meat and poultry products. This chapter may legitimately be read in this context which will be familiar to readers from the plethora of recent popular books on the ethics and risks of intensive meat production. For a more sober reflection on such concerns, see Fisher (1998).

6 Waddington (2006) provides a substantial and wide-ranging study of the relationship between cattle disease, public health and meat provision, with a most useful synopsis of the

of eating meat from infected cattle were not quantified by science, they were enough for the press to spread alarm and the precautionary means of minimizing such risks, for the courts to endorse, notably by a successful and much heralded prosecution of members of the meat trade in Glasgow in 1889.[7] But the dangers of diseased meat, or meat from diseased animals, were not suddenly regarded as serious just because of the new scientific understanding of tuberculosis. Science neither initiated the matter nor settled it. The chain from beasts diagnosed with tuberculosis to meat on a domestic table was a long one. The links were as contested in the era of bacteriology as they had been in the 1860s when pleuro-pneumonia was the chief cause of anxiety. Science moved understanding on, but questions of the transference of disease from animals to the humans that consumed them, and the unpredictability of the consequences of eating meat from livestock diseased in one degree or another, remained.

This chapter recounts the story of a similar conflict over diseased meat a generation before the Glasgow case. It suggests that a complex web of changing sanitary, veterinary, municipal and commercial contests, conducted through professional and personal conflicts and rivalries, fuelled a public debate about the dangers of unwholesome food and turned it into a major political issue.

The Local Context

Edinburgh, though a leading European medical centre, and fully cognisant with the sanitary crises of the 1840s and beyond, was late to appoint its first Medical Officer of Health in 1862. Dr Henry Littlejohn, however, was no ordinary medical officer.[8] The publication of his *Report on the Sanitary Condition of the City of Edinburgh* in 1865 was a turning point in public health in Scotland, and remains one of the most perceptive, astute and carefully researched sanitary

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secondary literature. For my taste, however, it lacks attention to the political, the social and the local aspects of what was a rather colourful story.

7 A transcript of the trial taken by Hodge and Company, shorthand writers, was published as *Tuberculous Meat: Proceedings at Trial under Petitions at the Instance of the Glasgow Local Authority against Hugh Couper and Charles Moore, before Sheriff Berry* (Glasgow: William Hodge, 1889) but the proceedings were independently reported across twenty-seven columns of the *Glasgow Herald* 15 May to 21 June 1889. See Atkins 2004, especially 167–72, and Waddington 2006, ch. 6. J. B. Russell, MOH for Glasgow 1872–98, certainly saw the 1889 trial as a showdown between sanitary administrators and a careless meat trade, a view Waddington dismisses summarily (p. 93). See Chalmers 1905: 592–609, and Robertson 1998: 145–8. I will return to this case later.

8 (Sir) Henry Littlejohn (1826–1914) was already Police Surgeon for Edinburgh and a noted witness for the Crown in forensic medicine, notably in poisoning cases, when he was appointed the first medical officer of health in Scotland. In 1873 he was appointed medical officer to the Board of Supervision, which administered the Poor Law in Scotland, though he had written reports for them from 1859.

reports of the nineteenth century. It was founded on quite extraordinary statistical and field investigation, not least in relation to the cow byres of the city, and it remained the touchstone for reformers in Edinburgh for years.[9] The modern reader, familiar with Victorian public health reports, but unfamiliar with the municipal affairs of Edinburgh in the 1860s, might wonder why Littlejohn devoted so large a proportion of his text to the meat and dairy trades of the city.[10] This chapter provides the explanation. Littlejohn, acutely aware of public opinion and political realities in his native city, knew exactly what he was doing. His *Report* also coincided with the Cattle Plague, the epidemic of rinderpest that devastated cattle farming in Britain, not least its urban dairies.[11] The public, ever susceptible to – and argumentative about – medical and environmental panics, conflated cattle plague, cholera, and diseased meat. However, as with cholera, anxiety about unfit meat and milk was compounded by scientific ignorance and confusion.[12] In the pre-bacteriological era expert knowledge spoke with conflicting voices. This was not a case of scientific authority versus quack medicine. Leading opinion in medicine and veterinary science was divided and factious, and political and religious leaders took up sides, leaving the Town Council, and especially its medical officer, to pick their way through a Babel of voices in a city with a large professional class given to disputation and public rhetoric in pamphlets, newspapers, public meetings and Presbyterian sermons of several varieties. The local social and political context was crucial (Figure 5.1). The three newspapers on which much of this account is based were published in the High Street, a few yards from the City Chambers and Police Office.

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9 Only twenty-three surviving copies have been located worldwide. A critical edition with an introductory essay is being prepared by Paul Laxton and Richard Rodger.

10 Of the whole text (47,159 words) of the report, the byres and diseased meat occupy 13.6 per cent. Only the section on drainage and water supply exceeds this.

11 Hall 1962.

12 In 1848 sales of fruit, vegetables and fish dropped sharply in London during the cholera epidemic. Hardy (1999: 296) notes the popular tendency in the nineteenth century and beyond to ascribe sudden deaths following gastric illness to food poisoning, a term which – as distinct from poisoning by another party by means of food – was only used from the 1880s. The strong suspicion that food poisoning from unfit ingredients was widespread before the 1880s is hard to verify and quantify from the trail of anecdotal evidence. And of course, distinguishing the ingredients from the preparation is a dilemma in such cases (pp. 296–7). In the period in question in this chapter, the quality of meat was being judged from the state of the animals at slaughter and the physical condition of the meat, not from any understanding of infective pathogens that it might carry from a variety of sources (p. 298). Hardy's argument about Typhus and (even more so) epidemic diarrhoea, especially in infants, as potential indicators of food poisoning, seems to support the opinion of Dr Littlejohn, discussed below, that there was much hidden death from eating unfit food, a view later endorsed by the tons of food condemned, confiscated and destroyed by local authorities on the advice of their sanitary departments.

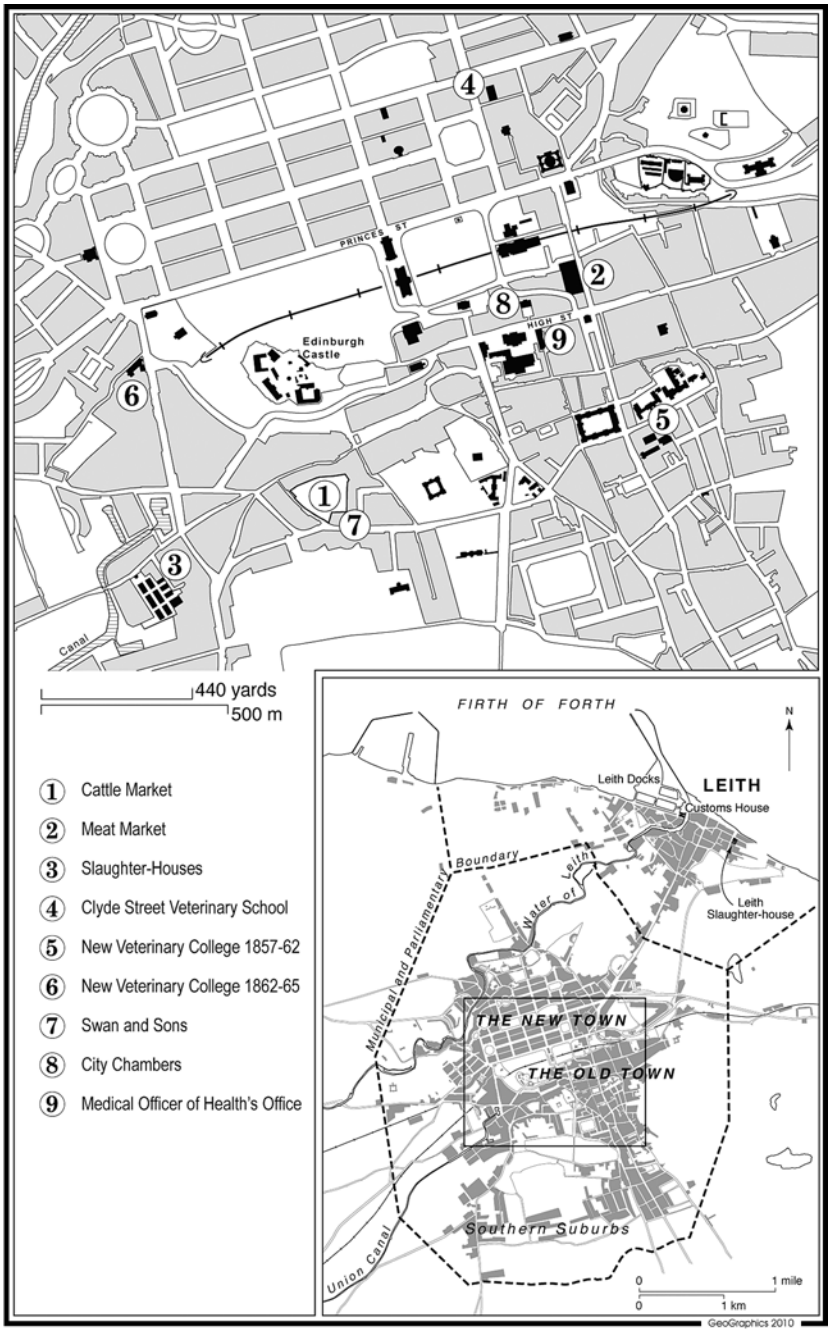

Figure 5.1 Edinburgh in the 1860s

Source: The author

Note: The three newspapers on which much of this account is based were published in the High Street, a few yards from the City Chambers and Police Office

As the northern capital and leading centre of medicine and veterinary science, what passed in Edinburgh was of more than local or even Scottish concern. It was of particular interest in London where the state of urban dairies, abattoirs and butcher's meat was also the subject of campaigns by sanitary reformers in the 1860s. Indeed, the national debate on diseased animals in towns and cities was firmly, and for particular reasons, centred on London and Edinburgh. The local story of the conflict between the livestock interests and sanitary reformers described in this chapter illuminates some of the debates on the frontier of human and veterinary medicine, the role of the various actors in the cattle trade, and the part played by the Medical Officer of Health who had responsibility for food regulation. Above all, it demonstrates the obstacles to the systematic application of evidence-based public health policies in a city whose local government was consistently squabbling, vacillating and often virtuosic in avoiding taking decisions.

The link between the milk trade, pig rearing, slaughter-houses and the sale of bad meat to the public was made clear long before this period. Before the opening of the public Slaughter-houses in 1853 and the concomitant prohibition of private facilities, there were 78 killing booths in the city used by some 150 butchers. In addition many butchers slaughtered calves, sheep and lambs at their shops. Writing in August 1847, just before the 1848 Edinburgh Police Act, the Inspector of Lighting and Cleaning described the regulation of this much complained of public nuisance as 'worse than useless'. He proposed the provision of public abattoirs by a joint-stock company, and the prohibition of other killing places specifically 'as a means to prevent the sale of unmarketable and unwholesome meat'.[13]

Thus, in one crucial respect Edinburgh was different from other British cities and in marked contrast with London, which had failed to respond to calls for a public abattoir as early as 1828. From 1853, some 20 years before any other city, it possessed a public abattoir at Fountainbridge close to the centre of the city. Under the 1850 Edinburgh Slaughter-houses Act, section 25, private slaughter-houses were banned not only within the city limits but within one mile of the boundary. Whatever the shortcomings in controlling the quality of dead meat it supplied, Edinburgh avoided the proliferation of private slaughter-houses which were a persistent offence in London and other cities.[14]

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13 Murray 1847: 5–6. The direct outcome of this prescient and intelligent report was Murray's proposal for the Slaughter-houses in Fountainbridge based on what he had observed in Paris, and the Edinburgh Slaughter-houses Act: 13 and 14 Vict., c. 70: *An Act to provide for the Erection of public Slaughter-houses for the City of Edinburgh, and for the regulation of the same*. (15 July 1850). For Murray's speech at the laying of the foundation stone of the monumental facility, see the *Scotsman* 2 April 1851: 3cd.

14 MacLachlan 2007. In 1873 London had 1,500 licensed slaughter-houses. Public abattoirs were opened in Manchester in 1872, Birmingham 1895 and Leeds 1898. See also MacLachlan 2004–5: 66, though the Slaughter-houses were in fact opened on 24 May 1852; *Caledonian Mercury* 20 May 1852: 3c.

The role of the press was vital in this controversy.[15] The newspapers were the essential source of information for the educated classes of Edinburgh and indeed such a comprehensive record of public meetings of all kinds that constituted the official record of public, especially municipal, affairs. By and large, allowing for some inevitable bias in selection of the issues they covered, they were careful to separate reporting from comment. This chapter appears therefore as a story told by three newspapers, and it is presented in narrative terms. Whilst official records, notably those of committees from which the press were excluded, do sometimes reveal attitudes or decisions not reported in print, they offer thin gruel compared with the rich fare of the Edinburgh newspapers. However, the press were not simply recording events and affording their columns to their readers to publish their often extensive letters. Like any such controversy, this was clearly stirred by editors. A food scare, like crime and scandal, was an opportunity not to be missed.

The Rise of John Gamgee

In 1862 John Gamgee, principal of the New Veterinary College in Edinburgh and (with his brother Joseph Sampson Gamgee) a vociferous and controversial campaigner against the meat trade, was asked by John Simon, Medical Officer to the Privy Council, to report on cattle disease and its threat to public health.[16] His findings were published as part of the Medical Officer's annual report in April 1863 and caused a storm of protest from the livestock and dairy industry, not least in Edinburgh, where Gamgee had conducted many of his detailed investigations.[17] He had been making his views clear in the Edinburgh press from as early as February 1857. Essentially, he accused the industry of trading in diseased animals and threatening public health by providing 'the unwholesome meat that is daily partaken of by the Edinburgh people'.[18] At the same time he

15 In 1857 the *Edinburgh Evening Courant* and *Caledonian Mercury* appeared daily except Sundays and the *Scotsman* twice a week. By 1866 all three appeared each weekday, providing 940 issues per annum, containing some fifteen million words of news, comment and letters. That is a minimum estimate. The prime source for this chapter is a selection of approximately 380 articles dealing with meat and cattle, many of them running to thousands of words.

16 Hall 2004, and the account by his great-niece, Ruth D'Arcy Thompson (1974). A recognition of Gamgee's long-term contribution to animal husbandry and veterinary science, and to his treatment by his own profession after 1866, can be found in Fisher 1979–80.

17 *Fifth report of the Medical Officer of the Privy Council*, PP 1863 (161) xxv.206–98. Gamgee's report occupies Appendix IV. It is summarized and endorsed by John Simon on pp. 21–31.

18 *Scotsman* 28 February 1857: 3f. This letter dated 25 February appears to have been the first shot of his local campaign. It was followed by further letters to the *Glasgow Herald*

charged the local authorities with failure to use their powers under their local Police Act to prosecute purveyors of bad meat: 'during the last five years all the cases brought under notice at the Police Court in Edinburgh average but 12 per annum, and half these refer to rotten cheese, fish, poultry, &c., and not to diseased meat'.[19]

The Scotsman responded to Gamgee's campaign with a characteristically trenchant editorial: 'Within some ten years or so we have had several panics connected with the condition of … staple articles of consumption. We had the potato taint; more recently we had the adulteration panic; and now we have an alarm about diseased cattle'. Now, continued the editor, there is the still more alarming prevalence of disease in animal food – 'death in the pot'.[20] This, he warned, should not be raised in public without strong grounds 'for not only does it rouse hornet nests of vested interests, but excites a general uneasiness in the public mind'. Nevertheless, congratulating the Gamgee brothers and the *Scotsman* the editor provoked those hornet nests and indulged himself in prose that would certainly have caused uneasiness in the public mind:

> It has been shown that the average mortality among cows in town dairies is thirty per cent. per annum; that the great majority of the condemned animals find their way to the slaughter-houses, their unhappy carcases, after ceasing to give diseased milk, being cut up into diseased meat; that animals, after being under treatment for weeks or months by veterinary surgeons, till their blood and flesh are saturated with 'deletery medicines,' are sent off to market full of disease and drugs; and worse than all, that large herds of pigs are kept and fed systematically on carcases which are too far gone to be presentable in the market, even with all the arts of dressing up the meat practised by the most expert of salesmen – disease being transmitted to the public at second-hand through the pork.[21]

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and *Aberdeen Herald* and an article in *The Scotsman*. In May 1857 these publications, together with an open letter to the Lord Provost and a letter of support (probably solicited; the two men had met when Holland came to Edinburgh unofficially in March 1857) by the Home Office inspector, P. H. Holland, were consolidated into a pamphlet: *Diseased meat sold in Edinburgh, and meat inspection, in connection with public health, and with the interests of Agriculture. A letter to the Lord Provost of Edinburgh* (Edinburgh: Knox and Sutherland, 1847). All this was timed to coincide with similar agitation in London by his brother Joseph Sampson Gamgee whose book on the cattle plague was advertised in the *Scotsman* in Edinburgh: *Scotsman* 1 April 1857, 1g and 22 April 1857: 1d, *Lancet* 4 April 1857: 361–2.

19 *Scotsman* 28 February 1857: 3f. 11 and 12 Vict. c. 113 (14 August 1848): section 113 forbade the exposure for sale anywhere in the city of unsound meat and other foods.

20 This biblical reference to 2 Kings iv 40 was commonly made to evoke atavistic fears.

21 *Scotsman* 15 April 1857: 3a. The *Caledonian Mercury* by contrast, provided a sceptical, lofty and somewhat sarcastic editorial, making fun of the fact that condemned meat was used to feed the animals in Edinburgh Zoo. It described a prosecution on 11 May

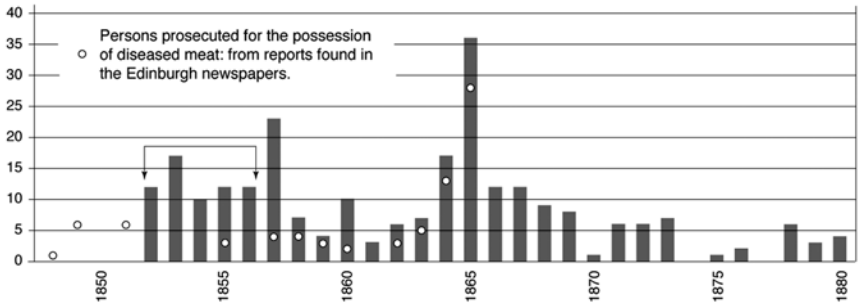

Figure 5.2 Prosecutions for possessing unfit food intended for sale, 1851–80

Source: Annual return of crimes by the Superintendent of the Edinburgh Police Department 1856, 1861, 1867, 1873, 1879 and 1880. Of the five year period indicated by arrows John Gamgee wrote, 'during the past five years all the cases brought under notice at the Police Court in Edinburgh average but twelve per annum, and half of these refer to rotten cheese, fish, poultry &c., and not to diseased meat.' Letter headed 21 Dublin Street, 25 February 1857; *Scotsman* 28 February 1857, 3f

The editor of the *Scotsman* may have been right that as a result of this campaign the market officials were being more vigilant and that there was a sudden short-lived increase in prosecutions but it was a gross exaggeration to claim that 'since public attention was first called to the matter in our columns … the prosecutions for exposure of diseased meat for sale in Edinburgh have increased at least ten-fold'. For the whole of 1857 they were between two and four times the average of the preceding five years (Figure 5.2).[22] After congratulating Edinburgh on having an excellent public Slaughter-house and none of the dangers of private abattoirs found in London and other cities, the leader writer endorsed Gamgee's call for properly qualified (and, by implication, reliable and honest) inspectors. In this, as in many other public debates and conflicts, the powerful local press, led by three main titles, was a crucial informer (and former) of public opinion about the cattle and meat trades, and a constant watch on elected authorities and their officials.

1857 as 'a very flagrant and suggestive one.' *Caledonian Mercury* 3 June 1857: 2cd. But not flagrant enough, it seems, to be reported in the *Mercury* (See report on the trial of Thomas Cameron in the *Scotsman* 13 May 1857: 3c). A system of universal inspection is dismissed as impracticable.

22 *Scotsman* 15 April 1857: 3a. As Figure 5.1 shows, Gamgee had checked the published report of the Superintendent of Police; the average number of prosecutions per annum 1852–6 was 12.6. He was probably right in saying that half of them 'refer to rotten cheese, fish, poultry, &c.' Prosecutions may therefore have risen from an average of six or seven to a maximum of twenty-three in 1857 assuming that there were only prosecutions for bad meat in that year.

Nine days later two parties involved in the regulation of the trade (or lack of it), and who were later to be less than helpful to the cause Gamgee espoused, gave telling signs of their position. At a meeting to mark the annual examinations at Edinburgh Veterinary College, attended by many leading medical men, Professor William Dick made a plea for better recognition of veterinary science 'when *disease threatened us from foreign countries* [my emphasis], when the price of stock was so remunerative to the farmer, and when the consumption of animal food was so great'. Cattle disease was more a threat than a reality, and a foreign threat at that.[23] The other party, Edinburgh Town Council, issued a proclamation warning the public that there was a lot of bad meat on sale, that it was illegal, and that they should be encouraged to report offenders to the police and market inspectors. Much of the bad meat that could not be sold openly found 'a ready sale in a prepared shape'.[24]

Gamgee's report to the Privy Council (apparently accompanied by detailed notes in addition to the text for publication) was a powerful indictment of the whole industry from cattle rearing and importation through to the meat and milk sold to consumers. It was also a wide-ranging review of animal diseases and their aetiology based on his continental experience and his reading of the German and French literature. Its central charge was that an unacceptably high proportion of cattle in dairies was diseased, notably with pleuro-pneumonia and that the disease was deleterious to the quality of meat and sometimes milk: 'In Britain all our large towns are stations for this disease'.[25] Although he went out of his way to

23 *Scotsman* 25 April 1857: 3c. In 1857, in response to anti-contagionist thinking, foot-and-mouth and pleuro-pneumonia were removed from the list of diseases regarded as foreign imports but restored in 1866 following the Cattle Plague (Worboys 1991: 310 and 313). Those attending this celebratory meeting included Douglas Maclagan, John Goodsir, John Struthers, James Gregory, Thomas Laycock, Andrew Wood, and William T. Gairdner; a formidable representation of the medical élite of Edinburgh. After prizegiving, at which a silver medal was presented by John Gamgee to the student with the best performance in Comparative Pathology, the examiners and 'friends' were taken to dinner at the Waterloo Hotel. This was a crucial time for Dick and his Veterinary School to build support.

24 *Scotsman* 25 April 1857: 3b. Prepared shape presumably refers to small cuts and possibly sausages and minced meat.

25 *Fifth report of the Medical Officer of the Privy Council*, 246. A detailed table of the causes of death in 664 cattle in Midlothian, 1859–61 (pp. 211–12, source unstated), attributes 55 per cent to pleuro-pneumonia. The strong association of the disease with urban cowsheds, demonstrated by a map of cases in 1887, convinced the Departmental Committee on Pleuro-pneumonia and Tuberculosis of 1888 (PP 1888 [C.5461-I] xxxii.590) that it was the result of intensive farming. About two thirds of all cases were concentrated in major urban areas. If those cases are set against the total number of cattle in the 1887 returns (PP 1888 C.5493 and C.5477) and expressed as Gini coefficients (or location quotients, where the British Isles scores 100) the county of Edinburghshire (Midlothian) emerges as the leading centre for the disease in the British Isles: Edinburghshire 4,220, London and Middlesex 3,340, Dublin 3,915, Lanarkshire 1,325, Fife 1,227. The highest score

say that he was not singling out Edinburgh dairymen, who in some respects practised excellent husbandry, his statistics on Edinburgh byres caused a furore. His qualifications went unnoticed.[26]

> The dairy cows of Edinburgh … are well fed, and not liable to disease induced by defect in the quality [or] quantity of food. Their manure is rich, and worth as much as 4*l.* 10*s*. yearly for each cow. This again proves how profitable cow-keeping is. There is no waste. It is all money. It does transpire, however, that to feed for making flesh in town does not pay, and the loss on the sale of diseased cows is perhaps more than counter balanced by the advantage of always having fresh stock. It cannot be wondered at, then, that the dairymen of Edinburgh have strenuously opposed any interference, and not believing in the possibility of preventing the maladies at present so destructive amongst their cows.[27]

In many ways the protesting Edinburgh dairymen were being disingenuous. The high rate of pleuro-pneumonia in their byres was hardly a secret. In 1848 Edward Pond had estimated that 85 per cent of dairy cows in the city died of pulmonary disease, either in the byres or by being removed for slaughter when they showed symptoms. Pond, curiously unconcerned with the dead meat market, presented the mortality as a 'dead loss' to dairymen.[28] Nor would so much disease surprise those

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for England outside the Metropolis is Kent with 477. It is unsurprising that authorities in London were sometimes prone to see the disease as an unwelcome Scottish import.

26 These mollifying qualifications, directed at dairymen who were the exception to the rule, tended to recede as the patient Gamgee's campaign proceeded, though in January 1862, despite being barracked by a disaffected dairyman, he insisted that his campaign was in their best interests and he was most anxious to be on good terms with them; *Scotsman* 31 January 1862: 4c. Even in his initial letter of 1857 he drew attention to the common practice of watering milk: 'Common sense suggests, and experience proves, that the milk is made the most of, chiefly by dilution, and that the butchers give a good price for diseased animals'. *Scotsman* 28 February 1857: 3f. Littlejohn commented on this in a way that suggests it was expected: 'there is little adulteration, with the exception of the addition of water, – foreign ingredients of a deleterious character never being introduced'. See also Littlejohn 1865: 53.

27 *Fifth report of the Medical Officer of the Privy Council*, PP 1863 (161) xxv.286–7. Significantly there is no mention here of the quality and low yield of milk resulting from poor conditions in which cows were kept; Littlejohn 1865: 51–3.

28 Pond, an Edinburgh agricultural writer who had a farm or market garden in Morningside (*Caledonian Mercury* 21 August 1848: 3d and 24 August 1848: 2f) published a pamphlet reporting findings based on a survey of 30 dairies, or about a quarter of the whole. Out of an 'aggregate usual number of stock' of 537, there was a loss from pulmonary disease of 458. *Caledonian Mercury* 30 October 1848: 3f. On 18 October 1848 Daniel Wilkie, Superintendent and Manager of the Agriculturalist Cattle Insurance Company (whose Consulting Veterinary Surgeon was Professor Dick: *Scotsman* 17 June 1846, 1g), writing to the *Scotsman* about the way Edinburgh was 'dishonoured and degraded' by the state of the cow byres, stated: 'I many mention that Mr Edward Pond has been kind enough to show me, in manuscript, a small pamphlet he is about to publish. It is a description of the

familiar with urban dairies in other large cities. The Liverpool surgeon Henry G. Harbord, a few weeks before his colleague W. H. Duncan was appointed as the first Medical Officer of Health in Britain, expressed himself in the local press:

> I now affirm, without fear of contradiction, that more than one half of the cattle slaughtered, *or sold*, in Liverpool is diseased – that a very large proportion of this is wholly unfit for human food – that the inspectors of markets are not in a position, as the law at present stands, to condemn this unwholesome meat – that meat diseased, as I have this day seen it, must, *necessarily*, induce disease among those eating it … As parting advice, I say to the poor man's wife – Beware of cheap meat on Saturday nights!'

His call was taken up by the Liverpool Health of Towns Association who made it a major part of their investigations in 1847. From the very start of the municipal sanitary movement the nefarious traffic was on the agenda.[29] But warning about diseased meat without being able to prove a link between disease in the animal and disease in its consumer was never going to be easy when it risked upsetting a major part of the food supply, quite apart from the massive cultural resistance to the idea.[30] For the urban historian the interesting questions are about how the city and its interested parties reacted to the alarm.

The commission from John Simon had provided the stimulus (if it were needed) for Gamgee to supplement his observations of 1857 with detailed research into urban livestock across the British Isles. He visited markets in London, Ireland and elsewhere but conducted his most detailed investigations in Edinburgh. To publicise his findings and further his campaign he gave a public lecture in Edinburgh in January 1862; it was widely reported.[31] His central point was the extent of disease in urban cowsheds and its effects:

> the complaints among the cow-keepers [in London] are terrible. Few, I am told, are paying their way; some may be thriving, but entirely by the system of selling

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dairies within the city. It contains a statement of the amount of mortality amongst the stock … it will be productive of much good, if acted upon'. *Scotsman* November 1, 1848: 3e. I have not located a copy of this pamphlet.

29 *Liverpool Mercury* 28 August 1846: 414f, 5 March 1847: 268a, and 18 May 1847: 268a. Sutherland 1847: 157–62 and 178.

30 Hardy 2003: 202–3. For the general context see Waddington 2006: 23–4.

31 *Scotsman* 31 January 1862: 4a-c and *Caledonian Mercury* 30 January 1862: 2g. The meeting was chaired by Douglas Maclagan in the year he was appointed Professor of Forensic Medicine and Public Health at Edinburgh University. Only the *Scotsman* reported the late and disruptive arrival of Prentice. The lecture was welcomed in *The Farmer's Magazine* new series 42 (1862): 200–201, which reported verbatim passages of the lecture not included in the seemingly comprehensive report in the *Scotsman*. The passage quoted above is reported in identical words in both places. There were several reporters present, probably at Gamgee's invitation.

> diseased cows to the butchers, or keeping very few cows, and 'drawing in' their milk. By this is meant purchasing from the dealers who receive largely from the country.

This in turn led to systematic efforts to keep information about the infection from the public. There were a few references to Edinburgh but he stressed that the problem was common to most large cities. The lecture was disrupted by the late arrival of a recently retired cowfeeder, John Prentice, who accused Gamgee of a persistent campaign against the Edinburgh dairymen. Clearly not all the dairymen present agreed with him and the meeting broke up in some disorder. A fortnight later Prentice, who kept over 40 cows at Tollcross, irritated at the appearance of Gamgee's claims in the *Lady's Journal* and the *Scottish Farmer*, wrote to the *Caledonian Mercury*: 'cattle agents … require no Professor of Veterinary to judge for them regarding disease in cattle'.[32] That was probably true and reinforced Gamgee's point. It was not a question of whether experienced men knew when their cows were ill but how some rogue dairymen used their experience. As Gamgee put it in the enhanced published version of his lecture:

> In the City of Edinburgh there are dairymen who never knew what it was to make money until pleuro-pneumonia appeared … They originally paid £10 or £15 for a rich-milking Ayrshire, which they kept a twelvemonth or more. They now pay £25 or £30 for a fat cross-bred short-horn cow, which they calculate on selling diseased within three months from entering their dairy, and they find the latter system most profitable … They have gone so far as to say, 'We do not want disease out of the country; it is keeping everything high'.[33]

These comments were reprinted in at least two American publications.[34] Gamgee was an adept publicist.

The publishing of the report to the Privy Council in April 1863 moved the dispute to a higher gear. Under the headline 'Disgusting Revelations', the *Caledonian Mercury* provided readers with extensive extracts, giving prime attention to evidence on Edinburgh. Gamgee was not named. In the year ending 1 July 1862, in 88 dairies in Edinburgh there were ordinarily 1,839 cows. Of these, 1,075 were infected with disease during the year; 791 of them were sold to butchers for sale to the public 'and 284 of them were sold to feed pigs, which again came to be cut up and sold to the inhabitants'.[35] Soon after this Gamgee

32 *Caledonian Mercury* 18 February 1862: 2fg.

33 Gamgee 1862a.

34 Wells 1863: 221, Gamgee 1862b: 387.

35 *Caledonian Mercury* 21 August 1863: 2e. Neither the *Mercury*, nor the cited report to the Privy Council, claim that these are all the dairies of Edinburgh. Littlejohn (1865: 50) had inspected '171 Byres within the Parliamentary Boundary'. Establishing the number of dairies and cattle is difficult. Gamgee's data for what must have been the larger dairies show

extended his analysis, taking statistics from the Slaughter-house books, and reinforcing his campaign via the local press: 'I think I may ask the citizens of Edinburgh to insist on a change of the present system, and to co-operate with me in the adoption of a rational plan to prevent disease, and insure the stock of the Edinburgh dairymen'.[36]

Veterinarians at War

Gamgee had arrived in Edinburgh in 1856 to assist Professor William Dick at his veterinary school in Clyde Street but the young cultured scientist, with two years' experience of contagious diseases in continental veterinary schools, found himself incompatible with the practical and far from scientific old man. In 1857 he founded his own New Veterinary College in Drummond Street and made a determined enemy of Dick. And not only Dick; 'it was inevitable that John Gamgee should cross swords with the leading figures of the profession. His enthusiasm and annoying facility for always being right made him many enemies'.[37]

William Dick was not only founder of the leading veterinary school in Scotland (whose successor in the University of Edinburgh still bears his name) but also intimately associated with the Scottish livestock interest, especially the Highland and Agricultural Society, under whose patronage Dick had started his college. He was also a long-serving and voluble Police Commissioner and member of the Town Council, finally retiring from the latter in 1863. Charnock Bradley's comment that 'in political and ecclesiastical matters his views were somewhat extreme, and always expressed with no reserve and some roughness', is amply justified from the verbatim reports of meetings over three decades.[38] Despite a conventional veterinary education, this conservative son of an Edinburgh farrier had little time for the new scientific thinking of a man like John Gamgee, who he characterized as a mere 'bookworm'.[39]

Dick went to enormous lengths to persuade the Home Secretary not to grant the New Veterinary College the recognition it required and attempted to use his allies in the powerful Highland and Agricultural Society – whose members included most of the landed aristocracy of Scotland – to maintain his monopoly

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that the mean number of cows per dairy was 20.9; in Littlejohn's survey, two years later, and on an *estimated* total of beasts, the mean was 12.2. See Appendix 5c.

36 *Caledonian Mercury* 5 September 1863: 5de.

37 Fisher 1979–80: 50.

38 Charnock Bradley 1923: 54. John Gamgee receives only a passing mention on pages 42–3.

39 Dick liked to contrast his own practical experience with Gamgee's 'theorising' and 'speculations' but the accusation that he was a 'bookworm', which says a lot about Dick, was not lost on some newspaper readers: *Scotsman* 26 August 1863: 4b and 9 September 1863: 6e.

of veterinary teaching in Edinburgh.[40] His failure to do so was in large measure due to Gamgee's own allies in the elite of the surgical profession, notably James Syme, John Struthers, Douglas Maclagan and James Miller. Syme routed Dick in two meetings of the Society in February 1856; Struthers refused in 1859 to continue to examine for the Society's diploma unless students from Gamgee's college were admitted as candidates; Maclagan overcame initial reluctance to see two competing institutions and became a firm supporter of the New Veterinary College, and the ever-moral Miller a personal supporter of Gamgee, wanted Dick to 'extend the right hand of fellowship to all now holding the position of veterinary teachers'.[41] We may fairly surmise that it was a shared view of science that motivated this support.

This personal antagonism between Dick and Gamgee is more than a colourful sidelight on this story. Of course it represented a significant division in the veterinary profession, but it also split opinion over public health in relation to meat and livestock. In this respect the stance of the leading surgeons is not incidental. Gamgee did not hold back from challenging Dick's views and his influence, although he seems to have remained respectful in the face of some boorish contempt from the older man.[42] But he could not keep it up and the rift became a savage public quarrel conducted in the columns of the *Scotsman* newspaper between 1 August and 2 September 1863. A series of nine letters, amounting to 9,200 words, set out in minutest detail accusations, denials and counter-charges.[43]

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40 For its students to sit the RCVS examinations the college needed to be recognized by the Royal Sign Manual – Royal assent on the advice of the Home Secretary (Hall 1965). Hall also reveals the extent of support for Gamgee from leading medical men in Edinburgh, notably James Syme, Regius Professor of Surgery. See also Hall 2004. On the development of the veterinary schools in Edinburgh, especially the Dick School, see MacDonald et al. 2005. This study, rich in local and biographical detail (chiefly about William Dick), is mainly concerned with the institutions, their architecture and development. It draws a veil over the issues explored in this chapter.

41 *Caledonian Mercury* 3 February 1859: 3b-e, 10 February 1859: 3a, 10 March 1859: 3c, 19 April 1859: 2e, 12 May 1859: 2e, 13 May 1859: 2d. For useful portraits of these men see Macintyre and MacLaren 2005.

42 Dick's resentment of the rival veterinary school is shown by his pursuit of several students who transferred to Gamgee. In 1860 he sued them in the Small Debt Court for full fees for the term they had not attended. He won the cases but was asked by the Sheriff not to bring further such actions. *Caledonian Mercury* 20 March 1860: 2g, 24 March 1860: 2f, 28 March 1860: 3d, and 5 May 1860: 2f.

43 To simplify citations in the following pages the sequence of letters in the *Scotsman* is as follows: 1 August 1863: 7b (from Gamgee, probably 30 or 31 July), 5 August 1863: 7d (Gamgee, 3 August), 5 August 1863: 7d (Horsburgh, 4 August), 8 August 1863: 3b (Dick, 7 August), 10 August 1863: 3b (Gamgee, 8 August), 25 August 1863: 3c (Brown, 18 August), 26 August 1863: 4ab (Dick, 24 August), 27 August 1863: 3a (Gamgee, 25 August), 27 August 1863: 3a (Law, 26 August), 2 September 1863: 4e (Gamgee, 29 August).

The pretext for Gamgee's first salvo was his claim that on 20 July 1863 in the Town Council Dick had denied claims about diseased cattle and the dangers of their meat. Although this was never challenged in subsequent correspondence, there was no meeting of the Council on that day. Dick had a characteristic spat with Councillor J. T. Alexander MD at the meeting on 13 July after ridiculing claims that diseased meat and braxy mutton were a danger to health and denying claims of malpractice at the public Slaughter-houses.[44] It hardly mattered, for Dick's views as a Councillor were well known. As Dick himself wrote in his defence, 'while [Mr Gamgee] professes that his object in writing was to answer the observations made by me in a meeting of the Town Council … he has evaded all reference whatever to the subject, and entered upon another field of discussion … the real object he has in view … [is] his bitter disappointment at not obtaining the inspectorship given to me'.[45]

What irked Gamgee was less Dick's voice in Council than his practical role as inspector for the port of Leith, an appointment engineered, he claimed, by John Swan and Sons, the leading Scottish livestock dealer and 'active opponents of Mr Holland's Contagious Diseases Prevention Bill'.[46] 'To this there could be no possible objection if Mr Dick did not hold opinions which render him quite incapable of acting in such a capacity'. In particular he charged Dick with letting diseased cattle and sheep from Hamburg pass through Leith unhindered. His evidence was detailed and supported by witnesses. In 1864, 4,205 cattle and 18,023 sheep were imported through Leith and in the first nine months of 1865 the number of cattle exceeded 6,800.[47]

Gamgee, as Vice-President of the International Veterinary Association, had been attending its conference in Hamburg on 14–18 July and left on Sunday 19 on board the steam packet Berlin.[48] According to Gamgee 250 sheep had been aboard

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44 Dick was indulged in his bombast, if not supported, by Bailie Russell, a notorious ally in municipal foot dragging. *Scotsman* 14 July 1863: 4c.

45 Without quoting it in full it is hard to convey the resentful angry tone, and syntactical muddle, of this 190-word sentence. It finishes with a declaration that it will be his last word on the matter, a well-recognized way of absolving oneself from further discussion or defence. The claim that he wanted the Leith job was denied by Gamgee. Not only did he not want it (the implication was that he was over-qualified) but that it was driving him to despair ('I should have stultified myself'); *Scotsman* 2 September 1863: 4e.

46 Swan dominated the Scottish trade. By 1866 he was trading 20,000 cattle a year, about 15,000 of them imported through Leith and Granton. PP 1866 (427) xvi.631, Qq.5358–59. The firm is still a major livestock auctioneer, now based in St Boswells and Wooler.

47 *First Report of the Commissioners Appointed to Inquire into … the Cattle Plague*, PP 1866 [3591] xxii.201–4.

48 The Berlin, a new 630-ton steamer, arrived at Leith on 22 July with 491 passengers, 264 sheep and 29 cattle. *Scotsman* 23 July 1863: 4e. I am grateful to Michael Stammers, lately Keeper of the Merseyside Maritime Museum, for information about the vessel and likely conditions of the sailing, especially for sheep.

the same vessel, diseased and with insufficient food; several had died and others were put out of their misery. Gamgee said he observed Dick's assistant at Leith docks and assumed the carcases would be buried or taken out to sea and thrown overboard. Next day he saw them being carted to the Edinburgh Slaughter-houses (even though the newly opened Leith Slaughter-houses were close to the docks) where only one out of 14 was stopped from being sold to butchers. Repeatedly in his letter Gamgee openly accused Dick of opposing inspection and siding with dealers and fleshers when inspectors condemned their animals or meat – 'opinions he has all along promulgated'. In short, Dick was corrupting the regulatory mechanism established by law.[49]

A following letter along similar lines piled up the evidence against Dick. Support came in a third letter, from a Dalkeith veterinary surgeon: 'Professor Dick's opinions … have been for the last 17 years the great cause for the continuance of that fatal disease pleuro-pneumonia in cattle in our country'.[50] Dick's brief riposte, promising a full reply to Gamgee's 'most offensive and uncalled-for attack on me', prompted a third letter from his tormentor, this time illustrating the risk of infection from diseased cattle passing dairies on the way from Leith docks. It also conveyed Gamgee's insistence that he was neither personal nor offensive:

> The publication of startling facts … may have displeased Mr Dick, but as a public man asserting at a meeting of the Town Council that diseased meat would not injure human beings, and that the 'hue and cry' about the sale of such material was not warranted by the existing state of things, he might have expected that his opinions were likely to be called in question.

But this polite reply, that his letters were on the issues and not personal attacks, was disingenuous. He was accusing Dick, in the leading Scottish newspaper, of very serious matters amounting to gross incompetence.[51]

Robert G. Brown, the livestock dealer who had exported the animals in question, came to Dick's aid (and of course his own) claiming that he never dealt in diseased animals, that in his part of Schleswig and Holstein there were no diseased stock, that the healthy cattle on board the Berlin went unremarked, and that Gamgee's letters were 'merely a personal attack'.[52] Dick waited until 24 August to send his reply to the *Scotsman*. In 3,200 words he contested Gamgee on every point so plausibly (and in some details perhaps accurately) that the main charges against him – his opposition to the regulatory regime and denial of the

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49 *Scotsman* 1 August 1863: 7b. For the fate of 'Mr Holland's Bill' see below. Edward Holland, 1806–75, Liberal MP for Evesham, was President of the Royal Agricultural Society in 1873. I am grateful to John Wilson, librarian at the Royal Agricultural Society on the last point.

50 Letter from J. Horsburgh, *Scotsman* 5 August 1863: 7d.

51 *Scotsman* 8 August 1863: 7d and 10 August 1863: 3b.

52 *Scotsman* 25 August 1863: 3c.

seriousness of diseases in livestock and livestock products – were effectively obscured. Dick, calling in aid the assistant who Gamgee claimed to have observed dealing with the dead and diseased sheep from Germany, flatly denied the charges against him. His long letter, however, reveals his fundamental differences with Gamgee irrespective of the facts of the particular case.

> I admit entertaining a belief in the influence exerted by atmospheric conditions on certain classes of epidemics as to their origins and propagation, as shown by their appearance and disappearance in different years and seasons and districts – opinions maintained both in medical and veterinary science, as in cholera; but I have always insisted, as a practical rule, on the separation of the affected from the unaffected, dispute however much we may on the real or alleged cause of the rise and spread of disease; and the most contagious alarmist is not more decided in acting on this point than I have been. But Mr Gamgee is so intent on a conviction as to be unable to comprehend the difference between reasoning on abstract questions, and adopting precautionary rules of practice on the mere ground of expediency in cases wherein conflicting opinions exist.

In an attempt to convince his readers that more regulation would discourage entry into the meat trade and cause more disease by depriving the poor of their food, Dick accused Gamgee of gross misrepresentation:

> To whatever cause the extraordinary movement of Mr Gamgee may be traced, every candid mind, I think, after my exposition, cannot fail to be convinced of the gross misrepresentations he has given of my opinions and practices, and the equally gross misstatements made by him in the narrative of his own cases. His imaginary exaggerations as to the extent to which the public sale and consumption of diseased meat is carried, and the amount of disease thereby engendered, and the enormous loss inflicted on human life and health, would be truly appalling, if true; but I believe stronger cases might be made out of injury among certain classes from the want of that food which he condemns as so dangerous. His views, indeed, if acted upon, would drive respectable fleshers, salesmen, and dairymen from the trade, and deter any such from entering it, and would in a great measure go to prohibit the flesh of animals as a dietary article of food for consumption, except at a ruinous cost. Rigid inspection, I have always held, ought be made and maintained in all public markets and ports, not, however, by one-sided and one-idea class of inspectors, but by competent individuals selected for their practical knowledge and experience, certainly not by bookworms, crammed with mere statistical speculations.[53]

In the same letter Dick also took the opportunity for a rude dismissal of Gamgee's colleague James Law who had witnessed a further cargo of sick animals

53 *Scotsman* 26 August 1863: 4ab.

passing out of Leith with Dick's certificate of health: 'it appears that this Mr Law is employed in the capacity of a detective or spy, and to watch over the Hamburg cattle on the highways and byways and public market, as so many returned convicts from transportation, and that my ticket-of-leave should be withdrawn, and they sent immediately to the hulks'.[54] Six years earlier Law had been a prize-winning student in Dick's college. Five years later he became the first professor of veterinary medicine in the United States, at the new Cornell University.[55]

Before Dick's reply was published, Gamgee had sent a fourth letter to the *Scotsman* refuting Brown's accusation of a personal attack on Professor Dick. 'It was not so. With Professor Dick personally I have no question, and never had. But I have exposed the goings of a public man – namely, an inspector of cattle appointed for the public good'.[56] More significantly, he tackled Brown at length on the livestock trade from Hamburg and the state of cattle in Schleswig-Holstein. He also returned to the damage being done by misinformation influencing the Town Council. It was important for them to protect the public from putrid meat but it was also important to protect dairymen from ruin as a result of disease. He could not know that two years later many of them would indeed be ruined by rinderpest.

In his fifth letter, Gamgee, began wearily: 'In reply to Professor Dick's letter I need only say a very few words'. Nevertheless he achieved his natural epistolary length of 1,000 words; and the reply is Gamgee at his most deadly. Dick did not need to protest about his views on contagious cattle disease. He had published them in *The Journal of Agriculture* in 1858, which Gamgee now quoted to reveal a man unprepared to accept the dangers of infection, advocating exactly the opposite to the claim in his defence that he separated infected from uninfected animals. He also reminded Dick of what he had said in the Town Council on the seizure and destruction of diseased meat. Dick, true to his word, published no reply but others joined the debate. John Pringle, a passenger on the boat from Hamburg and 'a butcher of 45 years' experience', claimed that the sheep were perfectly healthy but that 14 of them, smothered due to the rolling of the ship, went to the Slaughter-house on arrival. He wanted the Lord Provost and bailies to call a meeting of the trade to discuss the best means of crushing the trade in unfit meat, and not to be 'led away, or accept as true, the statements so recklessly made by Mr Gamgee'.[57]

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54 *Scotsman* 26 August 1863: 4b. In reply, Law brushed off the personal remarks, so characteristic of Dick, and concentrated on the symptoms he had observed in several shipments of cattle arriving from Hamburg: *Scotsman* 27 August 1863: 3a.

55 Leonard 1979: 18. In 1866 Law applied to succeed Dick as head of the Edinburgh veterinary school but was deemed ineligible because of his association with Gamgee. Ibid. 10.

56 *Scotsman* 27 August 1863: 3a.

57 *Scotsman* 4 September 1863: 4a. In a long letter in the same column another butcher in the same issue claimed that his trade was well regulated and that inspectors, one a 'bred butcher' and the other 'a vigilant public servant' with no tolerance of unwholesome meat, had no need of oversight: 'To have a veterinary's nomenclature added to the civic staff at an expense to the town of five or six hundred a-year is really not desirable'. A John

Another correspondent, an Edinburgh resident with a sheep farm in Lanarkshire, was also a passenger on the *Berlin*. He had no wish to take sides between the 'two learned Professors' but absolutely refuted John Pringle: the sheep on the boat were 'if not diseased, two-thirds of them were exceedingly like it. They were miserable-looking animals and appeared to me to be the refuse of the stock-holders in Germany; and I, with many of the other passengers, were pitying the wretched creatures. Mr Pringle, although he had the opportunity, saw very little of the sheep during the passage, being himself in a very bad state from sea-sickness, whereas I, being perfectly well, saw the state of the animals during the whole passage. Mr Pringle also says that the animals that died were smothered. Such is not the case; the sailors were particularly attentive in moving to an open space any which appeared unable to keep their place, and they certainly died, if not of disease, of sickness'.[58]

No doubt buoyed by such support, as well as the rightness of his campaign, Gamgee wrote again to the newspaper on 4 September: 'I have often wished to consult the Slaughter-house books to determine how near the truth I had arrived by other means of inquiry'. He had that week at last, he thought, got hard data to support the evidence he had presented in his report to the Privy Council. He now tabulated for each of the 36 months 1860 to 1862 the numbers of each of seven classes of livestock that were diseased. His conclusion was that the number of sick animals entering the Slaughter-houses had increased, while the proportion condemned fell from 25 per cent to 17 per cent. Moreover, over half the animals classed as diseased were in fact dead or dying on arrival.[59] Thus the defence that 'diseased' often indicated no more than a minor ailment, did not answer his case. Gamgee was well aware that a motion by David Curror, Burgh Treasurer, on the state of the Slaughter-houses, was to be discussed in the Town Council in four days' time.[60]

Pringle was the first superintendent of the slaughter-houses but I have no evidence of any connection with this man.

58 Letter from Alex Ross, *Scotsman* 5 September 1863: 7a. A warning of how easily a case could be misjudged but for the finding of a handful of letters, and an instance of the sense of immediacy available in the Victorian newspapers which are unmatched in the rich narrative reporting by the standards of most modern media of communication today.

59 *Caledonian Mercury* 5 September 1863: 5de, *Scotsman* 5 September 1863: 7a. All members of the New Veterinary College had been banned by order of the Superintendent in February 1862 (*Caledonian Mercury* 19 February 1862: 4a-c), so how Gamgee managed to gain access to the books of the Superintendent of the Slaughter-houses is not clear. The scroll minutes of the Market Committee do not say, but he was, unsurprisingly, refused access to the premises in December 1864: ECA SL45/1 27 Dec 1864. Dr Littlejohn had been granted permission to view the books on 29 June 1863; given his quasi-supervisory role the necessity to ask suggests that the Market Committee did not welcome 'outside' parties.

60 In his letter of 26 August 1863, replying to attacks from Robert Brown, he made clear that Curror's motion for the next Council meeting was a prime reason for writing. *Scotsman* 27 August 1863: 3a.

The reaction from the cattle trade was swift. John Swan, describing the affair as 'this absurd agitation' and Gamgee's data as 'utterly worthless', set out to refute the charges in some detail. Actually, with very small discrepancies Swan's data on the number of diseased cattle passed for slaughter and the number condemned were in agreement with Gamgee's. However, Swan pointed out, reasonably enough, that 64,942 cattle were slaughtered in the three years 1860–62. So the number presenting as diseased was less than four per cent and those sick but passed for slaughter a fraction over three per cent. Swan also questioned what was meant by 'diseased'; the heading '*apparently* diseased' (his emphasis) covered many cattle that were either injured or slightly ill in some way that did not affect their flesh. Thirdly, he claimed that a comparatively small proportion of the diseased cattle came from Edinburgh dairymen. 'Surely this shows a recklessness and exaggeration of statement of which even his worst enemies [of which Swan was certainly one] could hardly have supposed him capable'. He concluded with a warning to the Town Council not to act on Gamgee's advice.[61] Thomas Wright (a cowfeeder in Carnegie Street, and something of an activist among the dairymen) describing Gamgee's statistics as 'mere fancies of a disordered brain' and his 'fine-spun theories' as 'absurd', described the many circumstances in which animals might be classes as 'diseased'. Following Swan's arguments (suspiciously?) closely, Wright maintained that very few of the diseased cattle were the product of Edinburgh dairies. But he went on, somewhat illogically, to warn that if the Town Council were 'so insane as to prohibit the selling of good fat cows in the earlier stages of pleuro-pneumonia' the result would be even greater infection in the dairies which would be unable to dispose of sick animals. He urged the Council to consider establishing a separate market for fat stock to reduce infection in the dairies. That beasts with pleuro-pneumonia were being slaughtered for butcher's meat he regarded as 'a harmless matter', a clear indication that the cattle men defended the interests of their trade whilst denying that meat from sick beasts posed any threat to consumers of their meat.[62] Though the circumstances are different, the modern reader recalling episodes of foot-and-mouth and Creutzfeldt-Jacob disease in the 1990s will find some familiar ground here.[63] In the 1860s, lacking modern means of assessing the quality of meat from animals with infected lungs, or other forms of infection that did not necessarily impair the flesh, neither side had firm grounds for such categorical claims. This, as will become clear when matters moved into the courts, divided the scientific experts between the cautious or fussy and the unconcerned or reckless.

61 *Caledonian Mercury* 8 September 1863: 3d.

62 *Caledonian Mercury* 8 September 1863: 3de. Dr Littlejohn in his survey of the byres would later describe Wright's premises as dirty and ill-ventilated. Littlejohn 1865, Appendix II: 68.

63 Fisher 1998.

These unseemly squabbles must have left both the public and, more particularly, those responsible for regulating the meat and dairy trades, bewildered. As the veterinary experts barked in public like Cerberus, and the cattlemen denied all charges against them, others took sides but rarely on a consideration of the science. This was to be expected of the public at large but not of elected regulators, still less the medical profession. One of Dick's close associates was Dr Alexander Wood, a fellow Police Commissioner, prominent member of the Royal College of Physicians of Edinburgh, and also 'a man of opinions strongly held and defended'.[64] Both were men of immense energy and active in a wide range of public service in Edinburgh. Unsurprisingly, in the contests over the safety of meat, in courts of law and of public opinion, these two influential men made common cause.

As for the Edinburgh public, the Irish editor of the *Caledonian Mercury*, James Robie, probably spoke for most of them. His summary position is so tightly argued and revealing that it is reproduced in full as Appendix 5a. Without questioning Gamgee's motives, the editorial regarded him as having irresponsibly alarmed the public, his reputation as seriously damaged, and his statistics as comprehensively flawed as an indication of the risk of bad meat to the public health. The matter was best left to the discerning common sense of consumers. In the editor's view the problem was a far simpler matter for the Council; either there was an innocent explanation for the suspicions of corruption in the Slaughter-houses and markets, or the inspectors were indeed culpable and should be dismissed. At the same time the *Mercury* revealed its municipal economism: 'There are too many of such living at the expense of the ratepaying public at present'. But in one respect Robie was wide of the mark; the diseased meat question had far from 'run its course' – it certainly would not 'cease to be talked off in nine days more'. It had hardly started and would be a routine but nonetheless serious concern for the local health authorities for decades.[65]

The quarrel between Dick and Gamgee also had its consequences for veterinary education in Edinburgh. Dick bequeathed his veterinary school to the city under a strict trust regarding its teaching, appointments, buildings and investments in land. In a codicil to his will, he specifically forbade John Gamgee ('calling himself Principal and Professor of Veterinary Medicine in the New Veterinary College, Edinburgh'), his family, or any students taught by him, from 'holding any situation whatever in or connected with the college as so founded by me'. In 1867 J.A. McBride was appointed as professor of Cattle Pathology, a post endowed by the Highland and Agricultural Society. Only the day before the opening of the College, it was discovered that McBride had been taught by Gamgee. He took up the post but steps were taken to remove him, ostensibly

64 Phillips 2004, Brunton 2004.

65 On James Robie, see Couper 1908, vol. 1: 55–62. Couper provides a useful guide to the political, social and religious positions of Edinburgh newspapers in this period.

because he failed to keep order in classes. The Trustees ordered his dismissal in January 1868 – a step they took without informing McBride – and legal proceedings followed. The affair cost the College in money and reputation.[66]

A Town Council in Disarray

By September 1863 the pressure on the Council to respond was unavoidable. Never good at recognising priorities, the Council began its meeting on the 8th with a tetchy discussion about the appointment of a new German master at the High School (they rubbished a report from the Education Committee and deferred the matter), followed by the Royal Pews in the High Church and then the Princes Street Gardens. Treasurer Curror's motion on the Slaughter-houses was item 11.[67] Formal motions from councillors were rarely brief; this one had 260 words and contained six proposals which amounted to a system of regulation for the Slaughter-houses and the meat trade generally that would guarantee that diseased meat did not reach butchers' stalls. Curror reminded the Council of their powers under sections 113–116 of the 1848 Edinburgh Police Act and sections 8 and 9 of the Slaughter-houses Act 1850, before citing data in Gamgee's report to the Privy Council in some detail. As the acting convenor of the Market Committee, which had responsibility for all these matters, Curror had been unable to persuade it of his point of view which was, in essence, that the inspector at the Slaughter-houses was guilty of 'the grossest neglect and carelessness' and ought to be dismissed for failing to enforce the by-laws.

Bailie Cassels was one of those describing their personal experience of diseased animals in Edinburgh; the meat of a beast that could barely walk, and whose carcase was subsequently condemned by the medical officer, had been passed as 'sound and marketable'. Even Professor Dick would not have eaten it, he declared. Councillor Bryson, who had his own country slaughter-house, had evidence that meat from cows sold by dairies to pig feeders was diverted into the butchers' market. Councillor Alexander even cited a Fife newspaper report of an Edinburgh butcher disinterring the carcase of a bull in order to sell it as human food. But despite support for Curror's position, and a general feeling that diseased meat was indeed widely sold in the city, councillors were reluctant to take action against an officer without a proper enquiry or to appear to damage trade interests. Councillor James Ford, a man with a strong record on sanitary

66 ECA Shelf 86. William Dick's Trust: Sederunt Books, vol. 1: folios 220, 290–305, 321, 406 (September 1867 to April 1869). I am grateful to Richard Rodger for permission to use his notes on this volume.

67 For full reports of this meeting see: *Edinburgh Evening Courant* 9 September 1863: 4b-e, *Caledonian Mercury* 9 September 1863: 2g–3b, *Scotsman* 9 September 1863: 7a-e. Curror must have spoken for approximately 25 minutes. He made no reference to Gamgee's new figures published three days earlier.

reform, expressed his support for strong regulation but sprang passionately to the defence of the meat trade. He did not want any action that might bring odium upon the butchers, 'a most respectable class of their fellow-citizens'.[68] Referring to 'reckless assertions' in the newspapers he cited Messrs Swan and Son's recent reply to Gamgee: 'some little deference should be paid to what they said'. Ford, posing as the voice of common sense thought the debate 'had too much of the ex parte character about it for the public or Town Council to place much faith in it'; it could be settled by referring it back to the Market Committee. Councillor Jamieson, blithely ignoring a widely expressed view that the cause of the problem lay with a dilatory Market Committee in the first place, agreed with Ford: 'the subject was a delicate one, and ought not to be dealt with hurriedly … it should be remitted back to the Market Committee'. Curror replied that it was not a delicate subject; they ought to act and not just talk about it. Councillor Hill's perceptive comment, that the question was not whether diseased meat was injurious to health but that it was illegal, ought to have cut the discussion short. It did not.

Councillor Alexander, an experienced parish surgeon and strong sanitarian,[69] brought the debate back to the argument between Gamgee and Dick – to the public health risk of diseased meat. The public were left to choose between two veterinary opinions:[70] one that meat from an infected animal presented no risk should by all means be eaten; the other that it was always risky. Alexander expressed full support for Gamgee. Answering the challenge, frequently offered, to prove that diseased meat made consumers ill by producing a case, he roused the hitherto silent William Dick.

> Dr ALEXANDER – … He would like to ask any one – even Professor Dick himself – if he would live on that flesh for the purpose of testing whether it was safe or not – (laughter).
> Professor DICK – I have eaten braxy.
> Dr ALEXANDER maintained that braxy mutton and *pleuro-pneumonia* beef were two different things. If Professor Dick was struck down in health, the

68 Ford, a wine and spirits merchant, was answered by Councillor Alexander: there was money to be made from diseased animals but the butchers wanted the illegitimate trade stamped out as much as the Council did.

69 J. T. Alexander, LRCSEd, was medical officer for St Cuthbert's Parochial Board, one of the three poor law authorities in Edinburgh. He and Curror were often allies in Council on sanitary matters. Both voted against Henry Littlejohn's appointment as Medical Officer of Health on the grounds that he already had more than enough to do as Police Surgeon, a view they later recanted.

70 As distinct from a *medical* opinion, one interpretation of his remarks is that the public would be better served by some sound advice from the medical profession. According to the *Scotsman*, Alexander said that 'the question was one of far greater importance to the public than to allow them to be guided by the opinion of any veterinary surgeon'. The *Caledonian Mercury* reported him in almost identical terms.

> flesh of his body might be in a good state, but if he died from consumption – (Professor Dick – 'I hope not') – his flesh would be in a different condition.
> Professor DICK – I have to state that Dr Alexander has nothing to say with regard to me. I have not entered into this discussion –
> Dr ALEXANDER – You interrupted me when I was speaking.
> Professor DICK – I think you are talking the greatest bombast and nonsense, and I say you have no right introducing my name in connection with the subject.
> Dr ALEXANDER – If Professor Dick had not written letters in the newspapers, I would not have introduced his name.
> Professor DICK – I do not shrink from public writing, but there has been nothing to cause my name to be brought up here.
> Dr ALEXANDER continued his remarks by saying that he had a conversation with several medical men in Edinburgh on the subject – (cries of 'Oh'). They might cry 'oh' as they liked, but these gentlemen were of opinion that there was a great deal of disease produced, both in Edinburgh and elsewhere, by that bad meat.[71]

A sub-committee had reported on this matter in July but, like so many remits to sub-committees, this one appears to have been no more than a means of procrastinating. This time the matter was again sent to the Market Committee with some additional members and a demand by the Lord Provost for a full investigation.[72] Over an hour of a two-hour meeting had resulted in a characteristic sort of municipal filibuster.

Treasurer Curror received immediate but anonymous support in the *Scotsman* from 'Anti-Carrion' who calculated that for one man to inspect 500 animals a day in eight and a half hours would allow one minute per animal. Some days would allow only 30 seconds. A small charge per animal would pay for inspectors in both the Slaughter-houses and the markets, a small price to pay to protect citizens against 'this crying evil'.[73] But Curror was roundly criticized by another correspondent, 'A Butcher', for shifting the blame away from the Market Committee, of which Curror was a member, to the Superintendent of the Slaughter-houses. Curror had seen the diseased animals books, with their erasures and irregularities, several times, yet

71 *Caledonian Mercury* 9 September 1863: 3b. The three newspapers reports convey speech in slightly different words, only occasionally using quotation marks, but something very close to an accurate transcript can be reconstructed without difficulty by comparing them. This exchange between Alexander and Dick is more fully reported in the *Mercury* than the other papers, though the reporters for the *Scotsman* and the *Evening Courant* took down several phrases missing from the *Mercury* and they apparently heard more frequent laughter, and a murmur of 'hear, hear' when Alexander reported the opinion of his medical interlocutors. The other papers also refer to his conversations (plural) whereas the *Mercury* implies a meeting of medical men together.

72 *Edinburgh Evening Courant* 9 September 1863: 4b-e.

73 *Scotsman* 11 September 1863: 2f.

had taken no steps to obtain an explanation from those who kept the books. Indeed, five days before launching his attack in Council he had been present at a meeting of the Committee with the offending books on the table while the Superintendent sat in vain for two hours in an ante-room waiting to be called into the meeting. The correspondent, clearly an acquaintance of the Superintendent, pointed out that it was the latter who had instigated this record of diseased livestock in the first place, and that the Committee had seen them at most of their meetings over the preceding three years. The Superintendent, he added, had been a conscientious officer of the Scottish Society for the Prevention of Cruelty to Animals.[74]

The disarray in the Council became apparent at the next meeting on 29 September over a motion not to approve the proposal to appoint additional members to the Market Committee. An argument ensued, with a faction claiming that such a move would set a bad precedent, that the additional members nominated were supporters of Treasurer Curror, and that the proposal to enlarge the committee was taken by an inquorate Council, a point on which the Clerk had to rule. This was a classic rearguard action by a one-issue faction. It took a vote to approve the minutes.[75] More than two months later a correspondent in the *Scotsman* enquired

> what is being done by the Market Committee in the diseased meat question? The public has been looking anxiously at every meeting of the Town Council for their report, and surely it cannot be such a very arduous undertaking for them to give their deliverance when they possess a complete statement from the books of their own Inspector of Meat.[76]

The only surviving record of the proceedings of the Market Committee is in a list of agenda items for each meeting with a brief note of any decision made or action taken. On 28 September 1863 there were five issues listed under item 5: Slaughter-houses. They included the remits from 13 July and on Treasurer Curror's motion. Against all five items is the single word 'Delay'.[77] The committee went about their task in a quasi-judicial way, dividing their enquiry into the Slaughter-houses (regulated under the Edinburgh Slaughter Houses Act)[78] and the inspection of cattle and meat in the city at large (under the local Police

74 *Caledonian Mercury* 12 September 1863: 5cd. John Gamgee lectured on cruelty to animals, specifically horses, and Joseph Gamgee senior was a prominent member of the Scottish Society for the Prevention of Cruelty to Animals. *Scotsman* 30 November 1860: 4d and 7 January 1870: 8c. There had long been signs that the inhumane treatment of livestock may have been a factor in public suspicion of Edinburgh cowfeeders and pig breeders. The Market Committee took steps to deal with cruelty in the cattle market: ECA SL45/1 13 June and 3 July 1865.

75 *Scotsman* 30 September 1863: 3a.

76 *Scotsman* 5 December 1863: 7c.

77 Scroll minutes of the Market Committee 28 September 1863. ECA SL45/1.

78 13 and 14 Vict., c. 70: *An Act to provide for the Erection of public Slaughter-houses for the City of Edinburgh, and for the regulation of the same* (15 July 1850).

Act and the Nuisance Removal Act),[79] and interviewing witnesses, including Dr Littlejohn.[80] For this they required 12 meetings spread over seven months. Their printed report was 'read over and carefully considered clause by clause' at the last meeting of their investigation on 27 May 1864. It is a mere 2,300 words long.[81] The recommendations were not startling and leave an impression that parsimony and understaffing were one of the main causes of the failure to regulate the meat trade. History would suggest that incompetence, carelessness and self-interest had more to do with it. On the Slaughter-houses the Committee recommended the dismissal of the superintendent, John Ramsay, the appointment of a replacement and an assistant, at £150 and £80 a year respectively, a daily regime of inspection, and a secured booth for diseased cattle. On outside inspection they recommended an inspector of markets and an assistant at £200 and £100. Those appointed had, the report said, to be 'properly qualified', a stipulation that suggests the jobs had been done by men who were *not* qualified. Most of the other recommendations amounted to no more than enforcing the law. The main source of bad meat lay in the slaughter-houses just outside the city boundary which held out 'a strong temptation to the needy and rapacious dealer to drive thither such animals as he would not like to subject to inspection at the slaughter-houses'. Such meat was then smuggled into the city in 'bags and other contrivances'. This was a clear admission that there was unsound meat for sale but it did not point the finger at the city cowfeeders and diverted attention away from diseased beasts presented openly at the municipal Slaughter-houses. The requirement of the inspectors to seek out bad meat not just in market stalls and shops asked them to do more systematically what the police were already doing. The suppression of private slaughter-houses within a mile outside the city boundary was what the Act of 1850 already required.[82] The whole protracted business had achieved very little.

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79 11 and 12 Vict., c. 113: *An Act for more effectually watching, cleansing, and lighting the Streets of the City of Edinburgh and adjoining Districts, for regulating the Police thereof, and for other Purposes relating thereto* (14 August 1848); 19 and 20 Vict. c. 103: *Nuisances Removal (Scotland) Act* (29 July 1856). Under section 18 of the latter there was a maximum penalty of £10 per piece of meat exposed for sale. 18 and 19 Vict. c. 121: *Nuisances Removal and Disease Prevention Acts Consolidation and Amendment Act* (14 August 1855) gave the same powers under section 26.

80 Scroll minutes of the Market Committee, 18 January 1864 and 25 March 1864. ECA SL45/1.

81 Despite appearances, the text reproduced in the *Scotsman* 1 June 1864, 8cd, is less than half the full report which was submitted as part of Appendix 4 of the *Report from the Select Committee on Cattle Diseases Prevention, and Cattle &c. Importation Bills*, PP 1864 (431) vii.221–3. The eight-page report, as finally approved on July 11, 1864, is found with the Council Minutes for that day in ECA SL1/1/288. It contains one recommendation not found in the original report of 27 May 1864, that at no time when the Slaughter-houses were open should the Superintendent and his assistant both be absent at the same time.

82 13 and 14 Vict., c. 70, section 26. MacLachlan 2004–5: 66.

Having at last received what it required from its Market Committee the Council, as usual, deferred discussion.[83] Three weeks later they received the minutes of a meeting of the local Fleshers' Association, complaining that since under the Edinburgh Slaughter House Act of 1850 they were obliged to pay for the running of the Slaughter-houses (thereby, in their view, subsidizing the city) they would now be obliged to pay a further sum for the additional inspectors. But again the Council declined to discuss the Market Committee's report and it was not discussed and approved until July.[84] Even then the Committee did not hurry to appoint the additional inspectors as recommended.[85] The new Superintendent of the Slaughter-houses, David Anderson, had been a butcher, cattle salesman and farmer; his assistant Robert Reid, was a 24 year old vet (one of two shortlisted) with four years' experience. Robert Wilson, the new inspector, was a cattle agent and farmer from Lockerbie; his assistant was the previous inspector, Thomas Dickson. Bailie J.T. Alexander was probably right that the process was thorough and the appointments just. But that did not prevent a typical squabble over the posts in Council. A last-minute intervention from 26 of the city's medical elite, urging the appointment of a man with, *inter alia*, 'scientific knowledge and skill in microscopic examination', unsettled the Council but was too late to alter the recommendations. The former had published a letter in the *Scotsman* and it was tabled with the report of the Market Committee; surprisingly one of the signatories was Henry Littlejohn.[86] Several councillors, particularly those looking for more scientifically qualified men to hold these posts, voiced objections to those recommended. Alexander told his colleagues that the appointees were very well qualified but in any case they had appropriate expertise constantly on hand: 'these gentlemen surely forget they had an officer of health to whom the Town Council paid a high salary and could fall back upon if necessary. He knew of no man more experienced in the use of the microscope than Dr Littlejohn'.[87] Others, wearied and irritated by opposition after months of debate, did not want to hear any more argument.

Councillor David Lewis expressed his objections at length. 'During the sittings of the Committee of Inquiry it had been made painfully evident … that much of the shameful mismanagement brought to light was caused by influences brought

83 If the reason was that they had only just received their copies at the meeting, nobody said as much. *Scotsman* 1 June 1864: 8cd.

84 With the exception of its provisions for excluding convicted fleshers from the markets. *Scotsman* 22 June 1864: 7d and 12 July 1864: 4bc.

85 Those shortlisted were interviewed on 1 September 1864, and appointments agreed at Council five days later. *Caledonian Mercury* 7 September 1864: 3bc.

86 *Scotsman* 5 September 1864: 4b. Littlejohn signed as Medical Officer of Health and it seems likely that he was one of the organizers if not the originator. Among the other signatories were the presidents of both Royal Colleges, James Simpson, Alexander Wood, James Spence and Douglas Maclagan.

87 *Scotsman* 7 September 1864: 7a. Two months later Alexander would preside at the trials of two butchers where the relevance of the microscope became a point of contention.

to bear upon our officials by certain members of the trade over which they were appointed to exercise a supervision. Every member of the Market Committee knew this to be the case'. One candidate had 17 of his 21 testimonials from 'parties in the city engaged in that profession over which he was to exercise official surveillance'.[88] Robert Wilson was 52 and may have been the target of Lewis' remarks.[89] Citing the amount of imported meat seized and condemned in Glasgow and London, Lewis characterized the response in Edinburgh as timid. Councillor William Handyside wanted a medical opinion of the appointment of the Inspector of Markets.

Seven and a half years after Gamgee aired his 'reckless assertions' Edinburgh now had four men responsible for regulating the 'nefarious traffic' at a cost of £530 per annum. As a *cause célèbre*, however, the diseased meat question was only just beginning.

In the municipal election in October 1863 the diseased meat question became an issue at the hustings. 'Passing by the Water of Leith question,' said Councillor Marshall at a rowdy meeting in St Leonard's ward, 'the only other question of public importance which had engaged the attention of the Council during the past year had been the diseased meat question, which appeared to have gone to the dogs (laughter and applause.)'.[90] Meat inspectors were an easy target for politicians addressing parsimonious electors. In St Bernard's ward, an elector rose (to a cry of 'Humbug') to thank Gamgee for exposing a grave nuisance; from Bailie Handyside he received bland assurances of the competence of the Council, and from another elector the comment that, caught between the 'warrantable' position of Gamgee and the denials of Dick, the Council had to rely on the integrity of their inspectors who had full powers to prevent 'a single ounce of this diseased meat entering butchers' shops'.[91] In Calton ward, Bailie Russell led the tributes to Professor Dick who was standing down from the Council, applauded Dick's view of the diseased meat question, and roundly attacked the critics of the cattle inspection process in Edinburgh. 'Nothing was said about the diseased meat in Glasgow, Manchester, Liverpool, Newcastle, and even London; and why should they hear so much about it here, as if all the diseased cows were sent to Edinburgh?' The answer he concluded was 'a certain gentleman' running the other school of veterinary surgery. He did not need to name Gamgee, nor did he.[92] In Newington

88 *Caledonian Mercury* 7 September 1864: 3b.

89 He was the oldest in a shortlist of three, the others being 50 and 41: scroll minutes of the Market Committee, 1 September 1864. ECA SL45/1. The objection to the appointment of men in their fifties was that they earned of right generous pensions after only a short period of service.

90 *Scotsman* 27 October 1863: 4d. The Water of Leith, the then polluted river running through Edinburgh, flowed for decades as a cause of political dispute.

91 *Scotsman* 28 October 1863: 3de.

92 *Scotsman* 28 October 1863: 3c. Or as 'Anti-Humbug' fulminated six weeks earlier, 'How is it there is no outcry in Glasgow, or Aberdeen, or Dundee, or any other place, as far

ward, Councillor Bryson was up for re-election. A typical knockabout exchange reveals some public attitudes to the diseased meat question and expert knowledge:

> Mr COLSTON – … Mr Colston then went on to say that they had heard a great deal about Gamgee. (Laughter.) One Professor told them that if they ate diseased meat they would thrive, and another said that if they did so they would die. But a third Professor, a great oracle, told them that stinks and stenches were not offensive – in fact they were healthy. (Laughter.) Now this oracle had borrowed his information from Smollett – (A voice – 'Smell it,'. Loud laughter) – the only difference being that Smollett made a distinction in smells, and this Professor did not. (Renewed laughter.) To return to Gamgee. Mr Bryson, for the interest he took in this Gamgee affair, got elevated to the position of a member of the Market Committee. This committee met in the Council Chambers, but they did not know what went on in the market.
> Mr BRYSON – Don't shake your hoary locks at me. I'm not on that committee. (Loud laughter and cheers.)[93]

The disease meat question had become a talking point in Edinburgh and inevitably offered opportunities for those disinclined to regard it as a serious public health matter to make fun of it.

The Select Committee on Cattle Diseases 1864

By 1863 Gamgee could no longer be regarded as a maverick and a nuisance; he was a threat to the cattle interests. The Select Committee on the Cattle Diseases Prevention and Cattle Importation Bills gave him an opportunity to expound his views at length to the legislature. It also provided a chance for the trade to take him on. The Committee, which took evidence in May and June 1864 from 22 witnesses, recommended that neither bill should be proceeded with; indeed, it expressed a view that the regulations controlling the importation of cattle through the Port of London should be relaxed.[94] Naturally the Committee was concerned with Britain as a whole – these were general bills – but as well as the most prominent London medical officers and veterinary surgeons, the witnesses included John

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as I know? Can it be that there is only one Professor Gamgee, and that he has nothing to do with any of these towns?'; *Caledonian Mercury* 15 September 1863: 3d. The observation was partly correct. The conclusion was wholly wrong.

93 *Scotsman* 29 October 1863: 4bc. Like modern tabloid journalism, the reports of ward meetings reveal local political issues in ways that more sober reporting failed to do.

94 *Report from the Select Committee on Cattle Diseases Prevention, and Cattle &c. Importation Bills,* PP 1864 (431) vii. v.

Hall Maxwell and John Swan. The dispute over the Edinburgh dairies became a crucial issue in the Select Committee's enquiry.[95]

Convictions for the sale of unwholesome or diseased meat in Edinburgh were quite common under Local Acts of 1831, 1837 and 1848. There was nothing new in regulating the quality of meat sold to the public other than increased powers to inspect, confiscate and fine.[96] What *was* new was the charge that disease was endemic, that the trade did not recognize this, and that the charge came from an upstart new-fangled scientific veterinarian. Some of the dairymen recognized the truth of Gamgee's accusations, indeed they had – consciously or carelessly – provided him with much of his information. But the leaders in the trade, notably John Hall Maxwell of the Highland Agricultural Society of Scotland and John Swan, the cattle dealer, renewed their attack on Gamgee. Thus when Gamgee was called as the chief witness to the Select Committee he was accused of fabricating evidence and subjected to fierce and personal attack from well-briefed critics on the committee. Despite Swan's remark nine months earlier that 'any wise legislation [to suppress the traffic in unwholesome meat] would meet with hearty support from farmer, dealer and butcher alike', the Bills were thrown out and, in the smug words of the *Veterinarian*, left the country 'in the same tranquil position it enjoyed before the sensationalists appeared on the stage'.[97] But the attempt to discredit Gamgee failed; the committee, some of whom seem to have had difficulty grasping Gamgee's crystal clear answers, were no match for his total command of his subject and the minutes of evidence (recording his answers to 1,155 questions – nearly a third of all questions to the 22 witnesses – and reproducing his supporting documents) reveal not only the unpleasant tactics of Gamgee's opponents but the unhealthy state of the livestock industry.[98]

Gamgee was the sole witness for the first two days of the enquiry. In the course of 1,013 questions he adverted to Edinburgh in only 13 of his answers. But his claims, which in all cases merely repeated what had been published in his report to John Simon and the Privy Council, were bold and adamant:

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95 Four appendices, 3–6, present detailed evidence on cattle in Edinburgh. John Simon, Henry Letheby, Frederick James Burge and James Beart Simonds were key witnesses.

96 Powers to punish the sale of unwholesome meat were available under local Police Acts in the 1830s: 2 Wm 4, c. 87 (23 June 1832) section 39 and 7 Wm 4, c. 32 (5 May 1837) section 23. Of the 76 cases reported in newspapers from the passing of the Edinburgh Police Act (11 and 12 Vict., c. 113) on 14 August 1848 to 31 December 1865, 41 were under section 115, in 33 cases the Act was not stated, one case was brought under sections 272–4 of the Public Health (Scotland) Act 1862, and two prominent cases under the Sheep and Cattle Disease Prevention Act (14 and 15 Vict. c.17).

97 *Caledonian Mercury* 8 September 1863: 3d. The comment of the Veterinarian in the *Farmers' Magazine* is quoted in Fisher 1979–80: 53.

98 *Report from the Select Committee on Cattle Diseases Prevention, and Cattle &c. Importation Bills; together with the Proceedings of the Committee, Minutes of Evidence, and Appendix.* Ordered to be printed 27 June 1864. PP 1864 (431) vii. Appendix 3 (p. 201).

in the year ending 1 July 1862, 1,075 cows from Edinburgh dairies were sold diseased, out of an average stock of 1,839; that the Edinburgh Slaughter-houses were not carefully supervised, and that 100 to 200 diseased cattle a week were sold in the Edinburgh dead meat market. Only on the question of why he had not reported the total number of cattle passing into the Slaughter-houses was Gamgee challenged, by James Caird who had been provided by Hall Maxwell with the figures used in his reply to Gamgee in the *Caledonian Mercury* the previous September.[99]

The problem for Gamgee came with the questioning of Hall Maxwell who offered his evidence uninvited and clearly primed his allies on the Select Committee with what he wished to say about Gamgee's Edinburgh evidence to the Privy Council, and which he had investigated with the aid of some local dairymen. Maxwell's written evidence included a list of 98 cowfeeders with their addresses and number of cows, accompanying a statement that all 98 declared they had signed. The statement declared that they had not supplied John Gamgee with information about the number of their cows or how many were diseased; his figures were 'false and without foundation'. A signed declaration by 20 cow dealers declared that they had not supplied Gamgee with any information whatever on the Edinburgh dairies.[100] After he had elaborated on his written evidence that Gamgee had had no cooperation from the dairymen, Hall Maxwell was then invited to comment on various answers given to the Committee by Gamgee. Towards the end of his evidence the questions were leading, almost comical:

> [Q] 2,111. Do you wish to prevent the alarm which has been felt that this large number of beasts unfit for human food are sold? – I do; I noticed in the discussion of the Town Council of Edinburgh, that an old gentleman, one of the magistrates, declared he believed now he was breeding tape-worms himself …[101]

Some of the differences between the two sides were matters of perception of disease and risk, and Gamgee's figures were, by his own admission, imperfect.[102] But his contention that the proportion of cattle sold for slaughter in a diseased state was high and that consequently there were concerns for the quality of meat, was disbelieved but not countered with evidence. The inability to detect or measure the

99 Qq. 80, 314, 455 and 458, *Caledonian Mercury* 8 September 1863: 3de.

100 *Report from the Select Committee on Cattle Diseases Prevention, and Cattle &c. Importation Bills*, PP 1864 (431) vii, 210–12.

101 Ibid., 114.

102 An admission that prompted some on the committee to deny that they were statistics at all. Gamgee's reply, citing William Farr and James Stark of the Registrar General's offices in London and Edinburgh, that all statistics were imperfect appears to have baffled some of the committee.

effect on humans of eating meat or drinking milk from diseased cattle, was taken as evidence that the fears were exaggerated, a point to be taken up shortly.

When Gamgee was recalled by the Select Committee a month later and confronted with Hall Maxwell's evidence, his defence was devastating. It is abundantly clear that dairymen had been either misled, intimidated or both. In column after column of extraordinary evidence, Gamgee's answers to hostile questions (especially from the Chairman T. G. Baring and Lord Naas) describe in minute detail his meetings with named cowkeepers and the dates. He had presented his evidence on disease and mortality in the Edinburgh dairies at a meeting at the New Veterinary College.

> There were between eighty and ninety dairymen present. When I began my statement by saying that, in 1860, 685 cows were slaughtered by butchers and Edinburgh dairymen, Mr Gibson called out 'you may double it,' there was no dissentient voice, and all admitted the truth of the statement. This statement I have from the shorthand writer's notes. [103]

His inquisitors were clearly not accustomed to witnesses who covered their backs by having their meetings recorded by an independent shorthand writer. Whatever impression they gained of the chief witness they sided with the agricultural interest and recommended that the Bills failed. At the start of the session of the New Veterinary College in November Gamgee used his opening address to hit back at his detractors in the Select Committee, 'those who have been most loud and vindictive in their attacks on me', though he had been warned by a friend to drop the subject 'considering the temper of and the feeling of stock-owners on the point'.[104] In true Gamgee style, to reinforce his data on the number of dairy stock sold because they had become diseased he presented data, dairy by dairy, that had been collected by someone who doubted him and had therefore visited dairies for himself, sending his findings to Gamgee 'only last week'. The 12 cowsheds normally kept up to 191 cows. In the course of less than ten months 1,183 cows had been sold diseased and 12 died in situ.[105]

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103 *Report from the Select Committee on Cattle Disease Prevention, Cattle, &c. Importation Bills*, Minutes of Evidence Q.2655 ff., PP 1864 (431) vii.155. Baring (Lord Northbrook from 1866) and Naas (Lord Mayo from 1867) both became Viceroys of India. Neither grandee had a particular understanding of agriculture. The original chairman and M.P. who introduced the Bill, the Liberal Henry Bruce (Lord Aberdare from 1873) was sympathetic to Gamgee but left the committee on 27 May 1864. See *Oxford Dictionary of National Biography*.

104 The scope and objects of the veterinary profession … introductory lecture delivered in the New Veterinary College, *Edinburgh Veterinary Review and Annals of Comparative Pathology* 6 (1864): 710. The parts of the lecture relating to the subject of this chapter were given verbatim in the *Scotsman* 3 November 1864, 6cd.

105 Ibid. 708–9. The dates of the visits were also stated! The periods over which the infections occurred ranged from one week to ten months.

But the skirmishing continued. In December 1864 a public meeting gathered in the Corn Exchange to hear a complaint from John Swan. He had sent 140 cattle to Glasgow by special train. Gamgee telegraphed the Glasgow police to warn them that diseased cattle were on the way. Detectives met the regular train, found no cattle, asked station staff if the cattle on the other train were diseased-looking, and departed. Next day four officers spent all day in the market observing the sale of Swan's stock and telegraphed Gamgee that several of them were on their way back to Edinburgh. Then, Swan continued, Gamgee had sent for Wilson, the inspector, asking him to 'rise out of his bed and look after these supposed diseased cattle'. Wilson refused. Swan, advised by the meeting to sue the Glasgow magistrates, claimed he had lost £200 because the cattle were sold more cheaply than otherwise. His fury was evident: 'I believe if you were to put such a man as Gamgee in Aberdeen, Glasgow, Inverness, and Dumfries, there would be nothing but a reign of terror … as I told Captain Smart [Chief Constable of Glasgow], that man has deceived the Government, played upon the Privy Council, and was kicked out of the House of Commons under the greatest disgrace …'. At which point the chairman stopped him.[106]

The Medical Officer of Health: the Voice of Authority

With no control over the import of cattle disease into the city or powers to inspect the cattle market, and their Market Committee struggling to regulate the slaughter-houses and the meat trade, Edinburgh Town Council increasingly looked to their new Medical Officer of Health, Henry Littlejohn, for expert advice and a voice of authority. Since his appointment in the Autumn of 1862 his priorities had been epidemic disease and the insanitary condition of the Old Town but, as Edinburgh Police Surgeon since 1854, Littlejohn had already been acting as de facto medical officer and assisting in the prosecution of diseased meat cases.[107] He had a strong, holistic approach to the sanitary state of the city and his acute sense of its requirements included the meat and dairy trades; he was well aware that the city cowsheds were regarded as an increasingly unwelcome nuisance in an age growing much less tolerant of nuisance.[108] As the built area of the city grew rapidly

106 *Caledonian Mercury* 8 December 1864, 2fg, *Edinburgh Evening Courant* 8 December 1864: 4a.

107 In evidence at the trial of William Robb (discussed below) that he had examined almost every beast condemned in the city since his appointment as Police Surgeon.

108 The concept of nuisance was a precise and legal one and is not employed here in the everyday usage of today. Thus confronting the issue of the proximity of humans and livestock he compared urban and rural expectations; for town dwellers 'to inhale the effluvia of Byres from morning to night, is highly disagreeable, – to some constitutions positively hurtful … Byres under such circumstance are veritable nuisances'. In other words a breach of the law. John Hill Burton, 'On the state of the law as regards the abatement of nuisances

in the second quarter of the century, and the population of dairy cows also rose to meet demand for fresh milk, the nuisance increased. The removal of its fulzie, or in local terminology 'police manure', was a major preoccupation of the Edinburgh authorities, not least because revenue from the sale of manure to farmers paid for the cleaning operations of the city.

The link between the milk trade, pig rearing, slaughter-houses and the sale of bad meat to the public was evident long before this period. The Edinburgh Slaughter-houses Act of 1850 established a municipal abattoir, abolished private slaughter-houses in the city and for three miles outside its boundary, and gave the city an almost unique measure of control over the slaughter of livestock.[109] Before the opening of the new Slaughter-houses in 1853 there were 78 killing booths in the city used by some 150 butchers. In addition many butchers slaughtered calves, sheep and lambs at their shops. Writing in August 1847, just before the 1848 Edinburgh Police Act, the Inspector of Lighting and Cleaning described the regulation of this acknowledged public nuisance as 'worse than useless'. He also proposed the provision of public abattoirs by a joint-stock company, and the prohibiting of other killing places specifically 'as a means to prevent the sale of unmarketable and unwholesome meat'.[110] Local Police Acts gave limited powers to control cattle keeping and the sale of unfit meat but these provided only makeshift solutions.[111] What was required was a thorough study of the urban dairy problem and a considered policy for regulating it.

In 1863 and 1864 Littlejohn, although advising the Market Committee on appointments and sanitary aspects of their various remits, kept his own counsel. When the Town Council finally got around to discussing the matter in September 1863, if the opinion of their Medical Officer of Health was sought it was certainly not recorded.[112] Apart from writing, in March and April 1864, two brief replies

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and the protection of the public health in Scotland, with suggestions for amendment'. *Sanitary Inquiry: Scotland Reports on the sanitary condition of the labouring population of Scotland.* Appendices pages 40–65: PP 1842 (8) xxviii, 44–69.

109 13 and 14 Vict., c. 70: *An Act to provide for the Erection of public Slaughter-houses for the City of Edinburgh, and for the regulation of the same* (15 July 1850).

110 Murray 1847: 5. The outcome of this extraordinarily prescient and intelligent report was Murray's proposal for the Slaughter-houses in Fountainbridge based on what he observed in Paris, and the 1850 Edinburgh Slaughter-houses Act.

111 11 and 12 Vict., c. 113: *An Act for more effectually watching, cleansing, and lighting the Streets of the City of Edinburgh and adjoining Districts, for regulating the Police thereof, and for other Purposes relating thereto* (14 August 1848). The General Police (Scotland) Act 1862, otherwise known as the Lindsay Act, gave powers for regulating slaughter-houses and markets but Edinburgh had no need to adopt any of them. It had wide, if vague, powers to regulate the sale of foodstuffs but gave no specific powers to appoint meat inspectors. The strongest powers under general legislation were in the Nuisance Removal Acts.

112 *Caledonian Mercury* 9 September 1863: 3b, *Scotsman* 9 September 1863: 7d, *Edinburgh Evening Courant* 9 September 1863: 4b-d.

to questions from John Hall Maxwell, who was garnering evidence against Gamgee for the select committee, Littlejohn made no direct public comment. He was, however, making his views plain enough by appearing as an expert (and sometimes material) witness in a number of prominent prosecutions of butchers, discussed below. He was also quietly doing his own investigations, every bit as thorough as those of Gamgee. His chief concern – the risk to human health and welfare – was different but closely related to Gamgee's.

Then, in November 1864, Littlejohn published his *Report on the Condition of the Byres*.[113] As a concise and perceptive outline of the problem, it was a masterpiece. It contained clear recommendations and extensive appendices, one of which was a complete list of the 171 dairies in the city, with the name and address of the proprietor, the normal capacity of his cowshed, whether it was under the dwelling or apart from it, and a statement of its cleanliness and ventilation. He had in the course of the summer visited and inspected them all and doubtless had invaluable conversations with the cowfeeders; systematic survey as well as insight.[114] There were concentrations of dairies around Fountainbridge near the Slaughter-houses and in Canonmills on the northern fringe of the New Town but dairy cattle were to be found in most parts of the city (Figure 5.3). Other appendices in his *Report* reproduced laws for the regulation of urban byres including those for London and Paris. Littlejohn knew Paris well and frequently took it as his model for urban regulation. Finally he demonstrated the importance of the local dairies for the city's milk supply, only five per cent of which arrived by railway. Littlejohn made very clear to the Council why he was trailing his report on the byres a year before its final publication: 'first, that I was anxious to show the manner in which I was prosecuting my enquiries, so as to render my report as complete as possible; and, secondly, because the management of our dairies was at present exciting a great

113 A sole surviving copy has recently come to light in Edinburgh City Archives, SL12/287 (2). I am grateful to the City Archivist, Richard Hunter, for bringing this to my attention. It was reproduced (without the Appendices) in the *Scotsman* 30 November 1864: 7ab, summarized in the *Edinburgh Evening Courant* 30 November 1864: 2c, and just under half of it was reproduced in the *Caledonian Mercury* 1 December 1864: 4d. It was incorporated into Littlejohn 1865: 50–56. In that final *Report*, in addition to a small number of minor stylistic changes were two important deletions from the 1864 version. First, Littlejohn stated that he had visited the byres 'during the past summer'. Secondly, whereas in the final 1865 *Report* Appendix VI is a simple table with the number of cows in the city in 1857 and 1864, in the original 1864 report it contained an extract from a speech by Councillor Ford, taken from the *Scotsman* 6 May 1857: 3d, describing and enumerating the dairies in the city.

114 Given his extraordinary work load elsewhere this is an impressive piece of fieldwork. In 1900 the two full-time cowshed inspectors of Liverpool made 4,415 inspections; the average dairy had 13.5 cows to Edinburgh's 12.2 in 1864. E. W. Hope, *Report on the Health of the City of Liverpool during 1900, by the Medical Officer of Health* (Liverpool, 1901): 51, 113.

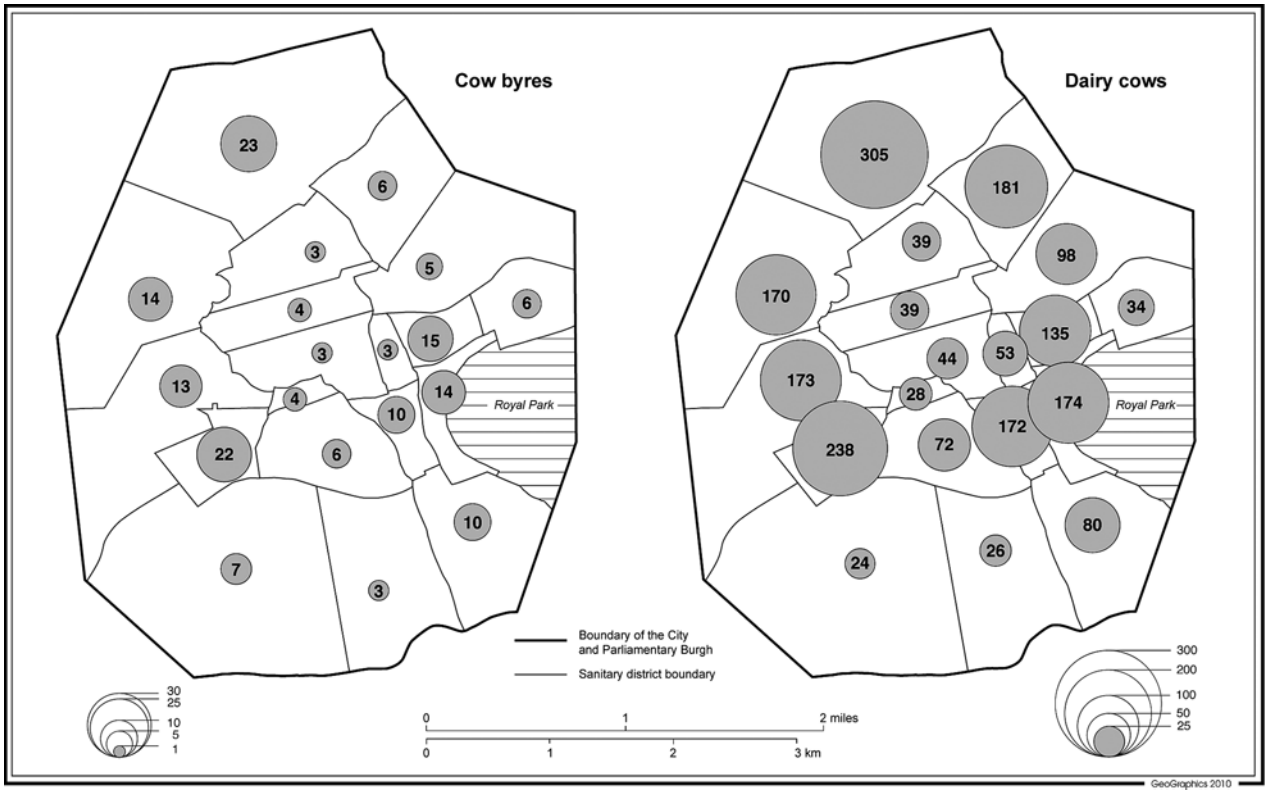

Figure 5.3 Byres and dairy cows in Edinburgh, Summer 1864

Source: Littlejohn 1865, Appendix II. The total number of byres was 171 and of cows, 2,085

deal of public attention'.[115] (The pantomime at the Princess's Theatre opened on Christmas Eve.)

Councillors were impressed. Bailie Alexander moved a vote of thanks to Littlejohn: 'He had never seen a report on which a greater amount of labour had been expended …'. It was approved unanimously. Councillor Ford noted characteristically that he had reported on the state of the byres seven years ago but that nothing had been done. Was this report, he asked, to go to a committee?[116] When Littlejohn's *Report on the Sanitary Condition of the City of Edinburgh* was published ten months later it contained an equally long additional section on the sale of diseased meat. If anything its tone is even more magisterial in quality but also harder; the expert forensic surgeon took his scalpel to the butchers' trade and described its pathology in authentic terms that Gamgee might have envied.[117]

One of Littlejohn's great strengths was his understanding of the tradesman's view and of the economic consequences of sanitary improvement. His report thus begins by balancing the contribution of the dairymen to the local economy against the welfare of the community:

> While care should be taken not to hamper with teasing restrictions a branch of industry which contributes so much to the general comfort, it should never be forgotten that the importance of the traffic, as shown by the amount of capital invested in it, is due to the patronage of the inhabitants, who have a right to demand that the milk they pay for should be clean and of good quality, and at the same time that the cows should not be so kept as to prove a source of public nuisance.[118]

Many byres were ill-adapted stables in bad repair rented from neglectful landlords.

> In such places, properly enough constructed to accommodate a few horses, half of whose life is spent in the open air, we usually find double the number of cows doomed to spend their entire existence. I have often remarked how much better the horse is tended than the cow, which is the more delicate and sensitive animal.[119]

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115 *Edinburgh Evening Courant* 30 November 1864: 2c, *Scotsman* 21 December 1864: 7a.

116 *Scotsman* 21 December 1864: 7a.

117 Littlejohn 1865: 56–61. Littlejohn's career as a famous lecturer in medical jurisprudence and an expert forensic witness, who held courts in thrall, was already being established. His ability to dissect an issue and present his conclusions in striking language comes across.

118 Littlejohn 1865: 50.

119 Ibid. 51.

This state of affairs, said Littlejohn, would continue 'so long as the trade in question is in the hands of persons possessing little means, and who cannot afford to pay a rent for proper premises'. The trade needed capital invested in purpose-built premises. Nevertheless, he described in unflinching terms the foul nuisance that the byres were to the public and, more significantly for this chapter, the danger they were to the cattle and thus the interests of the cowkeepers themselves. Many dairymen were unwilling to accept that disease among their stock had anything to do with their husbandry or the state of their premises. Littlejohn's assessment was similar, though expressed in kinder terms, to that of Bailie Miller after an inspection of byres the following July: 'One cowfeeder in Canongate actually refused to ventilate his byre, and the reason he assigned was, that when cows got fresh air it killed them. (A laugh.) … so long as men were thus ignorant of their own interests and of their duty to the poor animals in their possession, there would always be plenty of diseased cows'.[120] And not just diseased animals; Littlejohn was concerned about the poor quality of milk (notwithstanding some watering) due to the poor feeding and housing of cows.

Although Littlejohn tempered his criticisms of the dairymen with some sympathy, he directed his sharpest remarks at the dishonest ways in which animals reached the dead meat market. He needed hard data on mortality in the dairies. 'This I could hardly expect to obtain from the Dairymen themselves', he remarked, (showing a more realistic attitude than Gamgee) and turned to the Slaughter-house books, which he found defective because they did not say where beasts had come from. Dairymen, not wishing to damage their trade, were unwilling to say.

> A system of secrecy is thus established, and the only clue to be obtained as to the healthiness or otherwise of our Dairies, is to be found in the number of diseased animals brought to the slaughter-houses by certain butchers. But dead meat can be brought into the city from all quarters, and at all hours.[121]

In other words, Littlejohn had already learned from his wide contacts in the trade the truth of the widespread claims that a significant amount of meat from diseased animals was on sale in the city and that it reached the markets by subterfuge. The precise way this happened he would reveal in the section on diseased meat published in his full report on the state of the city nearly a year later, after the cattle plague had arrived, and, more significantly, after several prominent trials of butchers in the courts. Meanwhile, he set out seven clear recommendations about

120 *Scotsman* 16 August 1865: 6c.

121 As Gamgee put it, 'If an outbreak of human cholera or smallpox occurs, we set to work and drain, ventilate, and vaccinate; but as cattle proprietors wish to preserve secrecy … nothing is done'. The Scope and Objects of the Veterinary Profession … Introductory Lecture delivered in the New Veterinary College, *Edinburgh Veterinary Review and Annals of Comparative Pathology* 6 (1864): 709.

the byres for the Council to consider. Byres should be registered with an assigned capacity (as he might have added, lodging-houses had been a decade earlier); they should be inspected and keepers obliged to observe remedies ordered; they should be supplied with adequate water; manure should be removed weekly 'as in Paris'; disease among stock should be notified (Littlejohn was to be a notable advocate of compulsory notification for the medical profession); that the history of every dead cow brought to slaughter should be recorded and the dressing of the carcase viewed by an inspector; that no meat be sold in the city unless inspected at the Slaughter-houses.[122]

Most of all, Littlejohn expressed his view that cowkeeping should be banned from the central parts of the city and those on the periphery should be regulated. Again he drew on his experience and admiration for long-established methods of environmental management in Paris: 'No doubt an outcry would be raised by the Dairymen that an attempt is being made to ruin them, were regulations introduced here similar to those which have been in force for nearly 20 years in Paris'. As the son and grandson of Edinburgh bakers he could write with feeling that the 'Bakers … have been lately placed under stringent regulations as to the cleanliness and ventilation of their work-shops, and it cannot be expected that the Dairy trade … can much longer be exempted from the operation of the law of progress'.[123]

It is instructive to compare the approaches of Henry Littlejohn and John Gamgee. Whilst they certainly knew each other, there is no record of any direct exchange between them but their words reveal different ways of presenting and solving problems. Gamgee was a brilliant analyst possessing some of Littlejohn's forensic expertise and rarely caught out in debate. He worked tirelessly (some would say obsessively) to gather and refine evidence. But he was an outsider to Edinburgh society, uninvolved in its municipal affairs and, as the rest of his extraordinary career shows, someone with interests international in scope and ranging far beyond veterinary medicine.[124] Littlejohn, a specialist in medical jurisprudence, was also an unexcelled analyst, but he was also an Edinburgh man, linked to every branch of its professional life and, above all, a respected public servant. He was acutely aware of the interests of his fellow citizens, especially their livelihoods. Whilst perfectly capable of speaking uncomfortable truths and dispelling humbug where necessary, he chose his words with forensic care, presenting opportunities for his targets to come round to his view of the matter or to find a pragmatic solution. This was especially true of the way he addressed his

122 Littlejohn 1865: 55–6.

123 Ibid. 55.

124 After the failure of his Albert Veterinary College in London, in 1869 he abandoned veterinary medicine to pursue an interest in refrigeration (the logical way to import dead meat rather than live, potentially diseased, cattle) but gained a reputation for eccentric and not always successful applications of science to invention. His Glacariums had a short life as the first mechanically frozen ice rinks. As 'The Man About Town' put it, 'Professor Gamgee is the Galileo of the rink', *Sporting Gazette* 26 February 1876: 205.

political masters. *He* frequently mastered *them* without ever forgetting that he was indeed a public servant.

Inspection and Prosecution

The result of public agitation was bound to lead to more prosecutions of fleshers and shop keepers selling diseased meat. The annual reports of the Superintendent of Police, Thomas Linton, record the number of prosecutions for the sale or possession of 'unwholesome Meat or Food', and thereby provide a measure of public interest.[125] Figure 5.2 shows a sharp peak in 1865 but also years of activity by the inspectors or police in the 1850s, before John Gamgee's campaign was under way. Unsurprisingly the local press paid close attention to the diseased meat question only when it excited their readers. The cases of 71 persons charged for having unfit meat for sale have been found in the years 1851–65. Superintendent Linton reported 197 cases in the same period, and while, as John Gamgee noted, half the cases in the 1850s related to other foodstuffs, fish in particular, that still leaves perhaps 50 to 80 prosecutions that have not been found in the newspapers.[126] Reports of proceedings in the Burgh Court, where these cases were prosecuted, are sometimes confusing as to the precise provisions under which the cases were conducted. Most of them were brought under section 115 of the Edinburgh Police Act 1848 but it is hard to avoid the conclusion that the Court itself was confused over the chaotic law in this area.[127]

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125 Linton was appointed in 1851 and the annual publication of crime statistics seems to have been started by him. Statistics have not been found for earlier years.

126 Several of these cases have been found in a reading of the *Edinburgh Evening Courant* and the *Scotsman* on paper or microfilm but the rest have been located by searching the digitized copies of the *Caledonian Mercury* and *Scotsman* on-line. This is a convenient and fruitful but hit-and-miss procedure. The text captured by optical character recognition is, inevitably deficient and patchy. 'Hit rates' can be very low indeed.

127 The local Police Act, 11 and 12 Vict., c. 113 (14 August 1848), section 115, allowed for a maximum fine of £20 or 60 days imprisonment. In the 1864 case of Peter Gardiner (described later in this chapter), the *Edinburgh Evening Courant* reported that his offence was contrary to '13 and 14 Vict., c. 71' (though 71 was printed as 17 in one report and 70 in another). This must be 14 and 15 Vict., c. 17, one of a series of terminating Acts renewing 11 and 12 Vict., c. 107: *An Act to prevent, until the First Day of September One thousand eight hundred and fifty, and to the end of the then Session of Parliament, the spreading of contagious or infectious Disorders among Sheep, Cattle, and other Animals* (4 September 1848). It was renewed in 1851, 1853, 1856, 1858, 1863 and in later years. If the report was correct, the choice of a statute no longer in force seems odd. *Edinburgh Evening Courant* 7 November 1864: 2a and 9 November 1864: 2d. In a case in Liverpool the inspectors were admonished by the magistrate for charging under the local Act (maximum penalty £2) and not the Nuisance Removal Act (maximum in that case £100 or imprisonment): *Liverpool Mercury* 5 July 1866: 8f.

A major obstacle for the authorities wishing to use the courts to stamp out the sale of diseased meat was the lack of powers to inspect live cattle. The weekly cattle market in particular was run for and by dealers. In any case the number of fat cattle alone passing through the market off Lauriston Place, and gaining access to it through the narrow streets from Tollcross or the Grassmarket, exceeded 500 a week in the five years 1862–6. Much depended on reports from the public and the vigilance of police officers.[128]

Most of the cases brought to trial were briefly reported and doubtless had the desired effect of making most fleshers and cattle dealers wary. But the fines were little deterrent. The mean fine imposed from 1848 to 1865 was £8; only 11 of the 70 cases where an amount is reported received the maximum penalty of £20 – three to four months' wages for a skilled building worker – under the 1848 Act.[129] Prison sentences were rarely imposed and then only where the convicted person could not pay.[130] There was, of course, some public support for harsher punishments. At a noisy election meeting in Canongate ward in 1868 Robert

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128 For a robust discussion of the means and limitations of policing diseased meat, see Chalmers 1905, 592–609. Written in his wonderfully readable and vigorous style, it was his presidential address to the Sanitary Association of Scotland in 1896, with the title 'Dead Meat Inspection: the Detective System v. the Clearing-house System'. Dead meat, in Russell's view, could at best only be circumstantial evidence; 'the best way of dealing with this dead meat trade is by detective inspection by a staff of experienced officers, who will watch railway stations, wharves, carriers' quarters, &c.; intercept lorries, suspicious looking butchers' carts, &c., on the street; visit the shops where low-class meat is sold; and who can be sent to the country to interview the owner, see the butcher who slaughtered the animal, the veterinary surgeon who attended it, and otherwise get up to the best advantage all the information necessary for a prosecution if the circumstances require it' (pp. 602–3).

129 On Edinburgh wages see Gray 1976: 43–90. The Health Committee in Liverpool, who understood that their large number of poor presented easy pickings for fraudulent cattle dealers and butchers from rural Lancashire, Cheshire and North Wales, were also conducting a campaign at this time to remove diseased meat from the markets. Similar cases were tried, sometimes with juries, under the Nuisance Removal Acts of 1855 (18 and 19 Vict., c. 121: under section 26 there was a maximum penalty of £10 per piece of meat exposed for sale) and 1863 (26 and 27 Vict., c. 117: under section 2 the maximum was raised to £20 per piece). Most offenders were fined ten or twenty shillings, sometimes because of their own desperate poverty, despite persistent calls for higher penalties to match the profits of their crime, especially in the Health Committee. However, from November 1864 to July 1866 (subsequent months have not been examined) maximum penalties were often handed out and several men were gaoled for periods up to three months. This comment is based on a reading of 43 articles in the *Liverpool Mercury*, 1846 to 1866. Much the same story would doubtless be found in many other cities in the 1860s as an age-old problem with control of rotten meat in public markets was transformed by public awareness of cattle disease.

130 Only one of the cases found preferred incarceration. Thomas Pringle chose 60 days in December 1864, presumably because he could not raise the £20 demanded. *Scotsman* 8 December 1864: 2d.

Cranston told his supporters that he advocated that the sellers of diseased meat should be imprisoned instead of merely fined.[131]

Most press reports are limited to the bare facts of a case, though a few expose some disgusting aspects of the meat trade. In 1865 a flesher, James Clark, was convicted on the evidence of Dr Littlejohn and the inspectors, of possessing 76 pounds of unsound beef from a diseased animal. He was fined £10 or 20 days imprisonment. The surprising mitigating circumstance was that the beef 'had been found under the bed of the accused, and was not, as far as could be learned, exposed for sale'. It was June.[132] The case of Thomas Ancrum is instructive. Convicted in Leith Police Court in June 1864 for selling unfit meat brought in from a farm without inspection, he appeared in Edinburgh before Bailie Alexander in December 1864 for possession of 226 pounds of unsound beef and three diseased rabbits. In the Leith trial the evidence of Littlejohn and Gamgee was flatly contradicted by Dick, a fact that was presented as grounds for mitigation by the defence. Ancrum was fined £10 and given a stern lecture on the great expenditure in Leith on its new Slaughter-house leaving no excuse for the crime. In Edinburgh, Ancrum had Comrie Thomson as his counsel. In looking for the same mitigation sought in Leith, Thomson made the interesting observation that the cautious evidence of the more educated medical men contrasted with the damning evidence of those 'of least education', the inspectors. Littlejohn's caution was because he did not know whether the old beef was from a cow; cow beef was viewed with more suspicion and was not consumed in the Infirmary or public institutions because it came from the dairies. The inspectors seemed to be getting the measure of recalcitrant butchers; the offending beef in this case had been seized in Leith, marked by the inspector, and thereby identified as the offending article in Edinburgh. Thomson, desperate for a defence, could only complain that the witnesses were 'selected from one source' and 'brought in *ad nauseam*' – in other words, the usual suspects.[133]

Some cases, however, were reported in sufficient detail to reveal the problems faced by campaigners and officials. It is clear that whilst some fleshers were indeed behaving in the way John Gamgee had described in 1862 and that substandard meat was on sale to the public, the inspection process was inconsistent, incompetent and almost certainly liable to corruption. The fleshers may have had some justified complaint against bullying by inspectors. Judgements against them were sometimes given reluctantly and a few cases were

131 *Scotsman* 10 November 1868: 6e. Cranston, a radical who owned a number of temperance hotels, was elected and was a member of the Town Council for twenty-two years. *Scotsman* 12 May 1892: 4h.

132 *Caledonian Mercury* 16 June 1865: 2c.

133 *Edinburgh Veterinary Review and Annals of Comparative Pathology* 6 (1864): 410–14; *Scotsman* 16 December 1864: 4c and 17 December 1864: 2d. Ancrum, in his late twenties, appears to have had shops in both Leith and Edinburgh. He was still in business in the 1880s.

dismissed. A constant complaint was that what was passed in the Slaughter-houses was soon afterwards condemned in the markets. In an exasperated letter to the Lord Provost, John Snow, chairman of the Fleshers Association, cited cases where a sick beast was brought for slaughter and its carcase passed by the superintendent, his assistant and the two vets, Professors Dick and Strangeways, only to be condemned by Dr Littlejohn and the two market inspectors, Wilson and Reid. The butchers (unreasonably, for Littlejohn was the senior authority and would have been accorded deference) saw Robert Wilson as the obstacle: 'he holds the key of the position. He says – "I don't care for Professor Dick or Mr Anderson's opinion; if you pass it out of the Slaughter-houses I seize it outside; and we all know what a flesher may expect who gets into the Police Court"'. The real obstacle was Dick, appointed as inspector during the cattle plague; a regulator who did not regulate. The likelihood is that he would dominate his veterinary colleague (employee) and the Slaughter-houses staff. The law by that time was clear, but Snow and his members felt caught between conflicting professional opinions: 'Both parties cannot be right, but who is to decide … It is a most undignified proceeding to see public servants thus divided'.[134]

Newspaper editors had a keen eye for cases in other cities, not just their own. There was strong mutual interest in London and Edinburgh. In 1864 two cases caught public attention in Edinburgh and were reported in some detail in the *Lancet* for the benefit of the medical profession across the British Isles, not least in London, where led by Henry Letheby, as well as John and Arthur Gamgee, strong action was taken against those transgressing the meat regulations. On 12 July 1864 a cattle drover was convicted in New Court, London, of attempting to sell a carcase of diseased Scotch beef which he had been given by a farmer in Forfarshire to bury but which he dressed as meat for sale. He sold a portion to a Scottish butcher and was fined £5 for his pains, but he then took the rest to Newgate Market. The Commissioner sent the drover to prison for 12 months with a heavy £50 fine payable before he would be released: 'He would let the people of Scotland know that they could not send this bad meat to London with impunity'.[135]

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134 *Caledonian Mercury* 7 November 1865: 3b. The rather obsequious last comment was for the Lord Provost. Significantly, Dick had always shown more interest in looking after the interests of the cattle dealers and fleshers than in the hygienic regulation of slaughter-houses. When plans to build a municipal facility to both control the trade and answer complaints from citizens who lived near the many private slaughter-houses, he insisted that any new facility had to be in the centre of the town for the convenience of the trade. He also claimed that the private slaughter-houses were not a nuisance so long as they were kept clean, the implication being that the whole costly exercise of a local Bill, a costly Select Committee, and above all the new facility itself was unnecessary: *Scotsman* 12 September 1849: 4c.

135 *Morning Post* 13 July 1864: 7d. The publication of the report almost verbatim in the *Scotsman* five days later was presumably meant as a lesson: *Scotsman* 18 July 1864: 4g. The penalty was not unusual for such cases in the London criminal courts: *Morning Post* 12 July 1864: 3f and note 168 below. In a quarterly report on the health of the City of

Courtroom Drama

Two Edinburgh prosecutions in particular caught the attention of the local press whose reports were soon reprinted in veterinary and medical journals in London. The first was the trial of William Robb, a flesher of Causewayside. On 5 November 1864, he was charged with having had in the Slaughter-houses the carcase of a cow on 31 October which was unwholesome and unfit for human food.[136] The presiding magistrate was Bailie J. T. Alexander, a circumstance that must have worried the defendant. Bailies Hill and Falshaw were also present. Defending Robb was the 25 year old John Comrie Thomson, advocate, who would later become one of the most brilliant advocates in Scotland and who was to make something of a speciality defending cases of bad meat. The Court was 'crowded to excess', mostly with butchers. The prosecution relied on the evidence of the officials from the Slaughter-houses and Fleshmarket and the expert testimony of Professor Gamgee and Dr Littlejohn. The Procurator Fiscal, Dymock, took the narrow view of the law, that if in the view of the relevant officials the animal had been diseased, then the meat should be condemned as unfit for food and unmarketable. Thomson did not contest that the cow had suffered from 'pleura' but he wished to establish whether the flesh itself was diseased and if so it was unsafe for human consumption. He presented Littlejohn as 'naturally biassed in favour of strictness … and rather against generosity'. As for Gamgee, Thomson led him into making claims as to the specific effects of eating meat from a beast infected with pleuro-pneumonia: carbuncular disease, inflammation, colic and diarrhoea. The consequent intervention and exchange shows how close and so soon in the case Thomson reached the heart of the matter.

> Mr DYMOCK – We are not getting into a system of medicine.
> Mr THOMSON – You will have a system of medicine before we are done. This gentleman has sworn that when an animal is infected with pleuro-pneumonia it is unwholesome and unsound; and I am crossing him as to his knowledge of that fact; and I will cross him as long as I like, because I am going to lead evidence on that, and that is the whole point.
> Bailie ALEXANDER – According to the statute, if you can prove the meat to be unmarketable that is sufficient, even though it is not wholesome.
> Mr THOMSON – If unmarketable means unsaleable, I will bring plenty of butchers to say that they will purchase it and sell it. But my client is charged

London, Dr Henry Letheby reported the case of a pig dealer from Cupar Angus convicted at the Old Bailey on 2 December 1863 for sending bad meat to London. *Morning Post* 27 July 1864: 3d.

136 This account is taken from the *Edinburgh Evening Courant* 7 November 1864, 2ab and the *Scotsman* 7 November 1864: 6d-f. The latter is reproduced with only two small changes in the *Edinburgh Veterinary Review and Annals of Comparative Pathology* 6 (1864): 733–51.

> with having meat unfit for human food in his possession, and that is the theory on which the case goes.

Thomson dismissed Gamgee's evidence as vague assertions strongly made. After examining Robb and the Superintendent of the Slaughter-houses, Thomson called a procession of witnesses: John Swan; William Thyne, a flesher in Stockbridge; John Snow, chairman of the Fleshers Association; Dr Grainger Stewart, pathologist at the Royal Infirmary; Dr Alexander Wood; Professor Dick; and Professor Thomas Strangeways, of the Veterinary College. Despite their weight in numbers, the only significant evidence came from Stewart, Wood and, for different reasons, Dick. Stewart used a microscope and found nothing wrong with the meat. He did not believe a diagnosis of disease could be made visually from a hung carcase, and pronounced that there were 'very conflicting opinions as to whether the eating of meat affected with pleuro-pneumonia would be followed by disease; that that is not in my department'. Thomson may have regretted calling him. Wood, never less than well informed but with strong opinions, answered at length, mostly along the lines that deleterious effects from bad meat were unproven. He cited a recent case of Letheby's in London, where 60 people were poisoned (with 'one or two deaths') by sausages in which pleura was first implicated and then acquitted. He had also read up on work by Swiss veterinary surgeons. But he ended his main testimony in typical Wood style. With neither eye nor microscope had he found any fault with the meat; 'I will eat a beef-steak off that cow if I can get it'. Laughter from the packed courtroom. Repeating his point to the Magistrate that pleuro-pneumonia has to proceed a long way in a cow before the flesh is impaired he raised applause from the public benches. Then William Dick added his support: 'It presented no appearance of wetness. I think that, by examining the flesh itself, you can be perfectly satisfied of its soundness; and so satisfied was I of the healthiness of the carcase that I am ready to eat a steak of it just now. (Laughter and applause.)' Challenged as to whether he would give his friends that steak, Dick raised more laughter; 'they would lick their lips after it'.

Bailie Alexander's judgement four days later was to find Robb guilty but without penalty as this was the first case brought under the Act.[137] As the *Evening Courant* put it, announcing an interesting new principle in law: 'he trusted that the leniency shown would be a warning to others'.[138] Among his reasons for what may have been a cautious verdict (he seemed unaware that Robb had been convicted of a similar offence in June 1862)[139] was his belief

137 27 and 28 Vict., c. 84 (29 July 1864) which was the latest of a series of terminating Acts continuing 11 and 12 Vict., c. 107, *An Act to prevent, until the First Day of September One thousand eight hundred and fifty, and to the end of the then Session of Parliament, the spreading of contagious or infectious Disorders among Sheep, Cattle, and other Animals* 4 Sept 1848. Clause 3 made it an offence to expose diseased meat or offer it for sale.

138 *Edinburgh Evening Courant* 10 November 1864: 3a-d.

139 *Caledonian Mercury* 12 June 1862: 2b and e, *Scotsman* 12 June 1862: 2b.

in the testimony of Robert Wilson, the markets inspector whose qualities as a butcher and inspector had been endorsed by one of the defence witnesses (Thyne) as well as by Littlejohn, whose own testimony also convinced Bailie Alexander.

Asked whether an animal only slightly diseased was unfit for food Littlejohn answered carefully: 'As medical officer of health, I consider it is'. Thomson, rashly presenting the familiar public interest argument against aversion to risk, got a characteristic Littlejohn reply:

> Mr THOMSON – If all animals affected with pleura were destroyed, would not butcher meat rise very much in price?
> Dr LITTLEJOHN – Possibly, for a few weeks. (Laughter.)
> Mr THOMSON – What would become of breeders and feeders?
> Dr LITTLEJOHN – They would require to take more care.[140]

Hoping to undermine this medical precautionary approach, Thomson read the statements Littlejohn had sent to Mr Hall Maxwell, that he had never been able to trace any diseases caused by eating pleura beef. Littlejohn's reply strikes the modern reader as entirely convincing:

> I was merely answering all that Mr Maxwell wished to know. No case has come under my notice … It has not yet been ascertained that there are any, but I cannot account for many diseases in any other way … Poor people I know eat unsound meat, take unwell, and do not know how to state their complaints.[141]

The second trial involved one Peter Gardiner (or Gardner: reports vary) who was tried by Alexander on the same day as the verdict against Robb was given.[142] The case was very similar and again defended by Comrie Thomson before a crowded court. Littlejohn, 'whose opinions for long years past – since ever he was known, in fact – have never been gainsayed', as the Fiscal put it in his summing up, declared that 'a single glance at one of Mr Gardiner's animals' showed him all he needed to know.

> I did not consider it necessary to subject these animals to microscopic examination, as it would have been a mere case of scientific trifling. I think it is a piece of bravado for a man to say he would eat a steak off a diseased cow.[143]

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140 *Edinburgh Evening Courant* 7 November 1864: 2ab.

141 Ibid.

142 *Edinburgh Evening Courant* 9 November 1864: 2de and 10 November 1864: 3a-d.

143 *Edinburgh Veterinary Review and Annals of Comparative Pathology* 6 (1864), 742 (taken from *Scotsman* 9 November 1864: 6f).

He took the opportunity to challenge medical evidence he had heard the previous Saturday at Robb's trial and to restate his belief that the poor would be better off with a diet of oatmeal, milk and potatoes, than from impoverished beef such as Gardiner's. Gamgee, like Littlejohn, condemned the microscope as useless for assessing muscle in such a case. In a rare flash of humour he also declared himself 'agreeably disappointed' with Mr Wilson, an excellent inspector and 'far more useful that I thought he would be'. Gamgee had insisted that the inspectors should be scientists and follow continental practice, not butchers who were insiders.

The medical aspect of the evidence in the Gardiner case is revealing in many ways. Wood provided the defence with a diversionary discourse on pleuro-pneumonia, reading passages from David Livingstone on carbuncle in Africa. But his defence of the microscope gave a glimpse of his resentful attitude to Littlejohn:

> No scientific man would call it trifling to use the microscope to examine whether the flesh of animals was diseased. He had heard it called trifling by flippant people who are ignorant of the use of the microscope; but he had never heard a scientific man say so.[144]

Once questioned by the prosecution, Wood reverted to his characteristic style, reducing the gallery to laughter with his views on the nutritional properties of cats and dogs:

> I am sure I have had cats given to me in Paris. (Renewed laughter.) I have had hare-soup in which the meat had a most suspicious resemblance to cats. I don't like that, especially when you pay for the cats as hares.[145]

William Dick repeated his performance at the Robb case enjoying the support of his friends in the cattle trade. The examination of Dr Grainger Stewart, the pathologist, was no more satisfactory, even allowing for some imprecise shorthand on the part of reporters. A bizarre exchange about poisoning from meat and fever from bad smells contributed nothing but confusion, leaving Bailie Alexander to bring Thomson to order and remind the court precisely why Gardiner was being

144 Ibid., 6 (1864): 744. The relationship between Littlejohn and Wood (who, despite his denials and recognition of Littlejohn's abilities, was widely thought to be disappointed that he was not appointed as Medical Officer of Health) was a complex one. Suffice it to say that there were profound differences of character between them. Littlejohn's phrase 'scientific trifling' in his evidence clearly meant that in this case the microscope contributed nothing and was being paraded before the court merely to convey unwarranted scientific authority.

145 Ibid., 6 (1864): 744. The jibe at Paris, whose sanitary arrangements Littlejohn publicly praised, may not have been accidental.

tried. Thomson was also reprimanded for using John Ramsay to discredit the evidence of David Wilson, the markets inspector. Ramsay, who was working out his notice as Superintendent of the Slaughter-houses, had admitted at the Robb trial that he had wilfully deceived Wilson over the state of a carcase. Bailie Alexander refused to hear any further evidence from him. Gardiner received the same decision as Robb.

Much of what Littlejohn had to say about diseased meat in his *Report* of 1865 only makes sense in the light of these court cases. His analysis of the cow byres was already at the printers by November 1864. But the section on meat had yet to be written, probably soon after these trials. Some passages read like an explanation of his evidence and justification for his actions. His tone towards the meat trade is harder; the butcher's trade resembled 'in its exciting character the running of a blockade', with the public as the loser. Butchers and dairymen entered into an open bargain that was only closed if the 'blockade' was successfully negotiated: 'on all sides we have deception'.[146]

Littlejohn explained how it worked. A sick animal taken for slaughter could either be detected by the inspector and the butcher feign honest surprise and regret, or it could go undetected, leaving the butcher, if caught later, to hide behind the skilled inspector's judgement; 'The question, however, is, did he declare its condition when it was driven into the shambles?' Other butchers were more brazen.

> By a well-known class of Butchers, all such precautions are disregarded, and the most open fraud is committed. A cow too far gone to be safely submitted to official inspection is killed, carted secretly out of the city, dressed in some part of the county, and reconveyed into the city, either as an entire carcase, or piecemeal, and exposed for sale. The public often purchase, at ordinary market price of good butcher meat, what is not fit even for the pig-stye, but only to be boiled down and destroyed.

Despite the banishing of private slaughter-houses and prosecutions with heavy penalties, 'traffic in the meat of diseased animals was regularly organized, and the traffickers became well known to the authorities and to the trade generally'.

Littlejohn, clearly fired up but still maintaining the necessary polite conventions of a report by a public officer, was withering about his medical opponents in those cases, Alexander Wood in particular.

> But the traffic continued. It is … highly remunerative; and one successful run will cover the losses incurred in many unsuccessful ventures. When an offender of humble status was caught, he was left by the trade to his fate; but when an influential member of the craft was detected, a powerful defence was organized, and the case was conducted with the greatest possible ingenuity and determination, generally, I am happy to say, without success: the conduct of the

146 Littlejohn 1865: 57.

> officials who seized and condemned the suspected meat having generally been approved of by the Magistrates.

Here Littlejohn was clearly alluding to Robb and Gardiner, who were able to command legal support and guarantee a courtroom packed with their supporters. There are hints here of what Gamgee discovered, quiet agreement and compliance from many fleshers and dairymen, noisy belligerence from a few influential men who could bully them. How many other offences like the few that were prosecuted went undetected? Littlejohn observed that what was different about the recent prosecutions was the interest of the press and the medical profession. 'These recent cases have differed in no respect from those in which, for the last ten years, I have been in the habit of giving evidence, and in which I felt it to be my duty to corroborate the testimony of the market officials'. His annoyance at medical men with little experience of raw meat and who only ate the finest cuts in their own homes is clear from this telling passage:

> It has always, however, appeared to me that the testimony of medical men in such cases is of little weight, unless it can be shown that they have had special opportunities of acquiring a technical knowledge of the appearances presented by various specimens of butcher-meat from an experience more extensive than that gained by the inspection of cooked meat served up at their own tables. Medical knowledge cannot compete with the tact gained by the lengthened experience of the tradesman. As little can the microscope afford reliable aid in giving an opinion in such cases.[147]

Two further matters arising from the court cases required Littlejohn's attention and his comments are revealing. First he confronted, as he had done in court, the argument that regulation pushed up prices and deprived the poor of their meat. The very poor, he pointed out, rarely ate meat; the rest were entitled to protection from those who intermittently sold unsound meat at full price.

The tradesmen who appeared for the defence in the cases alluded to were careful to qualify their testimony by adding that

> while, in their opinion, the carcases in question were sound and wholesome, they would not dispose of them to their own customers, as a better class of meat was required by them. It would do for the poor; it was not suitable for the rich.[148]

Littlejohn, as a public officer of marked integrity, would not tolerate those who took advantage of his hard-up fellow citizens.

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147 Littlejohn 1865: 58. The comment about the use of microscopes simply meant that they could tell no more than close examination without them. They were not, of course, used to detect bacteria.

148 Ibid. 59.

Secondly, he explicitly called for stronger regulation so that court cases were less necessary and justified this in terms of a precautionary principle. As he had explained more than once, it was inconceivable that a diet of poor meat, habitually eaten, would not impair health, and it was his job to improve the people's health not just to reduce mortality. Risk could be reduced without damage to trade:

> It would be exceedingly difficult to settle any sanitary question, were we to suspend our action until it could be proved that the nuisance complained of was a cause of death–I mean such proof as would be satisfactory in a court of law … And so with regard to the traffic in diseased meat. Let it be so watched as greatly to diminish, if not entirely to stop it, and I am convinced that, like all other means tending to improve the health of the people, the good results will be apparent in a diminished mortality.[149]

In the light of what happened in food regulation in British cities over the subsequent 30 years that was a prescient conviction.

The Edinburgh Association of Fleshers, led by its chairman John Snow, met frequently to air their grievances about the inspectors and the medical officer. They received coverage but little sympathy from the press. Many fleshers were clearly honest tradesmen and resented the increasing interference from officials, especially if some of those officials were one-time butchers enjoying their considerable powers. Even those who knew full well that their trade was being disgraced by a few habitual miscreants would be swept along in a collective mood of complaint against inconsistent and seemingly arbitrary behaviour by inspectors, some undoubted corruption in the Slaughter-houses, and some bullying. Those who felt on those lines would have found comforting solidarity in the Association of Fleshers which claimed to represent 125 members.[150] Much of what was said at their regular meetings was muddled, self-contradictory and very often plain nonsense. Their opposition to the two Cattle Diseases and Importation Bills in 1864 on the grounds that they were the fruit of Gamgee's ideas and on their conviction that pleuro-pneumonia was not contagious was in every way foolish.[151] The fleshers also objected to the money spent on additional officials at the Slaughter-houses, not least on the grounds that their fees for the use of booths paid for the facility, its staff and maintenance, while the city took an annuity of £1,000 from it. As they saw it, the fleshers were taxed to the relief of other citizens. No wonder they objected to having no say in the appointment of new officials, a considerable proportion of whose salaries they would have to pay.[152]

149 Ibid. 60.

150 *Scotsman* 1 March 1865: 3e.

151 *Caledonian Mercury* 5 April 1864: 2e.

152 *Scotsman* 22 June 1864: 7d, *Caledonian Mercury* 8 September 1864: 3c.

In a series of meetings in February and March 1865, prompted by the trial of Alexander Potter, in what was a very marginal case, the Association of Fleshers was especially active in opposing the recent prosecutions. Potter had been convicted on the evidence of the market inspectors and Dr Littlejohn and was fined £10 (only half the maximum) by Bailie Hill. But the carcase had been passed in the Slaughter-houses and there was evidence that the inspectors had offered Potter a get-out compromise.[153] So offended were the fleshers by a case which seemed to them to show the danger they were all in, that at their next meeting they presented Potter with a cheque for £16. The case raised another oft repeated grievance, that, as Snow put it, the Magistrates were 'sitting as a judge on their own cause … Mr Linton becomes judge as well as prosecutor'. He also agreed with Comrie Thomson when he called for such cases to go before the Sheriffs and not the Magistrates. In the Police Court a flesher needs no witnesses or counsel; 'All he has to do is to put £20 in his pocket and ask how much is to pay'. They called for the dismissal of Wilson, the Inspector, though in their final resolution they agreed to tone down their language and sent the resolution to a committee.[154] The editor of the *Scotsman* was unimpressed. 'It was not easy to take part in 'the diseased meat question', if not quite because there was a good deal to be said on both sides', but had not the butchers got a practical butcher, with 17 testimonials from their own members, against the advice of the medical profession, who wanted a veterinary surgeon? And as for their legal counsel (though Comrie Thomson was not named), who advocated bringing in a Bill to have these cases tried in a higher court, the *Scotsman* was scathing. By all means have trained and paid judges, but why just meat cases? Besides, had not the case complained of been tried by a magistrate (Dr Alexander) who had taken the side of the fleshers against the advice of his own profession?[155] The Town Council refused the fleshers a meeting with the Market Committee and their case was taken up by John Swan with the Lord Advocate and the local M.P. requesting all cases go to the Sheriff's Court and that persistent offenders be jailed not fined. [156] The Lord Advocate was noncommittal and perhaps bemused by some of the details of the demands (the ticketing of bull beef for example). The butchers and dealers were, by requesting juries of the trade to decide disputed cases, without the input of the elected Council, wanting special treatment. One of their number advanced the thesis that the rise in the sale of diseased meat and the concomitant rise in the price of meat by two pence a pound was the result of stricter inspection at the Slaughter-houses, encouraging nervous cattle owners to kill beasts outside the city boundary.[157]

153 *Caledonian Mercury* 8 February 1865: 2d and 10 February 1865: 2e.

154 *Caledonian Mercury* 24 February 1865: 2fg.

155 *Scotsman* 27 February 1865: 2c.

156 *Edinburgh Evening Courant* 29 March 1865: 6a–c, *Scotsman* 11 July 1865: 2c.

157 *Scotsman* 11 July 1865: 2c. Regular market reports in the press show that in advertised prices it had risen one penny across all classes of beef, though some butchers undoubtedly charged higher prices and there were constant complaints in 1865 of the high

As the cattle plague devastated both dairies and the fat stock, as well as appealing to them and the general public for financial assistance, the fleshers and cowkeepers found new reasons to complain of the authorities. At a weekly meeting of the Edinburgh Dairymen's Mutual Protection Association, a long-established dairyman complained that the inspectors were going from byre to byre spreading disease. When Councillor Drybrough (presumably present as the chair of the Market Committee) pointed out that Professor Dick was the inspector, the startled complainant said he meant the municipal officers; Dick and his assistants had too much common sense to do that. In fact the city officers had instructions to disinfect themselves between visits.[158] The sense of a trade under siege is unmistakable in these reports. Again, a resolution was agreed to seek the protection of a more powerful body, in this case the Highland Society.

By October with rinderpest taking its heavy toll, the dairy herd in the city reached its nadir in mid-November at 408, and the Edinburgh cattle market all but ceased operations during the Spring (Figure 5.4). First the press and then the Town Council turned to the Medical Officer of Health, who issued detailed advice on the treatment of cattle.[159] Littlejohn was soon one of a high-powered committee of two surgeons, two physicians, three vets (including Dick), the Professor of Agriculture, and the chemist Lyon Playfair, who was on the Cattle Plague Commission.[160] The Edinburgh Cattle Plague Committee, appointed at the beginning of October 1865, produced an interim report on 11 October and submitted a full research report to the Cattle Plague Commission, which again placed the city as the major centre of urban cattle disease. The progress and effects of the cattle plague lie beyond this chapter but it revealed many of the same structural problems in the trade and in municipal administration already encountered, a fact that the vigilant press were quick to recognize. The *Caledonian Mercury*, noting that in less than 12 weeks the city had lost 1,058 (64 per cent) of its cows and that in the Water of Leith and West Port districts the losses were 87 and 72 per cent, made bold claims about the meat supply:

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price of meat, even though the immediate effect of *rinderpest* was to lower meat prices in the Edinburgh market: *First Report of the Commissioners Appointed to Inquire into … the Cattle Plague*, PP 1866 [3591] xxii.83. Qq. 1422–4.

158 *Scotsman* 21 September 1865: 3d.

159 *Edinburgh Evening Courant* 24 August 1865: 4ab, 18 Oct 1865: 4bc, and 31 October 1865: 8c.

160 Andrew Wood MD (chair), Professor William Dick VS, Henry Littlejohn MD, Professor Douglas Maclagan MD, Professor Lyon Playfair, Mr Romanis VS, Professor Sir James Simpson MD, Professor Thomas Stangeways VS, Professor David Wilson FRSE. *Edinburgh Evening Courant* 4 December 1865: 1ab. The first report of the Cattle Plague Commission was signed on 31 October 1865. Gamgee had given evidence on 16 October including his view that, despite its vigorous regime of sanatoriums and treatment, by treating in situ rather than slaughtering, the Edinburgh authorities had simply spread the disease: *First Report of the Commissioners Appointed to Inquire into … the Cattle Plague*, PP 1866 [3591] xxii.138. Q. 2883. Dick and Swan were examined together by the Commissioners the next day.

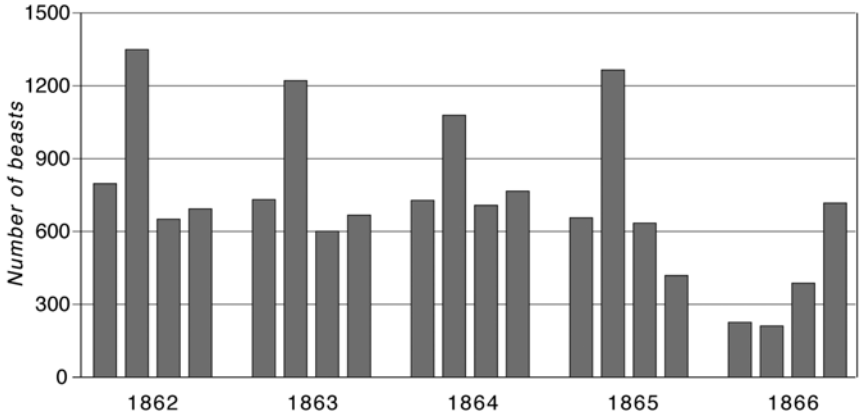

Figure 5.4 Sales of cattle at the Edinburgh livestock market, 1862–6; mean number of beasts presented for sale per week by quarter

Source: Market reports in the *Caledonian Mercury* 2 January 1862 to 27 December 1866

> The crisis is an unfortunate one, and is worse than it need be. The dread of beef is almost, if not altogether, unfounded. No respectable butcher, whether commonly patronized by the rich or the poor, will be willing to risk his reputation as a tradesman (to put it on no higher grounds) by dealing in unwholesome meat. The system of inspection, moreover, which appears now to be very efficient, makes the security of the public in the matter of butcher meat probably greater than it has been at any previous period.[161]

The *Evening Courant* was lofty:[162]

> Like cholera, it is deadliest when it first alights on the *nidus* of neglect – and the foul *nidus* we have prepared for it here by our neglect Dr Littlejohn a year ago described. … The city of Edinburgh has suffered in a heavier degree than any town, we believe, in the three kingdoms; and wherefor? Because our dairy system was beyond doubt the worst … It is our own fault that we did not profit from the warning given to us in October 1864, when our Officer of Health called on us to set our house in order … It cannot be questioned that if Dr Littlejohn's report had been timeously acted upon, we should not have required so violent a hand at the cleansing; and rinderpest, if it had tapped at our door, had in all probability found we were true to Nature's laws, and passed on.

161 *Caledonian Mercury* 27 October 1865: 2ab. Four weeks later it had dropped a further 191 making the loss in 16 weeks 75 per cent. *Edinburgh Evening Courant* 31 January 1866: 6d-f.

162 *Edinburgh Evening Courant* 18 October 1865: 4bc.

Despite all the knocks to his reputation, William Dick remained in the last year of his life in many eyes the pre-eminent authority. He monitored deaths from cattle plague daily and John Swan assured a select committee in June 1866 that he had every confidence in Edinburgh's defences against the importation of diseased animals.[163] Despite Privy Council orders against the movement of cattle, about 80 cattle entered the dairies in December and January. This, complained one of the Bailies, showed neglect by the inspectors. The complaint was dismissed by Councillor Ford; according to Professor Dick, cattle plague 'was entirely removed from Edinburgh'.[164]

The Aftermath

On 20 April 1889 the *Glasgow Herald* published the first of a series of 16 articles about the sale of diseased meat in Glasgow. It was headlined 'Shocking Disclosures'. The tenth article, 'Supervision and Inspection Defective', appeared on 7 May and contrasted the administrative defects in the city's system of meat inspection with superior practice in Edinburgh. Because Glasgow did not automatically condemn the whole carcase of a diseased animal, there was lack of clarity and much room for dispute. 'A test case is anxiously awaited, alike by the trade and the authorities', declared the *Herald*. They did not have to wait long. Next day two carcases were seized in the Moore Street Slaughter-houses and on 28 May a five-day trial of two cases began in the Justiciary Court. It was widely reported. On several grounds this prominent case provides a useful milestone from which to look back at Edinburgh 20 years earlier. But equally instructive for similar reasons is the campaign by the *Herald* which may have triggered the trial. The fourteenth article in their series, 'Supervision and Inspection in Edinburgh', was little less than an attempt to shame Glasgow: 'In their New Police Act the Edinburgh authorities possess a weapon all-powerful to strike at the various abuses to which in Glasgow we must submit as best we may'.[165]

Dr Littlejohn, who was to be a witness at the trial a few days later, was interviewed about his supervisory role in meat inspection. This, he explained, was made the more effective by the fact that he was also the Edinburgh police surgeon: 'Every policeman is a sanitary inspector … I have five hundred sanitary inspectors at my disposal … The only good thing your policemen do in Glasgow is watch the smoke'. He wanted the police even more involved in Edinburgh and strongly recommended this approach for Glasgow. Stringent meat inspection in the former,

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163 *Report from the Select Committee on Trade in Animals,* PP 1866 (427) xvi.631, Qq.5374–5.

164 *Edinburgh Evening Courant* 31 January 1866: 6d.

165 *Glasgow Herald* 20 April 1889: 4hi, 17 May 1889: 9d-f and 29 May 1889: 9e-i and 10a. The 'new' Act was Edinburgh Municipal and Police Act 1879: 42 and 43 Vict., c. 132 (21 July 1879) Sections 259–62 cover diseased meat.

claimed Littlejohn, had diverted diseased cattle to less vigilant towns, thereby spreading disease throughout Scotland. One lesson of over 20 years of increasing regulation of the meat trade was that it made life more difficult for criminals in the 'nefarious traffic' but it did not stop them exploiting a fast growing market. As for the town byres, they were, as Littlejohn was to express in strong terms at the trial, a foul nuisance only tolerated 'from the length of time it has been there, and because we do not like to interfere with vested interests'. Well aware, from long experience in Edinburgh, of the value of a vigorous and vigilant press, Littlejohn congratulated the *Glasgow Herald* and expressed his great hope that their articles would 'enlighten public opinion'.[166]

In cities where the poor were numerous enough to provide a ready market for sub-standard food, local authorities debated the issues that have been described in these pages and increasingly used the courts to stamp out the trade. Edinburgh was not unusual in having unsound meat in its markets and shops, nor in the measures it took to eradicate it. Substantial amounts of meat were being seized regularly by sanitary officers in Birmingham, Leeds, Liverpool, Glasgow, and especially London where Dr Henry Letheby was particularly active as the Medical Officer for the City, seizing on average 522 lb. (237 kg.) of unfit meat per working day.[167] At the Central Criminal Courts at least nine men received prison terms of between three and 12 months in the years 1862–4.[168] The situation in the London meat markets had been at the heart of the Gamgee brothers' campaign in 1857. In his first published letter to the Home Secretary, Sampson Gamgee described in precise detail his researches in the markets and Slaughter-houses of the capital in March of that year.[169]

The important lesson for urban authorities was that legislative powers and careful inspection were not enough to defeat the 'nefarious traffic'. As J. B. Russell, one of the greatest Victorian sanitarians, remarked, in a lecture in his presidential address to the Sanitary Association of Scotland in 1896,

> In the absence of a system of public Slaughter-houses with efficient inspection over the country, such as prevails in most European countries, the best method of dealing with this dead meat trade is by detective inspection by a staff of

166 *Glasgow Herald* 17 May 1889: 9d-f.

167 From 1 January 1861 to 31 August 1864. Of this 17 per cent was from animals dead on arrival at slaughter-houses, 59 per cent from diseased animals, and 24 per cent putrid meat. *Report from the Select Committee on Cattle Diseases Prevention, and Cattle &c. Importation Bills*, 195. PP 1864 (431) vii.211.

168 *Morning Post* 22 August 1862: 7d, 4 March 1863: 7c, 27 July 1864: 3d, 3 December 1863: 7d, 26 October 1864: 7d, 13 July 1864: 7d, *Daily News* 17 May 1862: 6f, 1 November 1862: 3b, 13 July 1864: 3d. The average term was 6.8 months and most received a £50 fine as well. One Huntingdonshire butcher with a wife and six dependent children received six months hard labour for a first offence, something inconceivable in the Scottish capital.

169 Joseph Sampson Gamgee 1857a: 5–14, and 1857b: 6–11.

> experienced officers, who will watch railway stations, wharves, carriers' quarters, &.; intercept lorries, suspicious looking butchers' carts, &c., on the street; visit shops where low-class meat is sold; and who can be sent to the country to interview the owner, see the butcher who slaughtered the animal, the veterinary surgeon who attended it, and otherwise get up to the best advantage all the information necessary for a prosecution if the circumstances require it.

Russell then proceeded to recount experiences which his audience might find 'entertaining and instructive'.[170] Russell might have been describing precisely the method of policing the meat trade in Edinburgh in the 1860s, with one important difference. Edinburgh did have a public Slaughter-house modelled on the French system. It did not, however, absolve the medical officer and inspectors from observant policing of beasts before they reached the Slaughter-house, nor did it guarantee the quality of inspection during slaughter. Indeed there was circumstantial evidence of collusion between slaughtermen and fleshers to pass unfit meat through the system.

The politicians, parliamentary enquiries and the interest of the newspapers in the cattle trade and the diseased meat question waxed and waned but, for the medical officers and their inspectors, it was a constant and extending struggle to regulate the trade. Littlejohn, like his colleague Russell in Glasgow, in common with most other city medical officers, not only saw meat and milk as major responsibilities, but also used their high status to extend and tighten regulation by informing parliamentary enquiries and thereby influencing the legislature. Littlejohn was a witness for the Departmental Committee on Pleuro-Pneumonia and Tuberculosis in 1888, an expert witness in the 1889 Glasgow prosecution, and a witness for the Royal Commission on food derived from tuberculous animals in 1896.[171] Whilst his extensive evidence to these inquests (answering over 150 questions at each of the parliamentary enquiries) reveals a man embracing the advancing bacteriological science in a flexible and pragmatic way, it also shows a realistic public officer fully aware that without constant vigilance cattle dealers, cowfeeders and fleshers would tend always to put private profit before the public good. In this powerful conviction Littlejohn of Edinburgh and Russell of Glasgow were very close indeed. By the 1890s much regulatory progress had been made. It may be possible, however, to detect a significant change of attitude between the Littlejohn who in the 1860s did not want 'to hamper with teasing restrictions a branch of industry which contributes so much to the general comfort'[172] and the Littlejohn who must have thought that after 30 years the 'nefarious traffic' would

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170 Chalmers 1905: 602–3.

171 PP 1888 [C.5461-I] xxxii.536–42, Qq. 7599–7751, *Public Health* 2 (1889–90) 78 and *Glasgow Herald* 29 May 1889, 9i–10a, PP 1896 [C.7992] xlvi.88–98. In Glasgow in May 1889 Littlejohn was, as he so frequently was over more than 30 years, cross-examined by John Comrie Thomson for the defence.

172 Littlejohn 1865: 50.

have learned better; as he remarked to the Royal Commission on 10 December 1896: 'The condition of the cow-houses in Edinburgh and in the country generally is simply disgraceful'.[173]

Concluding Remarks

Public health reformers in Edinburgh were well informed about sanitary developments in other cities and acutely conscious of unfavourable comparisons, and yet the public rhetoric about the meat question was conducted with very little reference to other places. The shocked reactions of the trade to claims that so many of its livestock were diseased were either extraordinarily naive or simply false. The scandalous state of Smithfield and the other London markets was widely publicised in the late 1840s and in 1856, the year before Gamgee began his campaign, the Select Committee on the Adulteration of Food published evidence from London and Manchester of circumstances and practices much the same as those exposed in Edinburgh.[174]

So why such a fuss in Edinburgh? It was a centre of medical and veterinary education as well as having arguably the most concentrated legal community in Britain, all of which amounted to a culture that would find a reputation as a city that allowed its citizens to buy unsound meat as offensive as the meat itself. The spark was Gamgee, a clever and dogged man who could not easily be shaken off and, moreover, an upstart outsider who dared to oppose the hitherto unchallenged William Dick. These were the particular local circumstances that ignited the question in Edinburgh. It was kept alive by the coincidence of a major parliamentary enquiry, in which Edinburgh featured more than any other city, and prominent prosecutions under a new Medical Officer of Health who also happened to be a star forensic witness in the Scottish courts. Finally, the issue was kept burning by the arrival of a devastating epidemic of cattle plague. By a final

173 *Report of the Royal Commission appointed to enquire into the effect of food derived from tuberculous animals on human health*, PP 1896 [C.7992] Q.1470. Littlejohn had bent the law somewhat by condemning tuberculous meat under powers designed for meat with pleura. His justification to the Commission shows his mastery in the witness box at its creative best. Q.1436 et seq.

174 In an attack on the trade [Horne] (1850a) drew heavily on George Cornewall Lewis' enquiry into Smithfield; *Report of the Commissioners appointed to make inquiries relating to the Smithfield Market and the markets in the City of London for the sale of meat,* PP 1850 [1217] xxxi.355. See also *Report from the Select Committee on Adulteration of Food, &c.,* PP 1856 (379) viii.1. For diseased meat see evidence of John Challice MD, physician in Bermondsey (Qq. 1446–66) and Reginald John Richardson, Inspector for the Newton Heath Local Board of Health, (Qq. 2153–96). The House of Commons debated Smithfield Market and the quality of dead meat on 17 July 1849: *Hansard's Parliamentary Debates* third series 107, cols 492–514. In more general terms it has been estimated that over a fifth of British livestock was diseased in one form or another (Perren 1978: 60).

coincidence of timing, the two leaders of the powerful conservative cattle interest died in 1866 as the rinderpest was completing its cull in Edinburgh; William Dick in April and John Hall Maxwell in August.

What has been described here occupied only a decade. It has charted cattle and meat production as an aspect of urban history in one city, or rather a place memorably characterized by Robert Louis Stevenson as 'not so much a small city as the largest of small towns'.[175] All the actors in the drama – doctors, vets, politicians, public officials, cattle dealers, dairymen, newspaper men, and their constant readers – all knew each other well enough, and the local geography very well indeed. The narrative approach of this chapter is offered as an alternative to the sort of medical and veterinary history that tends to downplay (even ignore) the local and personal contexts and write the history of what other historians have said or draw evidence from the detached eminence of parliamentary papers. A century and a half of subsequent development in the various stages from livestock breeding to domestic kitchens, especially the application of science and technology in varying degrees, provides ample perspective on the meat question in mid-Victorian Edinburgh.

Judging the parties concerned within their own circumstances, not just with hindsight, the most obvious circumstance was the lack of any knowledge of microscopic pathogens. The vets, trapped in the narrow paradigm of contagion versus anti-contagion, were at odds over the epidemiology of cattle disease. The tradesmen – dealers, butchers and dairykeepers – made their living through entrenched practices where habit, experience and self-interest were largely unmolested by science and regulation beyond centuries-old laws of fair dealing. The dilatory and ineffectual local regulatory body, though full of able men of good intentions, was a victim of its own factious traditions, which raised municipal squabbling to an art form. Its public servants – police officers, inspectors, managers and, in this context most particularly, its medical officer – had to apply the law and tread a narrow path between vested interests and a baffled and sometimes alarmed citizenry. In Littlejohn's case the law was edged along a bit but his advice was more often sought than applied.

Out of this drama slowly emerged an acceptance of a food regulatory mentality, run by trained (increasingly, scientifically trained) officials under the Medical Officer of Health. By the end of the nineteenth century the health departments of British cities were inspecting markets and shops, milkhouses, dairies and slaughter-houses with a rigour that would have been censured in the 1860s, seizing and destroying large quantities of perishable foods of all kinds.[176] As Councillor

175 Stevenson 1879: 7.

176 In 1891, when the number of cattle within the city boundary was about 15,000 and the diseased meat question was again exercising the Health Committee and the newspapers, the Edinburgh Health Department condemned 372,740 lb. (169,071 kg.) of meat, mostly beef which was destroyed at a rate of 19.5 lb. (8.8 kg.) per head of population. In 1901 the Liverpool Health Department condemned 296,080 lb. (134,299 kg.) of meat,

Ford – a man with an admirable record in sanitary administration but also a retailer for 40 years – had put it, 'The idea of sending a man to look after respectable traders in such articles as poultry, butter, meat, or ham was a perfect farce … I would just as soon think of sending a man to inspect the breweries of the city'.[177]

Edinburgh in the 1860s was hardly Upton Sinclair's Chicago and the eating habits of its population bore little resemblance to the fast food culture that has prompted well-founded concerns about the effects of cattle farming and heavy meat consumption on human health and the natural environment. Nevertheless, the average Scot ate more meat than most Europeans and in Edinburgh, with its large middle class, it is likely that meat consumption per head was among the highest in Europe.[178] The meat question in Edinburgh is an important part of the pre-history of the cost of the demand for meat in cities. Moreover, whereas in our own deracinated food culture these matters are hidden from view (the fashionable term 'sanitized' seems apt in this case), Victorians very often shared their cities with the beasts that provided their food, that walked and fouled their streets, and that left behind in the Slaughter-houses a huge amount of dead tissue. The volume of Slaughter-house waste exceeded many times the human remains which had to be accommodated in city cemeteries, even allowing for the sale of hides, horn, hoof, blood and other products for recycling. In sanitary terms animals in cities were a substantial and complex environmental problem. They deserve closer attention from public health historians than they have received.

Appendix 5a: The first shot in John Gamgee's campaign

UNWHOLESOME MEAT
TO THE EDITOR OF THE SCOTSMAN
21 Dublin Street, 25 February, 1857.

Sir,–I trust you will allow me space in your columns for an expression of opinion, and a brief exposition of facts relating to a most important subject – the unwholesome meat that is daily partaken of by the Edinburgh people.

Whence may bad meat find its way into the butcher's shop or public meat market? 1st, From the dairies in Edinburgh; 2d, From neighbouring or distant farms. It is an acknowledged fact, that may be further substantiated by evidence at once conclusive and readily obtained, that dead or dying animals are disposed

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overwhelmingly beef which was destroyed at a rate of 5.1 lb. (8.8 kg.) per head. The great bulk of that meat was destroyed before it reached the retail trade. *Scotsman* 25 September 1891: 6c, 25 November 1891: 6h and 25 November 1892: 6e; *Report on the Health of the City of Liverpool during 1901 by the Medical Officer of Health* (Liverpool 1902): 135.

177 *Caledonian Mercury* 12 July 1864: 3b.

178 It seems likely that per capita consumption exceeded the mean UK weight in carcase equivalents for the late 1990s excluding poultry meat, though the data are hazardous and historically sparse. Wilson 1851, vol. 3: 393.

of to butchers, and thoughts are rarely entertained of burying cattle, sheep, or swine, if it be possible to render them marketable. The mortality amongst these animals is always great, and in town dairies the lowest average is about 30 per cent. annually, so that the number of sick animals to be cut up by the butcher is constantly considerable.

How can bad meat be disposed of? The cows that die in Edinburgh were for some considerable time (probably ever since meat inspectors have been appointed) been bought up and taken to Corstorphine, dressed and brought in for sale, completely eluding detection. Professor Dick heard of this, and, with his usual promptitude, saw the matter rectified; meat inspectors and police men were set on the watch, and the individual who conveyed the carcases into town was prosecuted. Since then it appears the trade has taken a turn; the cattle are still taken out to Corstorphine, but from there on to Glasgow.

All the dead or dying cows are not and were never taken to Corstorphine or other such place; for in case of disease or death amongst these animals, the owner calls in an Inspector of Markets, and inquires whether, in the opinion of such inspector, the disease be such as to render the meat unwholesome, or whether the carcase may be marketable. The animals decidedly unfit are mostly taken to the Zoological Gardens; or sent out to Corstorphine, or got rid of some other way; those which the Inspector of Markets looks upon as wholesome, are retailed, unless by some accident they are subjected for examination to a jury of fleshers. If the jury of fleshers decide that the meat is unwholesome, the owner of the diseased beast loses the carcase, but he is not fined, as he has acted in accordance with the advice of a meat-inspector.

The animals that are sent to Edinburgh from a distance by train or other conveyance enter the town by any station or road, and can only be detected by the inspector at such station or road, or in the meat market. Many of the carcases decidedly bad looking are salted even by farmers themselves, but are often so bad as not to resist decomposition for any length of time in the Salting tub.

Are means adequate to the extent and importance of the evil employed for its suppression? According to the Edinburgh Police Act, steps should be taken 'that no carcase or part of the carcase, of any animal which may appear to have died of, or been killed in, consequence of disease, is dressed, prepared, or kept in markets and slaughter-houses.' And the law applies to every article of food exposed for sale in markets, shops, stalls, or other places. To enforce this law two inspectors are appointed – one in the dead meat market and the other for the slaughter-houses; both act under the direct guidance of a committee of gentlemen of the Council, and the first is likewise under the influence of the Superintendent of Police. I know both the inspectors, have been able to observe, the discharge their respective duties to the best of their ability. Both inspectors were originally fleshers, and their competency to undertake the recognition of unwholesome meat is based on their experience as fleshers. Now is this sufficient? I unhesitatingly say no! – 1st, It would not be difficult to prove that as fleshers they are rather disqualified than rendered fit for the office of inspectors, being accustomed to certain practices peculiar to each trade, which almost precludes them from having a strict and unprejudiced notion of what is

really lawful and justifiable, and what is not; 2d, All those conscious of the difficulty attendant on the performance of *post mortem* examinations and the recognition of morbid lesions can only give evidence to the effect that a scientific man can alone undertake the task of determining the nature and importance of appearances in the dead bodies of diseased animals. I need insist but little on this point, but as proof I may mention having observed the extravasations of blood and acute phlegmons occurring in the malignant 'black quarter' of cattle, have been looked upon as simple bruises, and the carcases passed as wholesome, the animals being young and fat; and the tubercules characteristic of phthisis passed over as unimportant, because of common occurrence, and, provided the beef was marketable – viz., fat enough – the diseased parts were cut away and the carcases sold.

It is certain that the inspector in the dead meat market has it in his power to be of essential service, especially as persons find it best to resort to him for an opinion than risk the being caught and prosecuted; but, on his own testimony, I can assert that supposing he had the requisite knowledge to recognise disease, he could never see all the bad meat that enters Edinburgh, unless it were a rule to ensure that all meat be first subjected to inspection before it can be exposed for sale, and this might easily be done if persons were prosecuted for not subjecting their meat to be examined at one or other of certain stations.

Any one who has formed any just notion of the evil I am striving to expose must shudder at hearing that during the last five years all the cases brought under notice at the Police Court in Edinburgh average but 12 per annum, and half these refer to rotten cheese, fish, poultry, &c., and not to diseased meat. The nose of common policemen and fleshers is all that may be required to detect putrefaction, but as morbid signs are recognised alone by men accustomed to the study of disease, the startling fact just alluded to is readily explained.

To eradicate the evil it is essential that talent and the power of a wise administration be brought to bear, and the two combined will do for Edinburgh what has been done for hundreds of towns on the continent of Europe; and the consumption of unwholesome meat will be reduced to its minimum.

I am well aware that from some few butchers in Edinburgh there is little danger of obtaining bad meat, because they only buy cattle in the best condition, and respecting which there can scarcely be a doubt. I have, however, no hesitation in saying that they too are sometimes unconsciously selling what may prove more or less injurious to the consumers, and if any butcher buys cut-up carcases he may get good-looking beef, but he cannot possibly be certain as to what he hangs on his hooks.

Apologising for the length of this epistle, but firmly believing that it is my duty to speak openly and without reserve on a matter so much affecting the public good, I am, &c.

JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

Source: *Scotsman* 28 February 1857 3f and *Daily Scotsman* 2 March 1857 4d.

Appendix 5b: The *Caledonian Mercury*'s view of the diseased meat question

THE DISEASED MEAT QUESTION has, it may be affirmed, run its course. It has been a 'nine days' wonder,' and the chances are that it will cease to be talked of in nine days more. Whatever the motive that prompted the publication of statistics which are now seen to be not correct, and whatever the object designed to be served by casting suspicion on classes of traders – cattle salesmen, fleshers, and dairymen – who have heretofore been, as a rule in their business transactions, beyond reproach; one thing is clear, the public have been excited without sufficient reason, and alarmed without anything like adequate cause. The abstract of the Slaughter-Houses returns prepared by Messrs Swan and Sons, and supported by Mr Thomas Wright, conclusively demonstrate that much more than enough has been said on the subject. Professor Gamgee's figures, unexplained, were alarming, not the less so that he seemed to believe in them, and that he appeared to feel as if he were under a pressing public duty to make them known; they have been stripped, however, of much, if not nearly all, of their terrors by the simple matter-of-fact handling to which they have been subjected by the gentlemen whom we have named. The formidable tables constructed with so much care, and calculated, had they been explicitly credited, to make the Edinburgh public question whether their fleshers were not wholesale vendors of diseased beef and mutton, and their dairymen confederated conspirators against the lives of their best customers in the distribution of liquid poisons, have been shorn of their desperate proportions, and made to appear comparatively harmless indeed. Somehow or other the tables were not fully credited. The people could not be satisfied that they were either labouring under disease, or being impaired in health by their latest sirloins of beef or shoulders of lamb; they had an impression that their fleshers were desirous of keeping customers by giving them a good article rather than losing them by presenting them with a bad one; they had, in other words, a faint idea that every trader knows it to be to his interest and profit to win and retain confidence, and that families, as a rule, are quite as competent to those who supply them to form an accurate opinion as to the quality of the articles they are accustomed to receive; hence, as we have said, the statistics so suggestive of widespread *braxy* and universal *pleuro-pneumonia* made no difference to the ordinary consumpt of flesh-meat in Edinburgh; and now that it has been demonstrated that on an average of three years the whole diseased, or rather 'apparently diseased' cattle, that have passed out of the slaughter-houses of the city amounts to less than 3 per cent. of the total number killed; of sheep, only 1 in every 1900; and of calves, only 1 in every 2055, the inhabitants breathe freely, and congratulate each other that there is still a chance of their continuing, with their customary fare, in 'the land of the living and place of hope.'

Without imputing to Professor Gamgee, who originated the discussion, any improper motive in exciting alarm – without insinuating that he had any selfish element mingling with his regard for public health and the wellbeing of his [col. d] fellow-citizens in compiling and publishing statistics calculated to do so much

harm to a respectable and honourable class of men, we are certain we are conveying the feeling of the largest proportion of the inhabitants when we protest against all sensational efforts to direct attention to that which is admittedly wrong, and when, especially, we deprecate the publication of documents so constructed as to create a decidedly unfair, if not an unquestionably false, impression in the public mind. Without treading on unsafe ground, or exciting undue apprehension, Professor Gamgee had enough in the way of fact as to the supervision of our slaughter-houses, and as to the number of doubtful, if not positively diseased, animals passing into and out of them to justify him in calling the attention of the authorities to the subject, and of stimulating them to a desired reform. He had not enough, however, to support his bold assertions and fallacious figures; he had not half enough to satisfy intelligent thinkers that he was at liberty to make the sweeping statements as to public officials, and to pronounce the severe strictures upon professional and other individuals in which he has so largely indulged; hence his 'blunder,' which Talleyrand describes as worse than a crime, and hence the peculiar awkwardness o [sic] the position in which he now stands both as respects his profession and the classes it is his interest to conciliate and serve. Good as well as evil will no doubt be associated with his exposures. It is abundantly clear by the discussion which took place on Treasurer Curror's motions at last meeting of Council that there is something radically wrong in the inspection both at the slaughter-houses and in the markets. Books cooked and doctored in the style described by Treasurer Curror, and facts occurring such as those stated by Bailie Cassels and Councillor Bryson, need explanation. It may be, so far as the former are concerned, that circumstances are not just so bad as they look – that the erasures of sentences of condemnation on particular animals, and the substitution of expressions of approval in reference to the same animals, are to accounted for on other grounds than extreme carelessness or assumed complicity in guilt; at all events, there need be no doubt of this, that if public servants are paid for discharging their duty honestly and faithfully, they ought to be able to satisfy their employers that they are so discharging it, or else be sent adrift. There is no reason why the city should pay, in the name of inspectors, persons who either do not know their duty, or do not care to perform it. There are too many of such living at the expense of the ratepaying public at present; and if the inspector of the shambles and the inspector of the markets are among the number, the sooner they are disposed of the better for all interests concerned.

Source: *Caledonian Mercury* 11 September 1863, 2cd.

Appendix 5c: The cattle population of Edinburgh in 1864

In his evidence to the Select Committee on the Cattle Diseases and Cattle Important Bills in 1864, John Hall Maxwell presented a list of the dairymen in Edinburgh who had signed a statement to the effect that they had not provided informations (at least, not willingly) to John Gamgee for his investigation into the state of their animals. The list gives the names and addresses of 95 men and three women, and

the number of cows in each dairy for the year ending 1 July 1862, a total of 1,910. Of these 90, with 1,683 cows, were within the municipal boundary.

In the appendix to his *Report in the Sanitary Condition of the City of Edinburgh* (1865) H. D. Littlejohn listed the 171 dairies he had visited in the summer of 1864 arranged in the nineteen sanitary districts he had established for the city. Each dairy is identified by the surname of the cowfeeder and an address which is often less precise than those given by Maxwell. The number of cows, totalling 2,085, is given for each dairy.

These lists are the only surviving record of the number and distribution of cattle in the city and they are very hard to reconcile. Only 61 dairies can be linked to both lists, with 1,273 cattle in 1861–2 and 1,128 in mid-1864. There is exact or close agreement as to the capacity of cowsheds in many cases. However, 110 byres with 957 cattle appear on Littlejohn's list but not on Maxwell's; 29 byres with 410 cows are on Maxwell's but omitted by Littlejohn. Given the purpose for which Maxwell drew up his list, to discredit Gamgee's findings, and the circumstantial evidence for arm-twisting and even dishonesty in presenting this evidence, the suspicion that Maxwell's list was defective cannot be avoided. On the other hand he listed seven dairies, with 121 cattle, in the Northern New Town (Sanitary District 2) that Dr Littlejohn, who had lived his whole life there and who knew it intimately, had apparently missed. Four of those cowkeepers (to use the name under which they are listed) appear in the Post-Office Directory for 1864–5 and in subsequent years. What is certainly true, is that the cowkeepers who were presented as hostile to Gamgee (but not it might seem the Medical Officer) did not by any means represent the whole trade, possibly not even the majority.

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Chapter 6

Undesirable Nature: Animals, Resources and Urban Nuisance in Nineteenth-Century Paris

Sabine Barles

Introduction

This study is based on a triple realization. First, is the considerable importance of domestic animals[1] in urban life during the nineteenth century, noted in particular by previous research on urban metabolism; second, is the inability at the present time for urban planners and developers to think of animals in cities,[2] a subject of increasing concern for local communities; finally, is the renewal in thinking about animals that is beyond the scope of this study but is nevertheless acknowledged. It is thus a matter of answering three questions that, to our knowledge, have never been directly addressed, certainly in France:[3] how have the functions of domestic animals changed over the course of the nineteenth century and, in particular, how did these animals become natural and urban resources? How were animals perceived and incorporated into cities? Finally, what are the conditions of their real and/or perceived disappearance? To this end, we have used the familiar ground of Paris as a case study and made use of many statistical sources to measure the 'animal weight'; industrial, technical and scientific statistics to evaluate the particular use of animals as resources; hygienic and urban statistics to understand how animals were perceived, specifically by those who controlled the management of urban spaces at that time.

1 Other animals (rodents, birds, insects, etc.), as well as zoo and pet shop animals although not considered here, could also be added to this list.

2 See, for instance, Blanc 2000: 189–208.

3 See Joel Tarr's pioneering article: The horse, polluter of the city, a revised version of which is published in idem. 1996. Also relevant are Tarr and McShane 2007, and the special issue of *Cahiers d'Histoire* (1997: 3/4) about animals, particularly the papers by Zeller, Faure, and Garnier. There is a literature about horses in Paris, such as Bouchet 1993, Jiméno and Massounie 2006. On slaughter-houses, see Philipp 2004, and Brantz 2003. More generally, see Baratay 2008.

How Many?

It is not easy quantitatively to assess the animal presence in nineteenth-century Paris. We will limit ourselves to domestic animals, which by no means represent all urban animality but do give an indication of its importance. The list is already extensive, grouping together: 'bees, alpacas, donkeys, rams, oxen, billy goats, ewes, Italian buffaloes, ducks, camels, horses, she-goats, dogs, pigs, roosters, dromedaries, turkeys, elephants, pheasants, llamas, rabbits, sheep, he-mules, geese, peacocks, pigeons, guinea-fowls, hens, leeches, bulls, cows, calves, silkworms, vicunas, zebras'.[4] The absence of cats can be noted, as they 'can only be considered domestic animals when they stay on their master's property. When they wander on public roads or neighbouring properties, it is permitted to destroy them, especially if they are caught defecating on the property of others: in such situations, the person who destroys the cat is only exercising the right of self-defence and commits no crime'.[5] Cats, being partially useful animals, will nevertheless be briefly considered here; however, exotic animals – zebras, etc., – and animals that are rarely urban – silk worms, etc., – will not.

Statistical sources for animals living in urban centres are very deficient. During the first decades of the nineteenth century, the horse population of Paris was not directly known. Rather, its number was estimated from their average intake of fodder and from oats and hay imports, assumed to be entirely intended for horses, provided by the octroi statistics.[6] This method of calculation, agreed upon at the time, was relatively reliable until 1850, and then lost its reliability when rations began to diversify. However, following the war of 1870, the census of horses over five years of age became obligatory and provides access to relatively precise data. The growing importance of the horse population during the nineteenth century, based on absolute values or relative to the number of inhabitants, and its rapid decline at the beginning of the next century is shown in Figure 6.1.

Cattle were never the object of a systematic census, but it is known that a certain number lived in the capital, cows in particular, to ensure milk production. In 1823, there were 326 cattle feeders[7] whereas, 20 years later, the cow population was estimated at 2,300.[8] In 1873, Toussaint Loua reported that there were 1,895 cattle, of which 1,842 were cows.[9] 25 years later, *La Nature* reported a figure of 5,700 dairy cows in Paris.[10]

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4 Ravon and Collet-Corbinière 1895, vol. 1: 133–4.

5 Ibid., vol. 1: 134.

6 It was estimated that a horse consumed four bundles of hay (nearly 7 kg. or 15.4 lb.) and 15 litres of oats per day. *Recherches statistiques sur la Ville de Paris et le département de la Seine*, vol. 2, Paris, 1823: tableau 89.

7 *Recherches*, vol. 2, op. cit.: tableau 81.

8 Husson 1856: 275.

9 Loua 1873: 78.

10 Le lait à Paris, *La Nature*, 2e sem. 1897: 30.

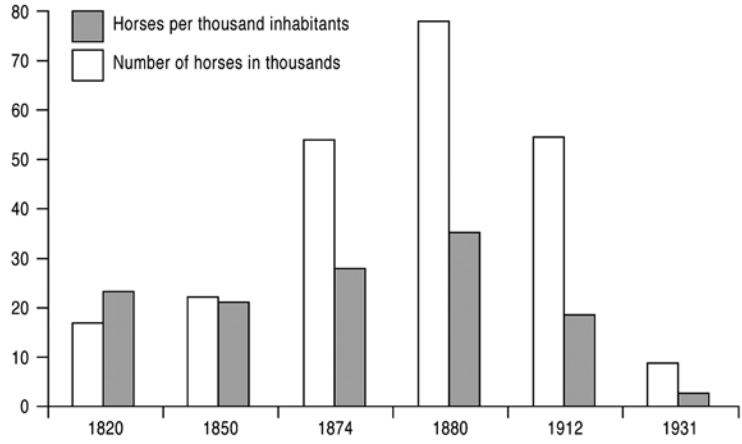

Figure 6.1 Horses stabled in Paris, 1820–1931

Source: *Recherche statistiques sur la ville de Paris et le département de la Seine, Paris, 1821–1860*. 6 vol; *Annuaire statistique de la ville de Paris et du département de la Seine (années 1880, 1912 et 1931)*, Paris 1881, 1915, 1933

Sheep and goats were practically non-existent – 97 and 524 respectively in 1872, again according to Loua[11] – whereas the census of farmyard animals carried out the same year reported 64,719 head of poultry, mostly chicken and hens (48,113) and pigeons (18,660), with turkeys, geese and ducks making up the rest. There were also 129 bee hives.

In the case of dogs and cats, in 1819 Benoiston de Châteauneuf cited one dog for every 16 inhabitants and one cat for every 30 inhabitants, numbers he took from Malouin in his book *Art du boulanger*.[12] Nevertheless, the taxation of dogs from 1856 onwards allowed for a better, albeit suspect, knowledge of the canine population. For example, there were 37,127 dogs in 1872, that is to say one dog per 50 inhabitants. Tax fraud was undoubtedly a factor in these low numbers. In the 1880s, the hygienist Jules Arnould threw out the figure of two million dogs on a national scale.[13]

Animals passing through the city, indeed in most cases trespassing, added to the number of resident animals. These included not only animals that provided for the transport of people and material, which are discussed in more detail later in this chapter, but also livestock that was brought into the city for slaughter, and poultry and other small animals sold at markets. 'Horses brought from neighbouring regions to be slaughtered because of their advanced age or their infirmities' can also be

11 Loua 1873: 78.

12 Benoiston De Châteauneuf 1820–1821, vol. 1: 35, Malouin, 1767.

13 Arnould 1889: 1357.

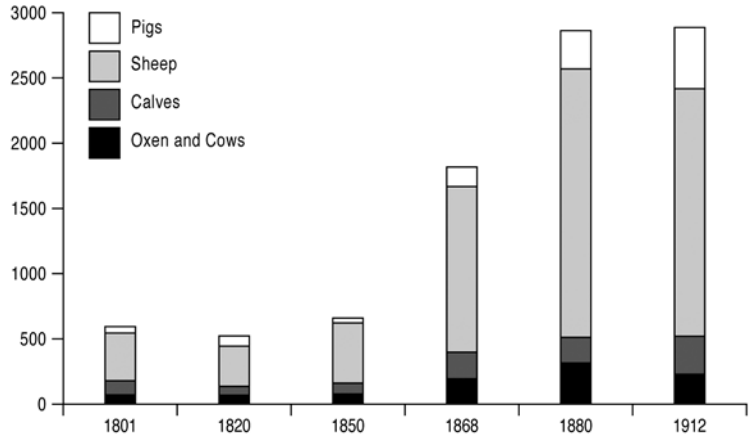

Figure 6.2 Domestic livestock entering Paris, 1801–1912 (thousands of head)

Source: *Recherche statistiques sur la ville de Paris et le département de la Seine, Paris, 1821–1860*. 6 vol; *Annuaire statistique de la ville de Paris et du département de la Seine (années 1880 et 1912)*, Paris 1881, 1915

added to this list.[14] These horses were not initially intended for human consumption, but for rendering and about 26 were slaughtered per day in the 1820s.[15]

The movement of domestic livestock was particularly heavy and important because on average, in the nineteenth century, a Parisian consumed more meat than any other French person: in 1862, 67 kg. (148 lb.) per inhabitant annually, compared to 50 kg. (110 lb.) in other cities and 18.5 kg. (41 lb.) in rural areas.[16] Domestic livestock, purchased at the Sceaux or Poissy markets, crossed the capital in convoys that could not exceed 40 animals, led at a walking pace by two herdsmen over 18 years of age and two dogs.[17] During the first half of the nineteenth century, 12 to 15 convoys of cattle crossed Paris every day, as well as ten to 16 convoys of sheep. From 1850 onwards, domestic livestock were transported both overland and by rail; but these animals still had to exit the train stations in order to serve the markets and slaughter-houses. Likewise, although the opening of the La Villette livestock market in 1867 did allow for the centralization of domestic livestock, it did not result in an end to the movement of livestock since the animals were also intended for the Villejuif and Grenelle slaughter-houses: 46 convoys of 25 to 40 oxen and cows per day in 1880, accompanied by one or two dogs. The same year, there were 70 daily convoys

14 Recherches, op. cit., vol. 2: tableau 89.
15 Ibid.
16 De Foville 1890: 154–5.
17 Police edict of 21 Nivôse year IX (11 January, 1803).

Table 6.1 Horse rendering yields, Paris, beginning of the nineteenth century

Horse rendered with care	Average condition (kg.)	Good condition (kg.)	Use
Hair	0.1	0.22	Fabric (very few because hair was not long enough)
Skin	34	37	Tanneries
Blood	18.5	20.8	Potential use: refining, animal feed, fertilizer
Muscle Meat	164	203	Food (officially for animals, but why not legally for humans)
Offal (brains, tongue, heart, etc.)	36	39	Useless except for small intestines (cords)
Tendons	2	2.1	'After skin and fat, the most sought after parts': glue
Fat	4	31.5	Oil (enamellers, pearl and glass makers)
Feet			Glue
Shoes and nails	0.45	1.8	Scrap iron or iron
Horn			Combs of little value often defective: manufacturers of sal ammoniac and of Prussian blue
Bones	46	48.5	Ammonia, gelatine, fertilizer, big bones: walls
(Maggots)			Fishing, hen feed
Total	306	386	

Adapted from: Parent-Duchâtelet 1832, 60–91, 151

of 100 sheep and one dog. The movement of livestock was so important that it was still regulated in 1897.[18] Figure 6.2 gives a general idea of this particular animal presence.

Producing Animals

The animal presence was not fortuitous: Paris needed its animals, not only as a source of food, but also because some of them were essential for transport. The

18 Police edict of August 31, 1897: art. 420–21.

contribution of animals to food was trivial,[19] but their role in supplying raw materials and in supporting agriculture and industry was very important.[20]

Animal by-products were aggressively recovered – much more so than in the previous century – bones for fancy goods, glue fabrication, obtaining animal charcoal by means of calcination which helped refine sugar whose consumption was on the rise in the nineteenth century, phosphorus that made possible the manufacturing of the first-ever inflammable matches from the 1820s, and gelatine whose food uses developed before its photographic uses; tallow for the manufacture of stearic candles; various mixtures of body parts for the manufacture of Prussian blue; entrails for rubber, condoms, musical strings and for separating gold foil; blood for a number of industrial and agricultural applications; various tendons, scraps and parts for making glue; rabbit pelts and hides for the hat industry; hair for mattresses and fabric … were directly recovered from slaughter, later from slaughter-houses at rendering sites (Table 6.1), or by rag-and-bone men from house doorways where they were stacked on the road by ordinary people. Similarly, dog urine and excrement were used in tanneries, and some dogs were raised for this sole purpose.

The operations of various factories and workshops in Paris and in the département of the Seine were in large part based on the use of these by-products whose collection had become essential to industrial expansion and which contributed to urban prosperity.[21] Bones are exemplary of these processes; they formed, along with rags of vegetal origin, the bulk of a rag-and-bone man's income. Whereas in the beginning of the 1820s industries used only 60 per cent of the bones produced by the département of the Seine,[22] the growing importance of bones led to an expansion of their area of collection, as reported in successive editions of the *Précis de chimie industrielle* by Anselme Payen: a 30 km. (19 miles) area around Paris in 1855, 40 km. (25 miles) in 1859, 60 km. (37 miles) or further in 1878.[23] Prices followed: fat bone found for 5Fr. per 100 kg. (220 lb.) in Paris at the beginning of the 1820s, sold for 8Fr. then 10Fr. in the 1850s.[24]

Moreover, animal waste that did not have an industrial use was as critical an agricultural issue as human urine and excrement. Owing to the scarcity of rural manure and the expansion of suburban agriculture and food demand, Parisian manure was carefully collected – in the 1860s, it was exported 'as far as 120

19 This was the case only from 1866 for horsemeat as it was not, until then, intended for human consumption.

20 Barles 2005a, 2005b.

21 The Seine département consisted of Paris (3,700 ha then 7,800 ha from 1860) and 80 surrounding villages, totalling 47,300 ha (117,000 acres).

22 *Recherches statistiques sur la ville de Paris et le département de la Seine*, vol. 3, Paris, 1826: table 122.

23 Payen 1855: 903, Payen 1859, vol. 2: 488, Payen 1878, vol. 2: 680.

24 *Recherches statistiques,* op. cit., vol. 3: table 120, Payen 1855: 907, Payen 1859, vol. 2: 494.

kilometres [75 miles] from Paris, in already considerable quantities' – and its value increased.[25] People fought for the manure market of fire stations, omnibus companies, slaughter-houses or the right to buy manure from cowsheds.[26] The mud on the streets owed a great part of its fertility to the presence of animal matter – excrement, waste from slaughter-houses and other plants. Its importance was such that mud removal contractors increasingly contracted out the collection of mud to farmers who brought their products to the early-morning covered markets and came back loaded with mud. 'This method of operation, a true work of genius that, in saving public health, was responsible for the fertilization, at a low price, of the most unfarmable soil and for the production of up to six annual early harvests, could not be abandoned', wrote Dr Bouchardat in 1876.[27] Too dirty to be used to refine sugar, animal charcoal produced a high quality fertilizer, notably because it contained phosphates and blood (an aid for animal charcoal in refining): 'thus, the residue from clarification sold for more than the product purposely made for clarification and a portion of the discoloration of syrups'.[28] Superphosphates, developed as early as the 1840s in England by treating bone with sulphuric acid, began to be produced in Paris in the 1870s: before rock phosphates, superphosphates were fabricated from bones obtained from slaughter-houses and renderers.[29]

Finally, the role of animals in urban transportation was growing. Individual mobility remained essentially pedestrian, but the number of hackney carriages (hansoms) and livery coaches multiplied (2,948 in 1819; 5,442 in 1853; 12,893 in 1891), and, in 1828, public transit began. Omnibuses (386 in 1843, 628 in 1891), and later horse-drawn streetcars, gave horses an increasingly important role. The transportation of goods, a never-ending headache for cities, also depended heavily on animal traction: mostly horses, more rarely oxen and dogs, although they were theoretically banned from being used in this way.

Increased urban traffic was mentioned in texts as early as the first half of the nineteenth century; in 1834, it was summarized as follows:

> Today […] in greater Paris, increased works and businesses require the movement of a prodigious quantity of all types of carriages; an orderly system should be prepared to stave off all the inconveniences and more or less serious misfortunes that occur daily and are produced by the movement of a great quantity of carriages […] the infinite number of stagecoaches and other carriages, including two wheelers […]: despite the widening of crossroads and

25 Commission Des Engrais 1865–6, vol. 1: 31.

26 Bouchet 1993: 99. In 1869, the annual concession of fertilizer from the La Villette slaughter-houses had grown to Fr.3,000.

27 Bouchardat 1876: 3.

28 Payen 1859, vol. 2: 503.

29 Payen 1878, vol. 2: 717. France produced 200,000 tons of superphosphates annually in the 1870s, but this included rock phosphates.

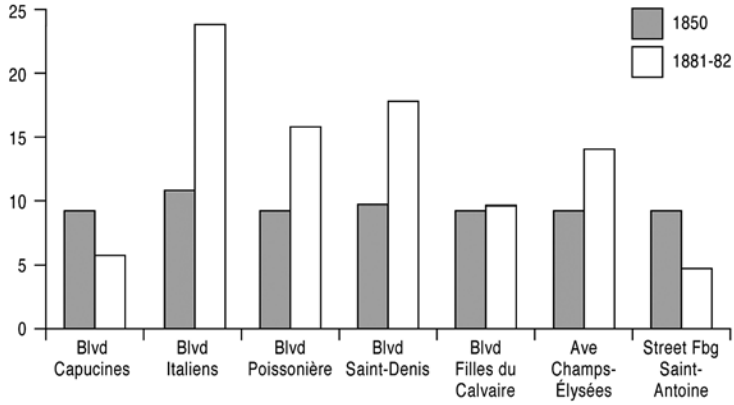

Figure 6.3 Traffic in selected streets of Paris, 1851 and 1881–82 (thousands of collars per day)

Source: Darcy 1850, 188; Prefecture de la Seine, 1882

> squares, the movement of this frightening quantity of carriages is restricted and the number of accidents is increasing daily.[30]

Accidents will be re-examined later in this article, however we can say now that the situation was such that Henri Darcy,[31] an engineer of the Ponts et Chaussées, instigated the first urban traffic count as early as 1850. A comparison of the numbers reported by Darcy with those of the 1881–1882 traffic survey is meaningful: in certain streets, in particular those on the Right Bank, traffic doubled (Figure 6.3).[32]

Nuisances

If animals were considered essential to urban activity, they were nevertheless seen as nuisances, even hazardous. 'In big cities, especially if they are dirty […] sulphurous exhalations escape and soon blacken the gold and silver lace; but what is worse, if these cities are not well ventilated, or exposed to wind, an atmosphere of man and animal respiration spreads and produces an unhealthy air' wrote François Boissier de Sauvages as early as 1754.[33]

30 Letter from Mr Forestier to the police prefect, 28 June, 1834. Paris Police Headquarters Archives, DA 263.

31 Darcy 1850: 188.

32 Préfecture de la Seine 1882.

33 Boissier de Sauvages 1754: 56.

The discovery, at the end of the 18th century, by Joseph Priestley and Antoine-Laurent Lavoisier of the process of respiration confirmed this ancient fear and highlighted the dangers of city living: by its concentration, the population contributes to the vitiation of the air that it breathes, and thus to its own slow death; the animal density only made this worse. In the same way, urban air and soil contamination, largely attributed to the excess of organic materials that characterized these cities, were again aggravated by the animal presence.[34] Indeed, the movement of many animals contributed to the excess of mud that characterized urban areas of the nineteenth century. This mud was all the more contaminated as it was full of animal excrement and 'revolting decompositions' – also giving it fertilizer value:[35]

> Everyone knows this dirty matter of a more or less fetid odour, made in big cities from a mixture of detritus and various animal, vegetable and muddy substances, called *mud*. It is also known that this matter is the cause of insalubrities, either because it retains water very powerfully and thus keeps a putrid humidity, or because of a putrid fermentation, that does not take a long time to take place where mud accumulates, resulting in deleterious gases, hydrosulphuric acid, hydrosulphurous ammonia, etc., whose hazardous effects are well known. [36]

In addition to the situation common to urban spaces, certain areas were regarded as being at putrid concentrations: rendering sites, butcher's shops, slaughter-houses. For example, the number of rats at the beginning of the nineteenth century was reported to be 100,000 at the Montfaucon site, where both garbage dumps and cemeteries were found.[37]

But beyond their contribution to the general insalubrity, animals often had much more serious effects. Horses could sometimes transmit glanders or farcy to humans.[38] The infatuation for bull-dogs, renowned for their ferocity, led the Seine prefecture to ban them from open public spaces in 1843; elsewhere, even in private dwellings, they had to be muzzled and tied up.[39]

Rabid dogs could kill and their omnipresence in urban areas was worrisome. As early as 1796, England imposed a tax on dogs in an attempt to curb their proliferation: the same solution was adopted in France in 1856.[40] Here it was more a question of limiting ownership by the poor as their animals were 'the most poorly looked after, the most susceptible to wander and to contract rabies'.[41] This tax was not approved unanimously. At the end of the nineteenth century, Arnould remarked

34 Barles 1999, first part: La ville des médecins.
35 Dehorne 1788: 10.
36 Payen, entry 'Boue' in Francœur et al., vol. 3, 1823: 359.
37 Parent-Duchâtelet 1832: 95.
38 Arnould 1889: 1360.
39 Police edict of 28 February, 1843.
40 Digard 1999: 23.
41 Arnould 1889: 1357.

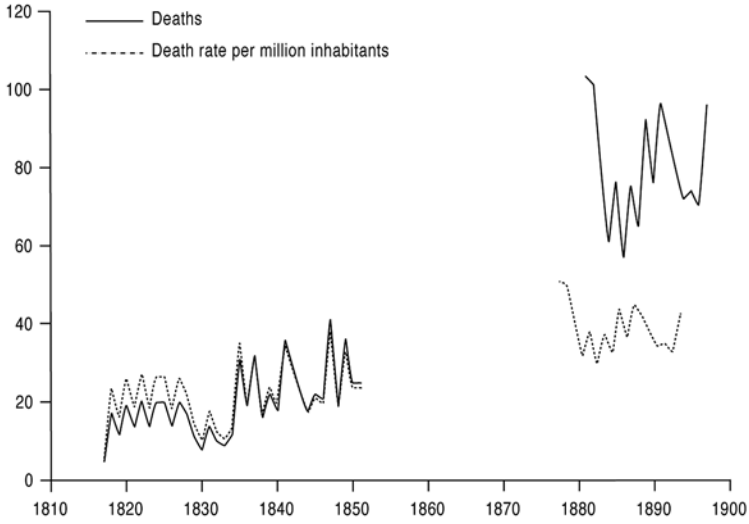

Figure 6.4 People 'run over by carriages', Paris, 1817–1897

Source: *Recherche statistiques sur la ville de Paris et le département de la Seine, Paris, 1821–1860*. 6 vol; *Annuaire statistique de la ville de Paris et du département de la Seine (années 1880 à 1897)*, Paris 1881–1899

that the tax did not decrease the number of human victims and described it as 'harassment' in the same way he considered a lump of poisoned meat 'immoral'.[42] He preferred a 'muzzle when it was well done' – the effectiveness of which had been shown in Berlin and Bade – and requiring dogs to wear collars with the name and address of their owners.[43] According to him, 'true protection' could be best achieved by the 'pursuit of stray dogs'; in fact, it was because of a stray domestic dog that, in 1878, a young family man known in the art world died after being bitten. Anti-rabies by-laws were subsequently revived in the Seine département: 4,717 dogs were captured in July and August, and 4,500 were destroyed. In 1881, the law on animal health prescribed the slaughter of rabid animals or those suspected of being so, as well as a series of prophylactic measures intended to limit the risks of rabies.[44]

Apart from what are today called the epidemiological risks attached to animals, animals were also widely considered to be responsible for the increasing number of traffic accidents in nineteenth century Paris (Figure 6.4). Admittedly, this increase was less significant than the increase in the number of collisions between

42 Ibid.
43 Ibid: 1358.
44 Courmont et al. 1932: 731.

animal traction and engine traction that would mark the beginning of the twentieth century, but animals were almost universally blamed.[45]

In particular, fear of accidents, for reasons clearly explained in police regulations, justified the ban on harnessing dogs:

> Considering that, contrary to previous regulations, merchants, butchers, bakers, tripe butchers and others routinely use carriages pulled by dogs for the transportation of goods;
>
> That these small carriages, whose manoeuvrability is difficult because of the dogs' unruliness, rush daily to the covered markets and outdoor markets at the very hours that adjacent roads are the most congested by pedestrians and vehicles of all types; that these carts, despite their drivers, slip between other carriages and frequently cause inextricable traffic hold-ups and annoyances;
>
> That these animals are forcibly overworked sometimes irritates them to such a point that several drivers and even passers-by have already been seriously injured;
>
> Finally, considering that dog-driven vehicle traffic in the capital is a permanent cause of accidents, and that the large number of these animals increases, in frightening proportions, the danger of rabies and that this is a perpetual, and unfortunately well-founded, fear in the population, is one of the calamitous scourges that the municipal authority must prevent by all available means. [46]

In large part, this fear was the root of the many traffic regulations in the streets of Paris. As such, citizens were forbidden to

> drive or to have someone else drive, either to drinking troughs or elsewhere, in this city and its suburbs, their horses and he-mules harnessed together in numbers greater than three, including the animal on which the driver was to ride. It is forbidden for them to entrust these animals to their children, servants and others under the age of eighteen, and to let the horses and he-mules run or trot in the streets.[47]

This edict was frequently renewed[48] and women were prohibited from driving horses.[49] Moreover, 'considering that accidents caused either by excessive speeds of

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45 To such a degree that the perceived risk was, unlike now, greater than the actual or, more precisely, the statistical risk. See Barles 2006.

46 Police edict of 1 June, 1824, renewed 25 May, 1845 and 6 June, 1878.

47 Police edict of 21 December, 1787: art. 4.

48 Particularly instructions of 27 Ventôse year VIII (18 March, 1800), Police edict of 9 May, 1831.

49 Police edict of 9 May, 1831: art. 8. See also police edict of 11 November, 1808: art. 10.

waggons or by poor handling of all types of carriages happen frequently', carriages were supposed to go at a walking pace when loaded with goods, and at a walking pace or trot when transporting people.[50] Galloping was strictly prohibited. These general measures, inherited from the eighteenth century, were frequently reiterated in the nineteenth century and became increasingly restrictive. Thus, in 1819, the Paris police headquarters specified that 'carriage drivers and carters are forbidden to let their horses *trot or gallop* and to ride them: they must go on foot'.[51] This very unpopular measure, which gave rise to many complaints, was repeated several times over the course of the nineteenth century.

Carriages that transported people faced fewer restrictions: 'jogging'[52] was tolerated, but horses had to walk through tollgates[53], in the 'dual interest of public safety and perception'[54] – 'disputes continually result from these restrictions and often the guard on duty is forced to cross bayonets to force coach drivers to go slowly'[55]; beginning in 1808,[56] it was mandatory for rented coaches in the area surrounding theatres to be driven at a walking pace; as early as 1823, this applied to all carriages 'in markets, as well as on narrow roads where carriages cannot pass two abreast';[57] in 1828, 'when crossing bridges and generally in every place where the ground is too sloping to allow horses to trot safely';[58] and, in 1843, at intersections, in the bend of streets 'and generally everywhere on public roads where there are either steep slopes or traffic obstacles'.[59]

In any case, the danger represented by horses was stigmatized and animal traction was thus perceived as the main constraint to traffic, a dangerous stop-gap, to which was added 'the constantly recurring danger resulting from the journey of domestic livestock in cities'.[60] Unfortunately, because they were not often obeyed, the assortment of regulations was not enough to pacify the streets, to the extent that, in 1821, a coachmen's fund was established; 20 centimes were deducted daily from the coachmen's salary by employers in order to establish a reserve fund earmarked for paying future fines.[61]

Just like the archival records, official texts also denounced the violence on the street. A letter, signed in 1840 by 'a peaceful citizen who always goes on foot',

50 Police edict of 18 February, 1819, preamble.

51 Ibid: art. 6.

52 Police edict of 16 July, 1823, renewed 8 January, 1829 and 21 March, 1831.

53 Police edict of 18 February, 1819: art. 8.

54 Letter from the Director of the granting rights to the police prefect, 12 July, 1822. From the Paris Police Headquarters Archives, DA 262.

55 Letter to the police prefect, 2 August, 1827. From the Paris Police Headquarters Archives, DA 262.

56 Police edict of 25 July, 1808: art. 23.

57 Police edict of 16 July, 1823: art. 7.

58 Police edict of 25 September, 1828: art. 7.

59 Police edict of 15 January, 1841: art. 39; Police edict of 20 April, 1843: art. 9.

60 Thomas 1873: 24.

61 Police edict of 23 August, 1821.

began with these words: 'at a time when accidents, caused by carts, are becoming so frequent in the streets of Paris (today again a child was hit near the Place des Victoires)' and suggested the establishment of a commission dedicated to issues of speed.[62]

In 1841, it became forbidden to 'use stallions, vicious, sick or disabled horses'.[63] In addition to the potential dangers that these vicious or sick animals represented, animal welfare emerged in this text as an area of new concern. These regulations were strengthened in 1843 when it was forbidden for 'coachmen of bourgeois carriages to mistreat in any way the horses they were driving, to hit them with the handle of their whips'.[64] Indeed, the archives contain several letters and reports of brutality to horses, notably for the period 1840 to 1846. In 1840, the Paris police headquarters received a petition bearing 14 signatures 'on the usefulness and possibility of making an order against individuals who mistreat animals, in particular horses'.[65]

These events must be compared to the steps taken by the Duc de La Rochefoucault and the Comte de Laborde beginning in 1839 that led to the creation of the Society for the Prevention of Cruelty to Animals in 1845 and in 1850 to the Grammont Law that penalized the abuse of domestic animals.[66] If an improvement resulted from these steps, the fate of horses remained unenviable. One could still read in 1906:

> However much the miserable Percherons get out of breath, tense their muscles, fatigue stops them. Then they are beaten with sticks; it is a tumult of injuries, of whips cracking. The poor beasts are covered in lather, fall: these are scenes of an indescribable barbarity.[67]

Conclusion: the Twentieth Century, a Triple Exclusion

Thus, in the nineteenth century, urban animals represented a necessary evil. They would not, however, withstand the industrial, agricultural and urban transformations of the next century.

In the twentieth century, industry progressively began to do without raw materials of animal origin. Gas, then electric household lighting (from the inter-war years onwards), led to a spectacular decline in the stearic industry. Mechanical procedures replaced animal charcoal for clarification in sugar refining. Colouring

62 Letter to Prefect of Police, 24 January, 1840. From the Paris Police Headquarters Archives, DA 263.

63 Police edict of 15 January, 1841: art. 7.

64 Ibid: art. 20.

65 Petition of 15 May, 1840. From the Paris Police Headquarters Archives, DA 263.

66 Act of 2 July, 1850. See Bouchet 1993, Lizet 1982.

67 Lux 1906: 224.

agents obtained as by-products of the distillation of coal, of coke ovens, and of petroleum refineries contributed to the disappearance of the Prussian blue industry. Celluloid, then Bakelite, the first plastics, competed with the bones used in fancy goods. Many of the existing markets for butchery by-products dried up in this way.[68] Even rat extermination by chemical means made cats useless – they could finally become pets.[69]

Similarly, urban fertilizers were less and less important for agriculture. The discovery of fossil phosphate deposits during the second half of the nineteenth century, first in France and then in North Africa and America, showed that urban phosphates (animal charcoal after passage through sugar refineries, excrement, bone superphosphates) were no longer competitive. The production of ammonium sulphate from recovered aqua ammonia from large industrial and extra-urban coking plants, and of ammonia (Haber process, Claude process, etc.) from atmospheric nitrogen supplied industries and agriculture with a seemingly limitless quantity of nitrogen.

The mechanization of transportation led to the rapid obsolescence of urban horses. In the département of the Seine, the decrease in the number of horses was dramatic: 110,000 in 1902, 22,000 in 1933. In the inter-war years, horses became increasingly hard to find in the streets of Paris, all the more so because their presence was masked by the rapid development of engine traction. Moreover, traffic administrators called for the removal of horses. Émile Massard, author of several reports on the improvement of Parisian traffic, thus wrote in 1923:

> the day when 'man's most beautiful conquest' (naturally, I am speaking here of horses) will have returned to the pastures or the large steppes where they once walked free, Paris's car traffic problem will be resolved and the Society for the Prevention of Cruelty to Animals will breathe a deep sigh of relief as it closes its doors.[70]

At the same time, many previously urban animals were moved outside the city. The streamlined transportation of domestic livestock led to the disappearance of the convoys that used to criss-cross the streets of Paris: cows, oxen, sheep, and also the dogs that accompanied them. Improvements in food preservation procedures (refrigeration) allowed a progressive distancing of the places where animals were slaughtered for meat. These were closer to livestock areas; the carcase thus taking precedence over live animals. This improvement also allowed some of the food- and milk-producing industries to move away. Furthermore, the first phase of urban sprawl during the inter-war years led to a growing distancing of agriculture and peri-urban livestock farming.

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68 Offal industries found new opportunities including the infamous animal meals.

69 As noted by Digard 1999: 33, in order to attain the status of a pet, an animal must be useless.

70 Massard 1923: 93.

The disappearance – in relative terms, but also in the minds of the inhabitants – of urban animals was greeted with relief, given the constraints they represented: sanitary constraints, traffic constraints and also spatial constraints. To the relief of traffic congestion, commonly attributed to animal traction, was added the multiplicity of space dedicated to animals (stables, cowsheds, haylofts, slaughter-houses, etc.) and it was without a second thought that urban administrators sent these animals to the 'oubliettes'. Forgetting animals is evident in the many texts placed under the seal of urbanism, a neologism proposed in 1905. To quote one such text, the *Charte d'Athènes* (1941):

> It is necessary not only to look for the most beautiful views, but also for the healthiest air taking into account the winds and fog and for the most well exposed slopes, and finally to use the existing green spaces, to create them if they are absent or recreate them if they have been destroyed.[71]

In this, vegetation is reduced to mysterious 'green spaces', a theme that recurs throughout the text. As for animals, there are none. It is thus striking to note that while urbanism, no matter what school of thought it refers to implicitly or explicitly, greatly stresses the importance of nature in the city, it never mentions animals as a component of this nature.[72] As noted by Nathalie Blanc, an urban planner's nature is a nature without animals, reduced to the sun, the air, the light, the salutary vegetation – here, and elsewhere, it is possible to measure the role hygienics has played in the formation of urban thinking.[73]

71 Le Corbusier 1957: 48.

72 It is evident in Françoise Choay's 1965 anthology.

73 Blanc 2000.

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Chapter 7
Locating the Transformation of Sensibilities in Nineteenth-Century London

Takashi Ito

Animals abounded in Victorian London. The streets bustled with horse-drawn cabs and coaches, the congestion increased by sheep and cattle being driven to the livestock market. Menageries and circuses rendered animal spectacles routinely familiar. The sight of animals also became one of the important elements that formed popular images of the metropolis. A stream of horse traffic could be admired in a mood of public celebration of London's 'progress' and 'civilization'. Large livestock herds at Smithfield Market amazed sightseers with the enormous scale of meat consumption in the city. In parallel with this appraisal, however, an increasing number of people began to perceive that animals were sacrificed for metropolitan luxury and blatant commercialism. Accordingly, animal welfare campaigners emerged to crusade against cockfighting, baiting, dogcarts, vivisection and other practices that were deemed wanton cruelty to animals.[1]

Indeed, recent research has emphasized that an increasing awareness of animals in the city not only transformed the ways in which they were perceived and treated, but also influenced the contemporary interpretation of the urban experience.[2] Yet this account risks circular reasoning: it is arguable that the perception that animals abounded was the origin as well as the outcome of animal welfare campaigns and related ideas. Certainly, popular sensibilities about animal life changed in nineteenth-century London, but it was the complex process that cannot be fully explained without considering the correlation of various factors. This chapter suggests setting the subject within the context of urban geography, thereby arguing that the geographical transformation of London contributed to the reshaping of the spatial and cognitive frame in which people perceived and interacted with living beings. The changing urban environment encouraged a redefinition of the boundary between human and animals, which in return influenced the relocation of 'animal spaces' in the city – the spaces in which animals were visible and elicited reactions from humans.

This discussion is largely based on a case study of the London Zoo. At first glance, the zoo may appear so distinct that its framing of human-animal relations is highly specific and could hardly be extended to other areas of human-animal

1 Moss 1961, Harrison 1973, French 1975.
2 See, for example, Kean 1998, and Donald 1999.

interactions. It was nonetheless linked to the broader transformation of which the zoo played a part. The social experience of the zoo reveals its meaning in the light of analogy and comparison with other 'animal spaces'. When its locus is geographically identified, the zoo sets the stage for investigating changing sensibilities about animal life in the city. The essay takes three steps. First, it specifies the locality and uniqueness of the zoo in connection with other sites of animal spectacles in the city. Second, the zoo is compared with the livestock market in order to consider the issue of the inclusion and exclusion of animals. And third, the discussion explores how the zoo drew the boundary between humans and animals, and how people reacted to the animals that transgressed the expected roles that the boundary regulated.

Relocation of the Sites of Animal Spectacles

As a site of animal spectacles, the London Zoo was not the first institution to emerge in the city. The Tower Menagerie and the relatively short-lived Edward Cross's Menagerie at Exeter Change (currently the Strand) had provided popular attractions before the zoo was opened by the Zoological Society of London in 1828.[3] While both menageries were located within the crowded area, the zoo was constructed in Regent's Park on the north west outskirts of the city, where sumptuous villas and terraces constituted the picturesque landscape.[4] Therefore, the opening of the zoo, followed by the demolition of the Exeter Change Menagerie and the Tower Menagerie, indicated the relocation of the major sites of animal spectacles from the centre to the border of the city. Indeed, the zoo adopted the geographical environment that favoured its development. Renovated by 'metropolitan improvements' in the aftermath of the Napoleonic wars, Regent's Park became a venue for social pleasures, easily approachable from the fashionable West End via Regent Street and Portland Place.[5] Access to the zoo became more convenient when the expansion of the public transport covered the area to the north of the park in the 1840s, and even more so when a railway station opened at Camden Town in 1850.[6]

The geographical distance from the central area, as well as the surrounding picturesque landscape of the park, was appealing to the leisured classes, even though the zoo was not visited exclusively by them. The minutes of the Council

3 Bennett 1829, Hahn 2003, Ritvo 1987.

4 For the early history of Regent's Park, see Summerson 1935, Davis 1973, Crook 1992, Anderson 1998.

5 Elmes 1827.

6 Prior to the Great Exhibition of 1851, the Zoological Society had arranged excursion trains to Camden Town railway station, which was located within ten-minutes walking distance of the London Zoo. Archive of the Zoological Society of London (hereafter, ZSL), Minutes of Council, vol. 10: f. 41.

of the Zoological Society reveal that it was eager to promote the presence of high-profile people. In January 1828, prior to the public opening of the zoo, the council resolved to present foreign ambassadors with an ivory ticket that gave them free admission to the zoo.[7] Later in the same year, the free tickets were again distributed to 'such individuals as, from their station or service to the society, may appear likely to aid the object of the institution', as well as to 'such foreigners and gentlemen connected with the public press'.[8] It is difficult to identify all the gentlemen who were enticed to visit the zoo regularly by receiving complementary tickets, but Prince Lieven, the Russian Ambassador, was likely to have been one of them.[9] His wife, Dorothea Lieven, was a talented diplomat in her own right, using her charm and intelligence to become such a prominent figure that rumour had it that she was the mistress and confidante of everyone in the court and the cabinet.[10] If Princess Lieven accompanied her husband to the zoo, her presence certainly celebrated the zoo's aristocratic patronage. In June 1838, the Zoological Society also tried to invite 114 special guests comprising 'Ambassador Extraordinary and Foreigners of Rank', who visited London to attend the coronation of Queen Victoria.[11]

Catherine Gore's *The Diary of a Désennuyée* (1836) offers a fascinating glimpse behind the scenes of fashionable assemblage in the zoo. As a prime example of a silver fork novel, it satirized the lives and pursuits of the English upper class, seen through the eyes of an imaginary diarist.[12] Not surprisingly, the zoo was depicted as a destination for the 'pilgrims' of polite society. With a sarcastic tone typical of silver fork novels, Gore sketched a conversation scene, a variation of 'the same sapient remarks uttered there Sunday after Sunday':[13]

> What a vastly conjugal couple! – Who? Mr. and Mrs. William C.? – No! that pair of blue and buff macaws! What a fate! – to be caged in eternal fidelity, as an example for ladies and gentlemen! – How those chamois remind one of Chamouny! Dear Switzerland! Lord Milton, were you ever in Switzerland? … and then, people talk of the diffusion of knowledge, and the advantage of penny libraries! Do let us go, Lady Evelyn, and see the kangaroos swallow their young. – Do they really swallow them – To be sure – I have seen them a thousand times.

While the dialogue deployed the conventional antipathy to the frivolity of the fashionable elite, it implied that kangaroos, macaws and many other exotic species, the picturesque backgrounds in which these animals were displayed, and the entire

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7 Ibid., vol. 1: f. 67.

8 Ibid., vol. 1: f. 213.

9 BL, Add. Ms. 47,294A: f. 113, Vigors to Prince Lieven dated 23/6/1828; BL, Add. Ms. 47,296: ff. 100–112, Zoological Society to Prince Lieven dated 10 July, 1833.

10 Charmley 2005, Cromwell 2006.

11 ZSL, Returns: ff. 49–52. Prince Lieven had been recalled in 1834.

12 Kendra 2004. For the silver fork novel, see Adburgham 1983, Hughes 1992.

13 [Gore] 1836, vol. 1: 179–80.

space of the zoo, supplied spectators with an up-to-date conversation piece. The secret of getting on in life in polite society was no doubt to entertain conversational partners with agreeable, wide-ranging discussions. Therefore, social display, the theatrical spectacle of exotic animals, and gossipy talks peppered with a hint of science – as indicated by the gentleman's proposal to witness kangaroos 'swallow' their young – constituted the pleasure of strolling in the zoo in party. Each element of attraction was, however, not exclusively associated with the zoo. Members of polite society congregated at opera houses and pleasure grounds to be indulged in conspicuous display, as well as in visual and musical entertainment.[14] Salons created a semi-public space in which talks on science were encouraged, although the range of topics and the degree of female participation was controlled.[15] These different leisure habits were drawn together in the zoo's spatial fabrics and attractions. By extending and combining these familiar spaces, the zoo mustered its unique allure.

Notwithstanding that the zoo displayed many similarities with commercial pleasure gardens, it was significantly different in terms of management policy. Established by the Zoological Society of London, the zoo identified itself as a scientific institution. At first, the effect of this self-identification was not noticeable, but it appeared most explicitly in comparison with the Surrey Zoological Gardens, which opened in 1831 in the neighbourhood of the well-established Vauxhall Gardens. Edward Cross, the proprietor, who had formerly owned the Exeter Change Menagerie, successfully competed with the London Zoo by providing pleasure-garden-style entertainment, such as flower shows, firework displays, balloon ascents and gigantic panoramas.[16] The proprietors of the London Zoo, however, did not follow its proficient rival, because they did not want to let the commercial side predominate. In 1836, Vauxhall Gardens invited Charles Green, famous balloonist, to undertake an aeronautical ascent. As it was successful, other proprietors might be tempted to organise similar events. Yet the London Zoo did not introduce aeronautical shows, whereas Edward Cross hosted Green's *Royal Nassau* in 1838, in his foiled attempt to add to the variety of special exhibitions regularly taking place in his Surrey Zoo.[17]

The introduction of military bands was also discussed, but it was not until 1843 that the promenade concert began to take place during the summer season.[18] The Zoological Society was afraid that the popular image of the London Zoo would be too closely associated with profit-making activities. Although it was often questioned whether the zoo was genuinely a scientific institution, the theme

14 Hall-Witt 2003, Edelstein 1991, Hunt 1985, Altick 1978.

15 For the discussion on science in polite conversation, see Walters 1997, Alberti 2003, Secord 2000.

16 Altick 1978: 322–31.

17 17. *Mirror*, 26 May 1838. The ascent from the Surrey Zoo ended in failure, and the balloon collapsed from the attack of the unsatisfied audience.

18 ZSL, *Report of the Council of the Zoological Society* 1843: 5.

of science provided the zoo with a scope for long-term development as a cultural amenity of the metropolis.[19] In the 1850s, while the popularity of its commercial rival waned, the London Zoo was effectively restructured into a zoological amusement park by holding the balance between science and commerce in the management. When urban entertainments were increasingly commercialised, the zoo's identity as a scientific institution was vital to keeping its unique position in the leisure market as well as to adapting to the geographical transformation of the metropolis.

Inclusion and Exclusion of Particular Animals

London's geographical transformation involved not only menageries and zoos but also other 'animal spaces'. As Chris Philo has suggested, nineteenth-century London experienced the socio-spatial process through which particular animals were excluded from, or included in, the city.[20] The contrasting cases of the London Zoo and Smithfield Market underline the significance of this process. In 1828, the year of the zoo's opening, Parliament appointed a select committee to discuss the removal of the livestock market from Smithfield. Among the reasons suggested by its exponents, the smell of the animals drew particular attention. These anxieties were linked to sanitary reform, which aimed to tackle the poverty and disease aggravated by the expansion and congestion of the city. The reformers believed that disease was caused by 'miasma' or poison in the air exuded from rotting animals, stagnant water and putrefying soil. A remark of Edwin Chadwick, a driving force of the public health reform, is most revealing: 'all smell is, if it be intense, immediate, acute disease'.[21] Nonetheless, resistance against the removal continued, because the market had long benefited various actors, ranging from farmers and wholesalers to hospitals and businessmen who resided near the market, as well as the financial interests affiliated with the city of London. At last, the trading of livestock was moved to Islington in 1855, and five years later, it was resolved that the place should market dead meat only.[22] In 1868, two main buildings were completed above the railway lines, which enabled meat to be delivered directly to the market.

Fears of smell aroused anxieties when the construction of the London Zoo began in Regent's Park, because one of the expected functions of the park was to provide fresh air for the public, mainly for fashionable residents in the neighbourhood.[23]

19 Zuckerman 1976: 10, Ito 2004: 182–9.

20 Philo 1998.

21 Porter 1998: 10, 259, 411, 428.

22 Perren 1985: 385–400.

23 The National Archives (hereafter TNA), WORK 16/724, Maberly to Milne and Joseph Sabine dated 13 October, 1828; WORK 16/725, Nash to Milne dated 25 May, 1830; 14 September, 1830.

In summer 1828, the Zoological Society planned the construction of a winter repository for animals and submitted its design to the Commissioners of Woods and Forests, who managed the Crown estate under the supervision of the Treasury. The plan of the winter repository was, however, rejected by the Commissioners, because of strong opposition from John Maberly, M.P., who owned St. John's Lodge in Regent's Park. Maberly denounced the Commissioners for dismissing the covenant and threatened to sue the Zoological Society for 'the actual violation of the rights of Individuals'.[24] As a result, the society had to abandon the construction of the winter repository and suffered the loss of 'some valuable animals' in the following winter.[25] No substantial works could be undertaken until Maberly left his villa in the park due to the failure of his own business in 1829.

John Nash, the favourite architect of George IV, was also persistent in his attempt to remove all of the zoo's buildings from Regent's Park. As the official architect for the Office of Woods and Forests, Nash had played a vital role in the redevelopment of the Regent's Park estate. He was also a major property developer of the estate, suggesting the construction of more villas in the plot of the park, which had been virtually occupied by the zoo prior to the conclusion of a legal agreement. Therefore, Nash suggested the eventual removal of the zoo by insisting that it was exuding a fetid odour and was endangering public health. A passage from his letter to the Commissioners argued against:[26]

> … the noisome smell which frequently assails those who for health or pleasure take their Exercise round the Circular Road, and that the nuisance must increase as the numbers and variety of animals increase and may become such a nuisance as to require legislative authority to abate.

Nash accordingly stated that the constant arrival of new animals and their high mortality produced the stench of waste, corpses, and animal sewage in the park. Given such ample justifications, Nash successfully halted the conclusion of the lease contract between the Zoological Society and the Commissioners. His opposition continued until October 1830, when he was suddenly suspended from office because his extravagance in the construction of Buckingham Palace had become the target of fierce public criticism.[27]

Early anxieties about smells receded as the zoo gained popularity among the wider public. It was as if its popularity had disguised such concerns, because spectators visited the zoo to have fun, allowing their attention to be captured by its total novelty rather than by the smell and filth of the animals. This tolerance of the smell was noticeable in popular perceptions of the zoo. In guidebooks and

24 TNA, WORK 16/724, Maberly to Milne and Joseph Sabine dated 13 October, 1828.

25 ZSL, *Report of the Council of the Zoological Society* 1829: 16–17.

26 TNA, WORK 16/725, Nash to Milne dated 25 May, 1830; 14 September, 1830.

27 Summerson 1935: 229–76.

travelogues, the zoo was described as differing from menageries and circuses, and providing better living conditions for its inhabitants.[28] Although dissenting voices were occasionally heard, the appraisal by prescriptive literature chimed with many individual responses.[29] In May 1830, for example, a seventeen-year-old girl, Anne Chalmers, noted in her diary: 'It [the zoo] is a most delightful spectacle, the animals have so much more liberty than in common menageries'.[30] Like the guidebooks and travelogues, spectators compared the zoo with circuses, menageries and shows of performing animals in general. The object for comparison most often referred to was the Royal Menagerie at the Tower of London. Upon his first visit to London in March 1830, Thomas Sopwith, a civil engineer from Newcastle upon Tyne, claimed the Zoo to be 'one of the most interesting places'. By contrast, his subsequent visit to the Tower Menagerie ended with disappointment: 'as a menagerie the thing was much more confined and insignificant'.[31] Charles Knight, author of *The Menageries* (1829), would have agreed with Sopwith. Knight researched the habits of the animals at the London Zoo, the Tower Menagerie and Bartholomew Fair, and concluded that the zoo provided far superior living conditions than the other two.[32]

The places referred to for the sake of comparison were not confined to animal exhibitions. In a literary tour of the zoo published in the *New Monthly Magazine* in 1836, Leigh Hunt remarked: 'Those animals look as fresh, and strong, and beautiful, as if they were born in a new beginning of the world'.[33] In his view, the animals in the zoo presented a striking contrast with unhappy horses dragging hackney-coaches along busy streets, although his poetic high spirits sank into melancholy when he began to contemplate the life of animals in captivity. As illustrated by Figures 7.1 and 7.2, both of which were drawn in the 1830s, while exotic camels appeared to be cared for properly in the zoo, domestic cattle were depicted as being treated badly at the livestock market. During the course of the nineteenth century, the inclusion of more exotic animals was firmly secured as the zoo established its status, while the pressure to remove domestic livestock from the urban landscape gradually increased. This kind of contrast and analogy referred to various social spaces, not least the zoo and the livestock market, where animals constituted a significant presence and evoked human responses. The impressions of different animals in different urban spaces were broadly related to each other. Thus the zoo was able to mark out its locality by a supposed contrast with the overcrowded streets and markets, and by the putative virtue of providing fresh air

28 See, for example, Taylor 1832: 87–91.

29 One observer criticised in *The Times* that 'many of the animals' were 'standing deep in mud and water, and their bodies covered with filth'. *The Times* 26 February, 1836: 6.

30 Anon. 1923: 111.

31 Sopwith 1847, Richardson 1891. See also Hahn 2003: 236.

32 Knight 1864, vol. 2: 149.

33 Hunt 1836: 479.

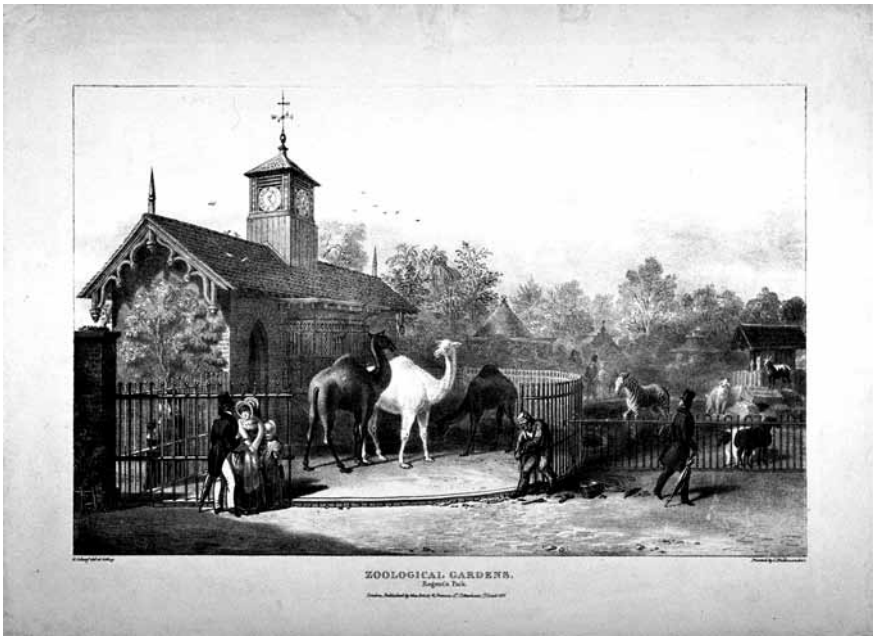

Figure 7.1 View of the camel house in the Zoological Gardens, London

Source: George Scharf, 1835. Reproduced by permission of the Guildhall Library, City of London

for its inhabitants.[34] The inclusion and exclusion of particular animals occurred simultaneously at different places in the city. The zoo took full advantage of this process in order to present its ideal.

Drawing and Crossing the Boundary

The zoo elaborated a unique system of keeping 'wildlife' at a close yet safe distance. Physical contact by means of patting, riding and feeding was only allowed with particular animals. In principle, the boundary between the space for animals and that for human spectators was outlined by fences, cages, walls and ditches. Walking along these perimeters, many spectators might think that, in contrast to humans roaming freely and gaily, the animals were kept under control within the boundaries.[35] This plausible reaction may be construed to justify a recent argument that the zoo embodied man's desire for mastery over the animal universe. Although some critics have elaborated upon the zoo's representational regimes, it is also

34 How widely this spatial identification obtained public recognition is another question, which I have discussed in Ito 2006.

35 Mullan and Marvin 1987: xiv.

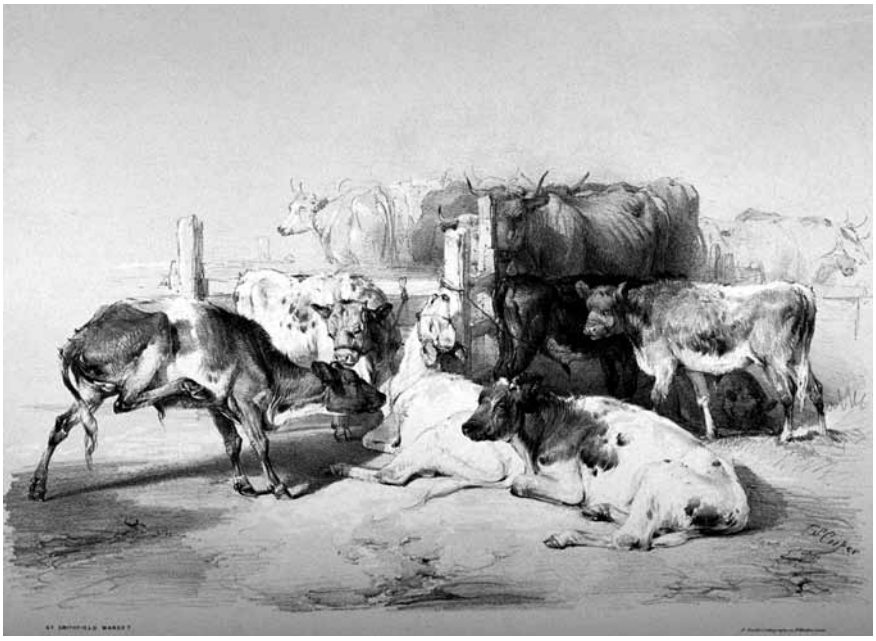

Figure 7.2 Study of cattle in Smithfield Market

Source: Thomas Sidney Cooper, 1837. Reproduced by permission of the Guildhall Library, City of London

important to recognize that this boundary, as well as the zoo's ideals it sustained, was in reality open to various interpretations.[36] For example, in September 1840, Richard Doyle, later a contributor to *Punch*, described in his illustrated diary one zookeeper, who was working inside a cage of tigers, as though he too was a species on display: 'He was sitting on two legs … I was told that although possessed of such remarkable faculties this species is not at all rare'.[37] With a sly sense of humour, Doyle mimicked the narrative of orthodox zoological texts, and parodied the boundaries that the zoo drew between animals and humans.

Animals also transgressed the expected role that the boundary imposed. They occasionally fled confinement and created chaos among the spectators. A shocking event occurred in 1852: an intoxicated keeper was poisoned to death by a cobra, as he aroused it by trying to imitate the performance of Arabian snake charmers, whom he had seen in the zoo some time earlier. This accident stirred public anxieties about spectator security in the reptile house.[38] The Zoological Society was urged to investigate the accident and confirmed that the zoo had provided

36 Anderson 1995, Mitman 1996, Åkerberg 1999.
37 Pollen 1885: 115.
38 Blunt 1976.

sufficient protection for its workers as well as for the spectators.[39] The coroner's inquest, which was reported in principal morning papers, clarified that a group of zoo keepers including Girling, the victim of the cobra, had been drinking farewell to one of their colleagues, who was to embark for Australia.[40] Girling appeared to be the 'type specimen' that moral reformers, especially temperance advocates, would construe to have been victimized by working-class drinking culture. It was then that Charles asked Richard Owen to write about the cobra for his *Household Words*, a weekly journal which aimed to refine the middle-class taste for reading. Accepting the offer, Owen began his article by explaining the accident as 'one of the countless calamities befalling the weekly-wage classes plainly referable to intoxication'.[41] While his writing satisfied Dickens's need for a familiar piece on natural history, the tragic story of a working-class drunkard fits the interests of the Zoological Society, which took no responsibility for his death.[42]

This was not the only story, however, that prevailed among the reading public. A number of weekly magazines were inclined to dramatize the story by engaging readers' imagination.[43] The sensational version of the story was that 'all the serpents in the Zoological Gardens are kept, like the happy family in Trafalgar Square, in one large case', and that Girling worked 'in the ordinary course of his duty' until 'the screams of the victim to the hazardous duty attracted the instant attention of William Cocksedge, another keeper, who thereupon rushed to the serpent-case and drew his companion out'.[44] In this story the reptile house appeared like a 'Happy Family' – a joyful label for the exhibition of natural enemies such as cats and mice displaying a harmonious society in a single cage. Originating from Austin's exhibition at Waterloo Bridge in the 1820s, Happy Family survived into the mid-nineteenth century.[45] While Owen ridiculed the popular fancies that juxtaposed the zoo with this commercial display of animals, the Council of the Zoological Society seemed to be alerted by the spread of such rumours. The experiments

39 ZSL, Minutes of Council, vol. 10: ff. 306–7.

40 ZSL, Newsessay Cutting, vol. 1: ff. 43–5, *Weekly Times* 24 October, 1852: 688, *Sun* 21 October, 1852: 1.

41 [Owen] 1852: 186. Owen received £3.3 for this article. Dickens met Owen first in 1843 and occasionally visited his family. Lohrili 1973: 393.

42 Dickens suggested that Owen should write on the zoo animals under the title of 'Private Lives of Public Fiends?', although Owen could not find leisure to continue his writing. Owen 1894, vol. 1: 389–92: Dickens to Owen dated 19 October, 1852, 20 November, 1852. For Dickens's fondness of Owen's writing, see BL, Add. Ms. 39,554: f. 426, Dickens to Owen dated 15 December, 1863.

43 *Illustrated London News* 23 October, 1852: 335, *Bell's Weekly Messenger* 24 October, 1852: 5.

44 [Owen] 1852: 188.

45 During the 1830s, Austin also travelled the country, under the auspices of the Society for the Diffusion of Useful Knowledge, in order to exhibit his collection at the Mechanics' Institutes. There was another exhibition at Trafalgar Square, which claimed to be the original 'Happy Family'. Knight 1829, vol. 1: 60, Kusamitsu, 1980: 81.

Figure 7.3 A zoo visitor in the form of a crocodile indulging in zoological recreations

Source: *Punch* 14 August, 1852: 85

with venomous serpents were suspended, and one keeper was discharged for drunkenness.[46]

Yet this was not entirely the end of the story. The sudden death of the zoo keeper sparked public debate on the appropriateness of the urgent medical treatment given to him at University College Hospital, which deepened the mystery of the cobra venom.[47] Enchanted with this mystery, Francis Buckland, son of William Buckland, experimented with the effect of the venom on rats. By mistake, he nearly poisoned himself to death, and the knowledge obtained from reading Girling's case barely rescued his life. This dangerous experience was then narrated at full length in his *Curiosities of Natural History* (1858) and was referred to by many other writers.[48]

While this tragic accident highlighted the zoo's strength of offering a chain of stories about animals, it also revealed that the human-animal borderline was not completely enforced at either the physical or cognitive level. The vulnerability of the boundary enhanced the pleasure of the imagination, as Leigh Hunt noted on

46 ZSL, Minutes of Council, vol. 10: ff. 310–14.

47 *The Times* 25 October, 1852: 3, 7–8, 26 October, 1852: 3, 2 November, 1852: 3, *Medical Times* 30 October, 1852: 441–4, *Legal Examiner* 30 October, 1852: 671–2, 688–9, *Lancet* 23 October, 1852: 389, 30 October, 1852: 397–401, 410.

48 Buckland 1858: 153, [Wynter] 1855.

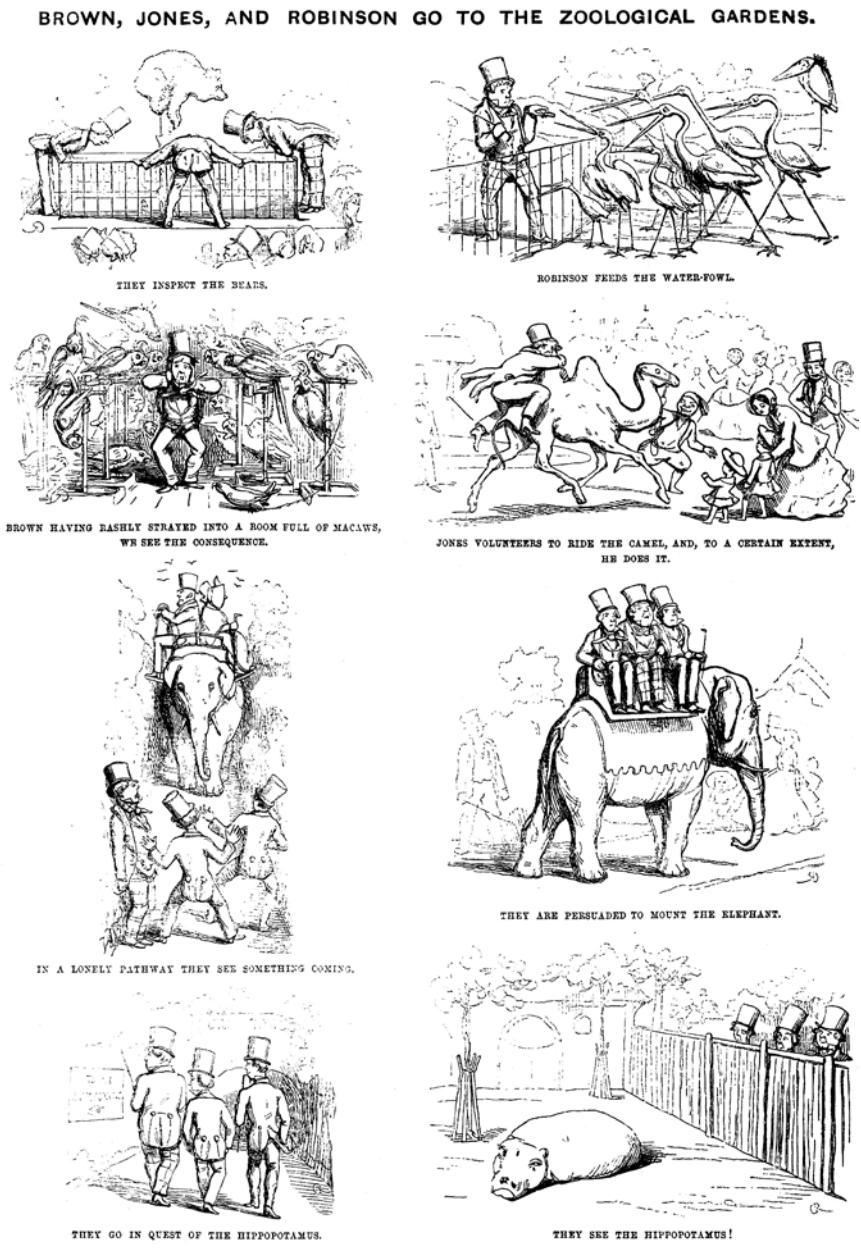

Figure 7.4 'Brown, Jones, and Robinson go the Zoological Gardens'
Source: *Punch* 10 August, 1850: 68

the feeding of a bear: 'It is curious to find one's-self (literally) hand in glove with a bear … A reflection rises – "If it were not for those bars, perhaps he would be eating *me*".'[49] The iron fence embodied the borderline that separated humans from animals, but in the realm of the popular imagination, it could be easily crossed, which fostered the anthropomorphic representation of the zoo animals, as well as the 'animalization' of the zoo visitors. In 1847, William John Broderip, a leading member of the Zoological Society, published *Zoological Recreations*, which compiled scientific findings and anecdotes on various animals with reference to the living specimens in the London Zoo.[50] Acclaimed by his friend, Richard Owen, the book was highly successful. When a new title from Broderip was published in 1852, *Punch* swiftly responded by commenting on his previous *Zoological Recreations*: 'he has left out a few of the most popular recreations in zoology, which are known to and indulged in by the inhabitants of the Metropolis'. These recreations were, the reviewer noted, 'riding on the elephant's back', 'throwing bits of stale bun to the bear', 'pelting the ducks at nightfall', and above all, 'making a donkey of one's self, a recreation which is much indulged in by certain persons at all places of public amusement'.[51] As illustrated in Figure 7.3, a zoo visitor took the form of a crocodile, trying to find a chance to be indulged in these 'zoological recreations'.

In addition, as shown in Figure 7.4, 'making a donkey of one's self' had been vividly depicted on the other occasion by Richard Doyle in *Punch*. The picture was part of his famous series of the comic-trio, Brown, Jones and Robinson, which explored the foiled attempts of these three gentlemen to enter into fashionable society.[52] In the picture of their visit to the London Zoo, they experienced various physical attractions. At the bear pit, they looked into the bottom of the den to catch a sight of the animal, which was watching them from the pole over their heads. Afterwards Brown strayed into a noisy aviary, while Robinson was frightened by the feeding of aggressive cranes. Jones was brave enough to attempt the challenge of riding a camel and only just managed to hang on to its hump. On an avenue to the tunnel to the north garden of the zoo, they encountered an elephant and eventually enjoyed riding on its back. At last, they discovered Obaysh the hippopotamus, whose countenance, with one eye open, conveyed a message that he pretended to be asleep.

While the three gentlemen were still drawn as humans, and animals as animals in the picture, *The Hippopotamus Polka* (1850), a set of variations for the piano, presented a more complex, two-way process of 'animalization' and 'anthropomorphization'. The music was dedicated to Obaysh, who was exhibited in the London Zoo in the same year and soon became the most popular animal in the zoo. The scorebook contained a short story in which a lady explained the

49 Hunt 1836: 482.
50 [Owen] 1847.
51 *Punch* 14 August, 1852: 85.
52 The series later developed into Doyle 1854.

Figure 7.5 Dancing a hippopotamus polka
Source: Saint Mars 1850

origin of the piano music: 'I had last night the oddest dream imaginable … that night when I retired to sleep, but not to rest – I fancied the strains of a polka somewhat resembling the grave growl of the Hippopotamus, but still more the heavy polka-step of our Friend Lord A–'.[53] This was a joke made at the expense of an unnamed aristocrat who was evidently not light on his feet. The style of the polka – lively and rhythmical dance music – rendered it even more comical. The score instructed to play the initial part 'meditatingly and slow' so that it would humorously herald the entrance of the heavy aristocrat into a ballroom. As Figure 7.5 shows, the appearance of the hippopotamus in the frontispiece of the scorebook gave the impression that the figure it referred to was Obaysh the real hippopotamus rather than the fictional 'Lord A – '. It was as if Obaysh had come out of the zoo to dance in gentlemanly costume. It was no longer clear whether Obaysh was anthropomorphized or whether 'Lord A–' was animalized.

After all, in retrospect, the zoo's potential for inspiring people to think *critically* about human-animal relations was limited. Nonetheless, as the reactions of Leigh Hunt and Doyle suggested, they could keep a relatively detached perspective from which to see how the zoo represented the ensemble of diverse features of 'animated nature' – the oft-used term that emphasized the organic harmony of the animal universe.[54] Popular perceptions of each animal in the zoo greatly varied, disrupting any attempts at simple generalization,[55] but a slight tendency may be noted from the remaining records. Tigers and lions were expected to embody wild and ungovernable aspects of nature,[56] while giraffes symbolized its feminine beauty and fragility.[57] Anteaters and hippopotami signified eccentricity and singularity,[58] and monkeys illustrated a mixed nature of docility and shrewdness.[59] Expectations to find such unique 'nature' in particular animals were the essential attitudes of spectators, although they were frequently betrayed. As Leigh Hunt witnessed, one gentleman was disappointed to find a 'boa constrictor' tediously sleeping in a box rather than coiling around its prey and tightening its grip to suffocate the victim.[60] Accordingly, the gaps between their expectations and the reality that they recognized in the zoo encouraged

53 Saint Mars 1850.

54 54. Bishop 1854.

55 Burt 2002: 260.

56 The mortality of large carnivores was, however, alarmingly high. [Broderip] 1836: 318–19.

57 The arrival of the first four giraffes together at the zoo stirred public sensation in 1836. A Naturalist 1836.

58 Both anteaters and hippopotami were highly popular animals in the early 1850s. The society was eager to collect those animals as they had a charm of novelty. BL, Add. Ms. 50,849I: ff. 80–81, Yarell to Charlesworth dated 1 January, 1852.

59 Monkeys were described in many of the diaries and letters of individual visitors. See, for example, Anon. 1838, 134; London Metropolitan Archive, ACC/2042/002/1, Journal of Sophy Shirley Codd, 1835–36: f. 2.

60 Hunt 1836: 482.

some, like Leigh Hunt, to suspect that the zoo did not let its animals reveal their original characters, and thus distorted 'animated nature'. The boundaries that the zoo drew between humans and animals were not firmly established. Therefore, the zoo evoked and received various reactions, and thereby became a place in which further reflections would arise.

Conclusion

Based on a case study of the London Zoo, this essay has explored how the geographical transformation of London influenced popular sensibilities about animal life, and how this in return affected the placement and removal of different 'animal spaces' in the city. As a site of animal spectacle, the zoo was not the first kind, but it increased the significance of animal spectacle within London's changing urban geography. The zoo largely owed its success to its location in Regent's Park, and to its identity as a scientific institution. In addition, the emergence of the zoo can be linked to other changes, such as the removal of the livestock market, which took place simultaneously in the city. The impressions that the zoo provided better living conditions for its inhabitants relied upon analogy and comparison with a range of animal spaces from menageries to overcrowded streets and livestock markets. The discourse of sanitary reform served to produce a cognitive frame within which such comparisons and analogies were made. Thus the zoo was not isolated from other areas of human-animal interactions. All the same, it was unique because of the way in which it opened up a space for emotional communication concerning human-animal relationships. As illustrated by the reactions of many observers, not least by Leigh Hunt, different ideas about human-animal relationships poured into and out of the zoo. It did not strictly enforce any ideological views of the animal universe, but rather allowed for diverse responses. This was the zoo's strength when it had to survive and make best use of the geographical transformation of the city.

Chapter 8
Fowls and the Contested Productive Spaces of Australian Suburbia, 1890–1990

Andrea Gaynor

Fowls (*Gallus gallus domesticus*) were once abundant in Australian cities and suburbs, where many households kept a small flock of backyard hens and small-scale poultry farms were relatively common. Such was their ubiquity, hens even gained a place in the Australian vernacular and from the early twentieth century were widely known as 'chooks'. However, over the course of the twentieth century, fowls were progressively deprived of their economic, cultural and spatial niche in Australian residential suburbs and the egg and poultry meat requirements of city-dwellers were instead produced by birds housed in large-scale peri-urban or rural commercial batteries and barns. This reconfiguration dramatically altered the experience of fowls as a species in Australia and impacted on suburban ecologies. It resulted primarily from the pursuit of class-based visions of ideal cities and home environments and the embodiment of these visions in local by-laws, but also involved shifts in the economic organization of households and the egg industry. The decline of the suburban chook was therefore not a consensual or 'natural' outcome of urbanization, but occurred within specific sets of power relations, and was often contested. Here these issues will be examined firstly through an account of the changing suburban niches occupied by fowls; changes that will then be explicated in terms of the visions and struggles of the cities' human inhabitants. My focus is on two Australian cities: Perth, the isolated and expansive capital of Western Australia, and Melbourne, the more populous and cosmopolitan capital of Victoria; some examples are also drawn from Sydney, the capital of New South Wales.[1]

The extent of poultry-keeping in Australian cities may be gleaned from a range of statistical sources. The late nineteenth-century statistics are detailed, such was the scale of the settlements and the interest in measuring their progress. In 1881, there were 18,132 fowls living in the Perth and Fremantle Magisterial Districts – almost two birds for each of the Districts' 9,955 recorded persons. Ten years later, the human and fowl populations of the Districts were 16,694 and 28,372 respectively, representing a marginal decline in the ratio of fowls to people.[2] Perth was the smallest Australian colonial capital in 1881; Melbourne was the largest.

1 This chapter draws on and extends the earlier discussions of research findings in Gaynor 2001, 2006.

2 *Census of Western Australia* 1881.

With a total human population of 260,686, Melbourne was also home to 282,305 fowls – just over one per person. Assuming one owner of poultry per dwelling, just over one-third of all households kept poultry of some description. In this era there is a clear inverse relationship between the density of the human population and the proportion of poultry-owning households: for example, in the Melbourne suburb of Brunswick, with 2.3 persons per acre, approximately 63 per cent of households owned poultry; in Melbourne city, with 13 persons per acre, only 21 per cent did so.[3] The comparison between Melbourne and Perth in 1881 suggests a similar relationship, with more fowls per person overall in Perth, a smaller settlement with a more sparse human population.

By 1933, when a 'poultry census' was held in Victoria, there were almost 900,000 fowls kept by over 40,000 poultry-keepers in Metropolitan electorates.[4] Assuming only one poultry-owner per household, this figure represents approximately one in six households.[5] This may represent a slight underestimate, as the census was taken in autumn, when older birds may have finished laying and been despatched, but in any case the actual figure is unlikely to have been above 21 cent – already a large decline from 1881. The vast majority of owners had flocks of fewer than 100 birds, though 35 owners had flocks of more than 1,000 fowls. This may explain why the ratio of fowls to people, around 0.9 in 1933, had fallen to a lesser extent than the proportion of households keeping poultry, when compared with 1881.

The next official assessment of household poultry-keeping comes from 1963, when the Western Australian Health Department estimated that between 17 and 25 per cent of Perth households were keeping poultry; anecdotal evidence suggests that even fewer did so in the 1970s.[6] Certainly by 1992, when Melbourne had grown to a city of 3.2 million, and Perth to 1.2 million, an Australian Bureau of Statistics survey on home food production revealed that only between 4.5 and six per cent of Perth households, and 2.5 and four per cent of Melbourne households, kept any poultry. Although the figures are not precise, the pattern is clearly one of marked decline in the proportion of households keeping poultry, starting earlier in Melbourne, and later in smaller, lower-density Perth.

It is tempting to see the decline of suburban fowls as a 'natural' response to urbanization, as those of us living in the Global North at the beginning of the

3 Figures are derived from Statistical Register of Victoria for the Year 1881, Part VIII – Production, *VPP*, 1883, vol. 2, no.9, which gives the number of owners of livestock per municipality, and the *Victorian Year-Book 1880–81*, which gives the population and number of dwellings per municipality.

4 Department of Agriculture, VPRS 10163/P3, Central Admin. Correspondence files, Box 261, Statistics – Poultry 1942–1964, Public Records Office of Victoria (hereafter PROV),

5 Using the census figure of 229,464 occupied private households (including tenements and flats) in metropolitan Melbourne.

6 Registration for poultry, pigeons, *West Australian: West Suburban Section* 21 February, 1963: 1. On the decline of poultry in the 1970s see Gay McNamara, Chooks scratch their way back, *West Australian* 30 November, 1998: 5.

twenty-first century tend to class them as 'farm animals' and understand their location as properly rural. Certainly urban density has a direct bearing on the prevalence of poultry, insofar as opportunities for conventional poultry-keeping are physically limited in higher-density cities. Therefore, in the early days of urbanization, the proportion of fowls to people would decline in the absence of regulation, as it became impractical for people living with access to very little or no private open space to keep poultry. However, after a period of urbanization the density of Australian cities levelled off such that in Melbourne, for example, the human population density in 1881 was 6.2 persons per acre and by 1991 it had increased only marginally to 6.8 persons per acre.[7] Urban density alone therefore cannot explain the decline in household fowls. Rather, it was the outcome of a specific history involving changing economies, and cultural values and visions.

How, then, did fowls occupy suburban spaces, and what material transformations did they effect? In the late nineteenth century, suburban fowls might have been fed a mash of bran and pollard and perhaps some scattered whole grains – both imported from rural hinterlands – though kitchen waste and table scraps often comprised a significant part of their diet: in 1900 one Perth health inspector noted that 'All kinds of vegetable and house refuse is thrown usually into the yards for fowls to pick over'.[8] They converted these foodstuffs to eggs with varying degrees of efficiency, and when their laying days were over they went into the pot. Housing was often rudimentary, constructed from scrap wood and metal; some birds were left to roost in a backyard tree. Letters written by neighbours of poultry-keepers to complain about fowls roaming the streets, now preserved in local government archives, provide evidence that fowls often ranged freely in backyards and beyond.[9] There they would eat plants and insects and worms in addition to any feed provided. Old kerosene and meat tins often found a second life in fowl runs as food and drink containers; lime and ashes were commonly used to prevent pests and odours. Some suburban poultry farms combined fowl runs with orchards, where they could provide manure as well as pest control for the trees.[10] At this time, poultry therefore played a role in usefully recycling a range of materials, with the end result being eggs and/or meat, as well as manure (which was often valued for use on gardens, but was also a potential pollutant).

As the proportion of households keeping poultry declined, so there were fewer fowls locally to recycle a household's wastes and provide them with eggs, meat

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7 *Victorian Year-Book, 1880–81*: 46–7, Roberts 2007: 727.

8 Medical Department, Acc 1003, AN 120/4 Unregistered files & Miscellaneous papers 1897–1901,General Matters, Box 28, State Records Office of Western Australia (hereafter SROWA).

9 See for example Perth City Council, Acc 3054 AN 20/5 (correspondence files), no. 284, 1907, Poultry – straying in streets, SROWA; also no 32, 1953, Poultry – complaints re. keeping of (1926–1946), SROWA.

10 For a photograph of this kind of arrangement see Lloyds Poultry Farm, Pennant Hills, 03/1911, Government Printing Office 1 – 32435, State Library of New South Wales.

Figure 8.1 Premier Poultry Farms, c.1930

Source: ID: 16753, Org ID J2.8, Coburg Historical Society. Available online at http://www.picturevictoria.vic.gov.au/site/coburg/chs/16753. html

and manure. In assessing the implications of this shift, a comparison with San Francisco is productive. When that city suffered an outbreak of plague in the wake of the 1906 earthquake and fire, authorities sought to combat the disease via a range of means including a 1908 ordinance requiring all chicken coops to be rat-proofed. Joanna Dyl has argued that this made poultry-keeping prohibitively expensive for most of the working poor with a sideline in poultry and eleven thousand of them were forced to dispose of their flocks.[11] This then created a market opening which supported the rise of industrial chicken operations in the greater Bay Area. Similarly, in Australian cities as household production declined (for reasons discussed below), commercial production increased and from the 1930s we see the emergence of mass production of eggs in large-scale farms housing thousands of fowls in large sheds (Figure 8.1). Like the Bay Area operations, these 'farms', with their neat and orderly arrangement of sheds (especially when viewed from the air), were promoted as the 'modern' way to produce eggs. Such operations reduced human labour but relied more heavily on imported and processed foodstuffs, entailed a greater need to transport inputs and products, and provided the fowls with environments and diets that were almost certainly less varied than those found in backyards.

11 Dyl 2006, 48.

Ideas about appropriate housing in the domestic context were also changing: in the 1950s, for example, *Your Garden* magazine informed readers that 'to keep [fowls] in the modern way – you must have an ultra-modern fowlhouse'.[12] Small-scale backyard battery cages were promoted as one of the two types of 'ultra-modern fowlhouse', being 'not only a machine in which to keep fowls, but … a machine which practically takes care of them'.[13] Fowls contained in such cages had access to automatically-dispensed water and pelletized food, but while these 'machines' reduced the work involved in managing fowls, they also reduced opportunities for recycling in feeding and housing them. It is telling that such devices were available to householders, reflecting the perception that at least some would be interested in adopting the 'modern' and efficient practices that were then dominating industrial egg production. However, there is no evidence to suggest that such backyard batteries were commonplace. Another form of 'ultra-modern' fowl house was the type stipulated in new model regulations drafted in Melbourne in 1969, which required all fowls to be kept in 'rat-proof' poultry houses complete with guttering and spouting leading to storm water drains.[14] Such houses were obviously more expensive and energy-intensive in their construction than the simpler and often improvised housing of an earlier era, and made poultry-keeping prohibitively expensive for some.

Depending on their management, then, fowls could potentially contribute to the degradation of local environments, and demand the importation of inputs from outside their immediate area, but they could also be a surprisingly good ecological 'fit' in low-density Australian suburbs, potentially recycling local wastes and providing nutrients for local gardens, as well as fresh eggs (and occasionally meat) for local residents. Over time, more resource-intensive but labour-saving modes of poultry-keeping were introduced, especially for commercial fowls; for most of the dwindling number of household fowls, the changes were less radical.

What, then, was the role of economic factors in generating these transformations? In the late nineteenth century, poultry-keeping was accessible to all but the very poorest. For example in February 1889 William Farrell, a West Melbourne man who worked as a casual labourer on cable tram lines, wrote in his diary that he 'Set the little hen in the coope [sic] today put nine eggs under her. I wonder how she will get on'. Three weeks later, 'The little hen had eight living chickens'.[15] Farrell's scattered and incomplete diary does not provide further insights into his poultry-keeping, though we can envisage the possibilities from other sources, in order to gain an insight into the economics of the venture. Farrell might have bought his hen from the Queen Victoria Market, where they were sold at four to

12 Smith, C.W. (1956) The right kind of poultry house need not be costly, *Your Garden* November: 62.

13 Ibid.

14 City of Brighton, VPRS 10430, Unit 58, no. 3324, Poultry Keeping, PROV.

15 Diary of William Farrell, 15 February and 8 March 1889, LaTrobe Manuscripts Collection, State Library of Victoria.

five shillings a pair. To buy them he most likely would have been saving for some weeks, as he earned only around seven to eight shillings a day when he had work, and he had a wife and seven children to support. He does not provide details of the coop's construction, though as we have seen, housing and facilities for feeding and watering the flock could be provided at little or no cost, if scrap materials could be found. Once a flock was established, costs involved the purchase of feed (prices varied, though for example in 1898 pollard could be bought at the Melbourne market for 1s. per bushel) as well as replacement stock.[16] If no rooster was kept, settings of fertile eggs could be purchased from breeders, and hatched out under a broody hen. If costs could be kept to a minimum, fowls appear to have had some potential to produce a 'sideline' cash income, and Farrell had little money to spare. If the flock was effectively managed, they might have earned the family a little under £3 per year if all eggs were sold, though in all likelihood, a lack of experience and resources would have seen a less profitable outcome.[17] If he did not keep any of the male chicks as a rooster, he could again buy or barter a setting of fertile eggs when it was time to replace older layers. William Farrell appears to have regarded his 'little hen' fondly, and the emotional elements of the keeping of livestock should not be ignored.[18] It is highly likely, however, that his fowl-keeping also had an economic dimension, as fowls had some potential to produce a 'sideline' cash income (even if this potential was not always realized). This potential, along with their portability (relative to, say, fruit trees), may explain why even though some middle- and upper-class households did keep poultry, they were most popular among working-class households, and remained so well into the twentieth century.[19] By 1919, the cost of eggs for an average household living in an Australian city was around two per cent of the basic wage, so the amount of money saved by keeping them would have been insignificant for middle-class

16 Commercial News, *West Australian* 26 May, 1898: 7. A bushel is a measure of volume, equivalent to approximately 36 litres.

17 This assumes that Farrell ended up with five hens, each laying 150 eggs and costing six shillings per year to feed [averages for well-managed small flocks, derived from Gordon 1908, 221], and that he was able to sell eggs at the prevailing market rate of 1s,6d. to 1s,8d. per dozen: Melbourne Markets, *Argus* 18 February, 1889: 10.

18 For a discussion of the significance of this element of urban animal-keeping, see Gaynor 2007.

19 This is confirmed, for example, by the results of the Melbourne University Social Survey. Carried out in 1941, the interviewers visited one in 35.8 dwellings in the central, western, northern and southern suburbs and one in 68.5 in the eastern and south eastern suburbs, asking questions relating to employment and income, family, tenure, travel between home and work, number of rooms, domestic cooking, washing and storage facilities, and garden layout and usage. The resulting forms reveal that the unskilled working class were most likely to keep poultry (16 per cent of all productive households), with the skilled working class less likely (at 12 per cent of all productive households), and the middle class less likely again (nine per cent of productive households).

households, but a useful contribution to those living in circumstances where every penny mattered; more so if eggs, chicks or meat were sold.[20]

Some hoped that their poultry-keeping would lead to stable self-employment. In the 1930s the *Australian Home Beautiful* magazine ran a series of articles on the increasing popularity of small-scale poultry-farming in the outer suburbs of Australian cities: in the context of high unemployment, it was attractive as a venture that could 'be begun in a suburban back yard, and from the outset yield valuable sustenance for the home in the shape of eggs and table poultry'.[21] Even in the 1940s, poultry held some attraction as a home-based enterprise, particularly for women and children with few viable employment alternatives. Some went in for meat production, at a time when chicken was regarded as a delicacy and commanded a premium price. Tot White, who lived in the inner Melbourne suburb of Fairfield in the 1940s and 50s, observed in 1999 that: 'chicken is so cheap now, but chicken was a delicacy, you were lucky to have a chicken. It was a big thing for Christmas or a birthday'.[22] One family who benefited from this tradition were the Grahams, who lived in the coastal Perth suburb of Cottesloe. In 1998, Jim Graham recalled:

> The chooks were started by my older brother when Dad died in 1939 as a result of injuries received during WW1. I took over a few years later. We were fully responsible for looking after them, and for all expenses. We were not paid for the eggs or poultry we used ourselves, and tended to make do with old hens (boilers) past their efficient laying age. The paying customers got the young roosters . We bought about one or two dozen chicks twice a year, seven to eight months before Christmas and Easter . From 1939, Mum was on a Repatriation War Widow's Pension, and we had to make every post a winner.[23]

Others tried to profit from eggs, though this was complicated by the introduction of controls on egg marketing during the Second World War. As Egg Boards were established in the various states, all poultry-keepers with flocks of more than 20 fowls were required to sell their eggs to the Board's agents at a centrally-determined rate, minus a percentage to support the Board's work in the orderly marketing of the eggs. This increased the price of formally-marketed eggs and 'backyarders' – believed to be mostly 'pensioners and workers'[24] – were able to take advantage of high black market egg prices.[25] An egg shortage in the first half

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20 Report of the Royal Commission on the Basic Wage, *CPP*, 1920–21, vol. 4, no.80.

21 R.J.M., How to start a poultry farm, II: the experiences of people who have tried it and discovered the essentials of success, *Australian Home Beautiful* 1 September, 1931: 13.

22 Tim and Tot White, interviewed by the author, 20 July, 1999, tape in author's possession.

23 Jim Graham, email to the author, 29 September, 1998.

24 *WAPD*, 5 December 1945: 2465–6.

25 Ibid: 2462.

of 1945 led to the implementation of an 'Egg Priority' rationing scheme, and good returns for producers. However, some argued that even under these conditions, 'backyarders' were doing well to profit from a poultry sideline: in debate over the Western Australian Marketing of Eggs Bill in 1945, one Member claimed 'that eggs obtained by the owner of the ordinary backyard property which has only 20 fowls cost about 6d. each to produce, because those people are not experts at egg production'.[26] In that year, a dozen eggs sold for 28d. at best.[27] The dubious profitability of small-scale poultry operations is also reflected in some of the forms completed during the Melbourne University social survey in 1941. One household in Northcote was spending 5s. per week on feed and receiving the same amount in return for the eggs.[28] Another Northcote household found their 24 laying fowls were generating more expenses than income.[29] One woman living in a 'terrible galvanized iron shack' in Braybrook told the interviewer that her husband was a poultry farmer but 'the Egg Board finished him', and he subsequently enlisted.[30]

Most of the remaining 'backyarders and side-liners' were forced out of the industry in the late 1950s, as regulation of backyard operations increased in many areas, and diminishing profit margins saw producers scrambling to achieve greater economies of scale, achieved in ever-larger battery hen and broiler shed operations, usually on the outskirts of metropolitan areas.[31] The increasing scale and mechanization of production across the food system in the postwar era also (except in times of fuel or land shortages) lowered the cost of food for consumers, reducing the potential proportion of income freed-up by self-supply of eggs, and so one motivation for keeping fowls.

The availability of labour was another economic factor in the changing patterns of poultry-keeping. Although there was no very clear gendered division of the work involved in keeping household fowls, women and children were very often responsible for daily care tasks. As married women's workforce participation increased in the postwar era, this may well have further reduced the already dwindling number of suburban poultry-keeping households: instead of staying home and undertaking unpaid household tasks and informal paid work, women were entering formal employment in greater numbers, with many

26 Ibid.

27 *Statistical Register of Western Australia for the year 1944-45*, Part XII, p.5.

28 Prest Social Survey form, Box 14, Municipality 18 (Northcote), Melbourne University Archives.

29 Ibid.

30 Prest Social Survey form, Box 21, Municipality 28 (Braybrook), Melbourne University Archives.

31 Department of Agriculture, VPRS 10163/P3, Central Admin. Correspondence files, Box 197, Poultry – Industry Part 3 1956–1964, PROV. In the late 1950s, British subsidization of their poultry industry led to the loss of that market for Australian producers, and a subsequent crisis of overproduction. More money was spent by egg boards on grading and marketing of eggs, and their deductions increased accordingly, which is why greater economies of scale were required.

effectively 'outsourcing' some of the work they had previously done, for example to commercial kitchens and cleaners, as well as egg farms. This perhaps partly accounts for the different responses of Jim Graham's family and Gladys Heedes', to the loss of their breadwinner. Gladys Heedes was born in Perth in 1939, the same year that Jim Graham's father passed away. Gladys' family had kept poultry for as long as she could remember, but when her father passed away in 1961, the fowls were let go:

> We stopped having chooks because my Dad died and my Mum had to work to support me, and it was just one more thing that as the chooks got older and died off we thought 'we can't cope with this any more', because you've got to reduce what you can do.[32]

Although economic factors certainly played a part in the decline of suburban household poultry and the rise of the peri-urban factory fowl farm, another very significant explanation lies in the broader cultural context, and in particular, middle-class visions of ideal cities and home environments, pursued in part through regulation at local government level. As Chris Philo has argued in relation to the exclusion of large livestock animals from London and Chicago, this process involved the coding of animals within medical and other discourses as 'impure, polluting, disruptive and discomforting occupants' of urban spaces.[33] Fowls were identified as problematic a little later than the larger animals, but were subject to similar processes of coding within emerging ideas about nature and the city.

In Australian cities from the mid nineteenth century, food production was widely seen as a symbol of the self-reliance or 'independence' that dominated the hopes and dreams of countless middle class and 'respectable' working class immigrants to Australia. Many suburban food-producers also identified – more or less consciously – with the figure of the yeoman farmer, though he was less a real figure than a convenient package for a bundle of ideals tied to the social and economic circumstances of the colonies: imperial economic relations saw the production of food and other raw materials applauded as a national good; rural work and lifestyles were widely seen as a remedy for the perceived ills of 'urban degeneration'; finally, the yeoman was his own boss, independent of the relations of capitalism, and largely self-sufficient. Graeme Davison, in *The Rise and Fall of Marvellous Melbourne*, asked '[w]as the yeoman dream of five acres and a cow realized in a quarter-acre block and a pen of chooks'?[34] Certainly, the vision of an idealized suburban yeomanry initially included livestock and poultry. However, these animals soon fell from favour, and were targeted by a growing and

32 Interview with Gladys Heedes, by the author, 23 October, 1998. Tape in author's possession.

33 Philo 1998: 66.

34 Davison 1978: 185.

increasingly stringent body of by-laws specifying minimum housing requirements, or prohibiting them altogether.

Regulatory activity appears to have intensified in three main waves: the late nineteenth to early twentieth century, the mid-1920s to 1930s, and the 1960s. Each of these roughly followed periods of suburban expansion, in which a significant number of suburbs were moving from a 'pioneering' phase to a more settled one, in which residents and Councils were concerned with shaping the character of their suburbs for the future. The principal creators of regulations relating to the keeping of animals were the middle class men who dominated municipal councils, so we need to look to middle-class interests and values, especially in each of these periods, to establish their motivations.

It is in the early twentieth century that the first poultry-related prosecution in Perth took place. On 10 January, 1901, one Mrs Stewart was convicted in the Perth Police Court of 'creating a nuisance in the Keeping of Poultry', in a case that was 'practically undefended'. Mrs Stewart, carrying out what the Chief Health Inspector implied to be common practice, was probably quite taken aback by the absurdity of being prosecuted for keeping poultry, let alone the hefty fine of £2,3s. The case was brought under the general nuisance provisions of the *Public Health Act 1886* (WA), and no doubt set a precedent for the inclusion of poultry in efforts to abate nuisance from animal-keeping. Previously, poultry seem to have been exempt from regulation, perhaps partly due to a tendency to class them apart from mammals. For example, in nineteenth-century regulations relating to slaughter-houses, 'animals' referred only to mammals such as sheep, cattle, goats, and pigs – a formulation echoed in the *Health Act 1911* (WA), which consistently refers to 'the keeping of animals or birds'. In Melbourne, poultry had been prohibited from urban parks and reserves since 1872,[35] but by the late 1880s, poultry-keeping householders were being prosecuted under the general nuisance provision introduced in the *Public Health Act 1883* (Vic).[36]

Mid nineteenth century public health legislation was strongly influenced by the miasma theory of disease, which held that decomposing matter generated smells or gases which either caused disease, or weakened human bodies so as to make them susceptible to disease. Legislation therefore targeted environments that were unpleasant or offensive, particularly with regard to their odour. However, 'offensive' was so broadly defined as to allow issues of amenity to come under the scope of such Acts: those environments that contained visually or aurally 'offensive' elements might also be deemed 'nuisances' requiring abatement, with those responsible liable to be prosecuted and fined. In Western Australia, nineteenth-century definitions of 'nuisance' remained a pillar of public health legislation in the twenty-first century.[37]

35 *Government Gazette of Victoria*, 1 March, 1872: 460.

36 See, for example, Prosecutions under the Health Act, *Argus* 28 May, 1889: 7.

37 *A New Public Health Act for WA*, Department of Health, Government of Western Australia, 2005: 38.

Concern over amenity grew around the turn of the century, as middle class town Councillors were increasingly swayed by determinist arguments for the improvement of urban environments; that is, they believed that the quality of an environment shaped the character of those who lived in it. This belief was reflected, for example, in Sir William Lever's dictum: 'Surround a home with slums and you produce moral and physical weeds and stinging nettles. Surround a home with a garden and you produce the moral and physical beauty of the flower and the strength of the oak'.[38] Accordingly, Councils sought to create quiet, tree-lined streets with tidy verges and footpaths, and pleasant front gardens. Where fowls crowed, cackled and roamed the streets, scratching up plants and paths, they disrupted these efforts at 'beautification' of suburban landscapes, potentially promoting disorder among the suburb's human inhabitants.

The *1898 Health Act* (WA) reflected the general suspicion of poultry on amenity grounds, as distinct from those of health, in its provision 'That all fowl yards shall, *if possible and where necessary for health*, be at least 25 feet from any dwelling house'.[39] The inaugural health by-laws for the new suburb of Maylands, gazetted in 1903, went further still, removing the reference to the preservation of health and increasing the allowable distance between poultry and people, thereby removing the potential for those with small lots to keep poultry, even in a sanitary condition:

1. No person shall keep any premises as a poultry-yard at a less distance than 30 feet from any building.
2. Every poultry-yard shall be kept in a clean condition and disinfected at least once a week with lime, ashes or other suitable disinfectant.

This trend was soon firmly established, and suburban fowls faced an increasingly uncertain future.

From the mid-1920s, a 'modern outlook' comprising an urban, cosmopolitan, modish set of tastes arose in Australian cities. It was the cultural accompaniment to changing forms of economic development, as the Australian economy gradually moved away from its traditional reliance on wheat and wool, and manufacturing and commerce increased in significance.[40] As such, this outlook associated the city with modernity and the future; the country with heritage and the past. It included

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38 This was quoted in a booklet containing the constitution of the Town Planning Association of Western Australia, c.1916: Town Planning Association of W.A., Acc 641A, Minutes of Meetings: 31 March 1916–24 April 1929, SROWA.

39 *Health Act* (WA) 1898, s.173. My emphasis.

40 White 1981: 148–51. Don Slater has also argued that at this time, 'consumer culture itself was dominated by the idea that everyday life could and should be *modern*, and that to a great extent it already was'. Slater 1997: 12, Connell and Irving 1980: 200. I use the terminology of 'modern outlook' here to distinguish what may be seen as a form of more-or-less popular modernism from the various other uses of the term.

forms of modernism in design, including architectural and interior design, but was also reflected in changing tastes in clothing, appliances, leisure, and food. Some saw fowl runs as compatible with this 'modern outlook' (for example, well into the 1930s, designs for ultra-modern houses and gardens appearing in magazines might incorporate vegetable plots and poultry runs).[41] But complaints preserved in council archives suggest that many suburban residents believed 'modern' suburbs should not look, smell or sound in any way like the 'country'.[42] Furthermore, eggs could now be produced in a modern way, in large-scale farms located outside the cities, and improving supply chains would bring them fresh to consumers.

The 'modern outlook' gave a fresh impetus to Councils' efforts to exclude fowls. By the 1920s, many Sydney municipalities had proclaimed regulations prohibiting the keeping of poultry within 25 feet of a dwelling. The Health Officer of the Sydney City Council proposed a similar regulation in 1920, in order to deal with the 'many small yards in the City in which poultry are kept', but it was rejected by the Council. He tried again the following year, 'in view of the impossibility of keeping premises reasonably free from rats, and the general nuisance from fowls in the city', this time with greater success.[43] In December 1925, the City of Perth banned the keeping of poultry in the inner city altogether, with the City of Fremantle following their example a few months later.[44]

In this period the increasing tendency to regard fowls as interlopers in the suburbs may also be read as evidence of a changing understanding of nature, at least among the middle class. At the same time as interest in the preservation of a dehumanized 'wild' nature for contemplation and spiritual revival was growing (for example, in the bushwalking movement),[45] urban citizens were to be insulated from nature as material necessity. Maria Kaïka has described the way in which the independence, comfort and familiarity associated with 'home' and the domestic sphere was only made possible through processes of excluding or making invisible unwanted social and natural 'others' – from criminals and unwanted visitors to dust, rain, smog and sewage. Public health legislation played a role in this broader process of exclusion. However, homes constructed in this way continued to rely not only on the social and ecological relations they obscured, but also on the admission of certain forms of controlled, commodified nature, including water, light, and food. Thus, as Kaïka writes:

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41 See for example a design from *The Home Beautiful* reproduced in Shum 1939: 21.

42 See for example Perth City Council, Acc 3054, Correspondence Files, no.32, 1953, Poultry – complaints re. keeping of 1926–1946, SROWA.

43 Town Clerk's Correspondence Files, 404/1920 and 4237/1921, series 34, Sydney City Archives.

44 *Government Gazette of Western Australia*, 24 December 1925: 3101, 9 April 1926: 755.

45 Hutton and Connors 1999: 61–78.

> although the modern home is ideologically constructed as independent and *disconnected* from natural processes, its function is heavily dependent upon its material *connections* to these very processes which are mediated through a series of networks and social power relations.[46]

Kaïka constructed her argument with reference to water and its metabolism in cities, but it is also pertinent to food-producing animals. In the case of water, nature was to be admitted to the home in controlled, commodified form, through a mystified infrastructure. Food, too, was to arrive on suburban plates via systems of distribution that concealed the workings of abattoirs, dairies and poultry farms, and insulated suburban residents from unsettling encounters with the animals from which their food was extracted. In targeting productive animals, public health legislation and associated regulations facilitated this reorganization of food systems.

In the 1960s, which is when the next 'wave' of regulation took place, the 'modern outlook' re-emerged as a force shaping ideas about appropriate locations and methods of food production. As the expansive working-class suburbs established in the immediate post-war decades emerged from the pioneering phase and sought an identity, they turned to a vision of suburban modernity that entailed more of a focus on leisure, mobility and consumption: cars, caravans and supermarkets were championed, and while food production in the form of fruit and vegetable gardening continued, the keeping of fowls was further discouraged or prohibited. In Western Australia, for example, the Health Department in 1963 produced model by-laws that specified minimum requirements for poultry housing and imposed a five shilling registration fee for poultry keepers. These regulations did not aim to make poultry-keeping safer but to eliminate it altogether: Commissioner of Public Health W.S. Davidson openly declared his hope that 'the expense of making poultry pens comply with the new by-laws will discourage people from keeping poultry in their backyards'. He further suggested that local Councils 'specify areas where poultry may not be kept so there will be no disturbance'.[47] His language reveals the way in which middle-class professionals had come to regard backyard poultry as unwelcome intruders in a modern city, more disturbing than the noise and pollution emanating from cars, motor mowers, or other elements generally accepted as part of the urban scene.

Gladys Heedes, in suburban Perth, remembered this period as one in which 'people started moving in to newer houses where there were stricter regulations about where you could put chook yards and where you couldn't'; Charlie Wilson,

46 Kaïka 2004: 275.

47 Registration for poultry, pigeons, *West Australian, West Suburban Section* 21 February, 1963: 1.

also in Perth, was one of those who gave up poultry-keeping when the new regulations came in.[48] Similarly, in Melbourne, Tot White recalled that:

> Everyone seemed to have chooks, but … then I think the Council put a stopper on it, because they said you could only have so many chooks, and you had to have better pens and all that for them, so I think that stopped a lot of it too.

Tot and her husband, however, also gave the fowls away in this period because they bought a car and spent their leisure time 'driving around'.[49]

Poultry-keepers resisted regulatory measures at every juncture. For example, one pensioner in the inner Sydney suburb of Darlington, faced with the loss of his poultry just before Christmas 1933, returned his notice to sender marked 'no such number'. Unfortunately for him, when it arrived back at Town Hall, he was promptly served another, in person.[50] A more high-profile example comes from 1930, when the neighbours of one Mr Ferguson of Brisbane took him to court to get an injunction preventing him from keeping roosters. This being granted in the Supreme Court of Queensland, Ferguson appealed to the Full Court of the Supreme Court and won, upon which his neighbours took the matter to the High Court of Australia.[51] When considered at such a high level of abstraction, removed from the local context, the right to keep a rooster was preserved. Evidence of other acts of resistance is preserved in local government archives.[52] Perhaps most telling is the fact that today roosters can still be heard here and there as dawn breaks in Australian suburbs, although in most areas they have been prohibited for decades. A small renaissance in suburban poultry-keeping began in the 1990s; that it arose alongside high-profile public debate over issues such as food miles and recycling wastewater for domestic water supplies suggests that a growing number of urban residents were prepared to reject the prevailing obfuscation of their relationship with the 'nature' on which they depend.[53] Although today only a small minority of

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48 Interview with Gladys Heedes, by the author, 23 October, 1998. Tape in author's possession; Interview with Charlie Wilson, by the author, 22 September, 1998. Tape in author's possession.

49 Interview with Tim and Tot White, by the author, 20 July, 1999. Tape in author's possession.

50 Town Clerk's Correspondence Files, 5161/33, series 34, Sydney City Archives.

51 RUTHNING Valerie Emilie Marianne and others versus FERGUSON Thomas Tarran, Full Court and Court case records (QLD), A10040, 1930/1, National Archives of Australia, Canberra.

52 See for example the stalling techniques employed by Mrs Fairlie in Perth City Council, Acc 3054, Correspondence Files, no 98, 1913, Poultry yard – rear of 849 Wellington St – Mrs M. Fairlie, SROWA.

53 Jane Edmanson, Chooks in the backyard, *Gardening Australia* July 1997, 32; Gay McNamara, Chooks scratch their way back, *West Australian* 30 November, 1998: 5.; Quentin Chester, Return of the chook, *Australian Geographic* 82 (April-June 2006): 89–95.

Australian backyards are home to fowls, these birds are testimony to the failure of the quest to eliminate them from the city.

In Australian cities, the decline of household fowls meant that less urban waste was being converted into eggs for local consumption; less local manure was available for gardening; and more people acquired their eggs and chicken meat from more distant batteries and sheds and longer retail supply chains (and the infrastructure they required). These changes cannot now be quantified, but they are nonetheless significant, both as parts of a much bigger picture of urban metabolic change, and as an example of the ways in which values and power may be materialized in the environment. The movement of fowls from backyard to battery was not an inevitable outcome of urbanization, especially in Australian cities, as most people lived (and still live) not in apartments but in detached houses with backyards where fowls could reasonably be kept. Economic factors relating to the cost of food and women's labour are relevant to the shift but can only partly explain it, particularly as household production of fruit and vegetables remained popular in Australian suburbs.[54] A very significant part was also played by regulatory regimes reflecting particular class-based values and visions. These involved, firstly, ideas about amenity and its impact on human health and morality, and then visions of 'modern' suburbs and subjects: in order to create the modern, independent, and comfortable domestic settings desired by urban middle-class populations, the actual conditions of their dependence on the processes and cycles of nature had to be concealed. Arguably, this was especially true of those elements involving animals, or evidence of our own 'animality' (such as sewage). Thus the urban middle class, acting as the vanguard of metropolitan modernity, wanted eggs and poultry meat to reach suburban tables without the conditions of their production touching residents of the modern city.

In Australia, at the same time as these parts of human interaction with non-human nature were being hidden from urban residents' view, 'nature' was increasingly understood as something to be encountered through recreation, whether as an intensively managed 'second nature' of suburban parks and gardens, or a more 'wild' nature contained in reserves and national parks. These dual ways of managing encounters with nature may have made life more comfortable for urban residents, but they achieved this by distancing us from the conditions of production of our food, and the implications of its consumption. In the 1970s this distancing was questioned by some environmentalists who sought to pursue 'ecological lifestyles'; from the 1990s the 'food miles' and city farming movements also challenged such obfuscation. However, the majority of urban-dwellers arguably remain disconnected from the problems of ethical and sustainable food production, which are comfortably out of sight, out of mind, while 'nature conservation' successes give the impression that we have become responsible environmental stewards.

54 See Gaynor 2006: 160.

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Chapter 9

Between the Muzzle and the Leash: Dog-walking, Discipline, and the Modern City[1]

Philip Howell

> Rather than attempting to find a new metaphor, then, what I think is necessary is a relocation of the ways in which we live with animals on a day-to-day basis.[2]

Introduction

Does *dog walking* have a history? The question sounds a rather too simple one, and I am aware that it invites accusations of tweeness, frivolity or triviality. It might also seem utterly invalidated by the antiquity of the phenomenon: literally as well as symbolically, dogs and humans have walked together down through the ages, from the start of animal domestication to the present day, and their relationship has long been a matter of concern for anthropology and evolutionary biology.[3] But, taking our cue from the still relatively recent concern for the cultural history of animals, we might consider whether dog walking can be seen as a distinctively *modern* practice, linked to the more recent history of 'domestication' in which the practice of pet keeping is inextricably enmeshed: something too that has developed under particular conditions, the result of certain struggles, and installed in specific sites.[4] Nor is this just an historical thesis, for we can further suggest the possibility that walking the dog is a distinctive type of *spatial* practice, and that the acknowledged modernity of the 'walking city' be expanded to include the possibility of the creation of a 'dog-walking city', in which humans and dogs were allowed and indeed eventually encouraged into social and public space together.[5]

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1 This paper was initially conceived and presented at the Association of American Geographers Conference in Chicago in March 2006, for the 'Hudographies: co(a)gent spaces of companion species' session organized by Craig Young, Manchester Metropolitan University. I am very grateful to the organizers, co-presenters and contributors.

2 Fudge 2002a: 12.

3 An excellent introduction to the history of dogs, taking in a number of disciplinary viewpoints, is Serpell 1995.

4 For this kind of 'domestication', see Anderson 1997. On dog-walking as a practice, note the phenomenological approach taken by Laurier, Maze and Lundin 2006.

5 By 'walking city' I mean not so much the compactness of the eighteenth and early nineteenth-century city, to which the term is sometimes attached, but the urban experience and forms of resistance predicated on the rhetoric of walking explored, most famously, by De Certeau 1984.

Beginning then with a stolidly literal-minded interest in the daily practice of walking the dog, we may find a revealingly different way in to the abstract realms of modernity, the contemporary metropolis and its public sphere.

For all the narrowness and naivety of this topic, the history and geography of dog walking is both too obscure and too general to be covered in a short chapter. I want therefore to proceed by way of a simple thesis. This concerns the attempts to discipline and control dogs, amongst other animals, in metropolitan public space in modern times, the development of ideologies and technologies that sought to tame the presence of non-human animals in the supposedly pristine human world of the city. In the following section I focus very briefly on the problem of stray and uncontrolled dogs in the nineteenth-century British city, the expression and icon of an undisciplined public sphere, and thus the targets of intervention, discipline and control. This formulation fits in with the influential commentary, particularly endorsed by the 'animal turn' in Geography, that charts the restriction of animals to particular spaces and places, under specific restraints and categories of existence, symptomatic of the modern, Western culture of nature.[6] This is a compelling and generally persuasive thesis, but I want to go on to nuance, and in part challenge, these coercive and disciplinary readings of the modern social construction of nature. This chapter does this by contrasting two moments in the history of animals' access to public space in Victorian and Edwardian London, which I will use to represent two kinds of approach to the problem of the public dog. One – the history of the call for dogs to be muzzled in public space, particularly under the fear of rabies – I want to label as classically *disciplinary*. The other – for which I take the dog lead or leash as an emblem, I take to be about the opening up of public spaces for dogs and their owners – and we can address this I suggest in terms of *regulation* or 'governmentality', again to make use of Foucauldian terminology. Both are related, of course, but whilst the first forwards overt control, and is directed by the tenets of medical and moral policing, the second is, in disciplinary terms, rather more clearly about the conduct of conduct, operating through a model of the responsible pet owner rather than directly on animals themselves; and, in a more positive spin, this is also about the creation of spaces and environments in which particular behaviours are positively encouraged and even celebrated. This argument and policy may be seen as liberal, perhaps even classically so, in its focus on the creation of responsible subjects, whose rights and liberties must be entrenched and respected.

This is not an unproblematic contrast, I accept, and it is certainly not a matter of control *versus* freedom, of 'bad' medical muzzlers *versus* 'good' dog-loving liberals; it must be stressed that liberalism and its geographies operate via conditional and regulated freedoms.[7] But the thesis of the disciplining of animals in the city may at least be complemented by a different story about animals – in this case, pet dogs – becoming, eventually, accepted as part of the city and its

6 For the 'animal turn' the essential starting points are Wolch and Emel 1998 and Philo and Wilbert 2000. An excellent recent paper that enlarges the field is Hobson 2007.

7 See, especially, Joyce 2003.

modernity. In time, the human being and the dog, connected to each other by the lead or the leash, would become normalized, and most traces of the struggles over the dog-walking pair disappear as if they had never existed. At this stage we may say that a 'dog-walking city' had appeared, the result of a certain compact or dispensation – between humans, but also between humans and dogs, and the modern society they have both helped to create. It is, perhaps, no more than a century or so old.

Dogs, Discipline and Modernity

Prominent in the discussion of the place of animals in the modern city are the themes of exclusion and inclusion, of isolation, enclosure and segregation, occlusion, surveillance and control.[8] Animals did not of course disappear: they were, inevitably, a constant presence in the industrial city, and in important cases such as that of the horse, an increasingly common and vital one: these animals' existence in the city, and the dependence of human society upon their labour and their bodies, could hardly be denied, even by the most committed anthropocentrists. Yet, we may argue, animals found themselves increasingly restricted as to what they could be and where they could be, how they could behave and how they could be treated, viewed and understood. Zoos found the right place for 'wild' animal nature, for instance, reinforcing the cultural point that 'wildness' was not something that was supposed to exist in the public streets, but paradoxically charging this exotic and indeed imperial sensibility with homely aspirations and domestic sentiment – melding intimacy with distance.[9] Animals destined to become meat, were similarly assigned their place, directed to the new slaughter-houses and stockyards; their messy animality and the presumed beastliness of their butchers were increasingly zoned out of the heart of the modern, civilized metropolis.[10] Concerns for public order and the proprieties of the public sphere, operating through class, gender, and cultural registers, regulated animals' lives via moral geographies that mapped out, in addition to appropriate areas for different kinds of humans, proper places for their non-human animal companions. Sometimes this resulted from a self-conscious animal advocacy that subjected animals' human oppressors to regulation and prosecution, but the effect was, often enough, the same kind of compartmentalization and marginalization. Dogs in the city might best be accepted as pets, for instance, rather than beasts of burden, but the banishing of working dogs in the streets ensured that the pet's place, like the woman's, was in the home; dogs' presence in the public sphere became all the more suspect when a domestic hearth was assigned to them.[11] The RSPCA's

8 See Philo 1998.

9 See, for instance, Jones 1997, Anderson 1998.

10 Philo 1998: 58–65; see also the discussion in Donald 1999.

11 For dog carts as the principal example of the working dog, see McMullan 1998 and Kalof 2007: 141–2.

initial public preference for policing cruelty in the streets rather than interfering with the privacy of the home was another marker of this moral geography of concern.[12] The classification and restriction of pets is arguably the most interesting of these developments: as petkeeping was established as a more than a luxury pursuit, pets were domesticated, denaturalized, even bourgeoisified: in short, 'A home was the dog's proper place'.[13]

The association between these various developments and the progress of discipline and disciplinary modernity is tempting, even if Foucault's anti-foundationalism is as starkly anthropocentric as his humanist opponents, and therefore distinctly unencouraging to the philosophical and political question of the animal.[14] Even if it is possible to put the matter too starkly, as does Michael Watts when he writes that 'one might say that the relation between animals and modernity can be construed as a gigantic act of *enclosure*', there is no question that animals (and their owners) were increasingly subject in modern times to disciplinary imperatives and initiatives.[15] We can certainly agree with John Walton's observation that 'From mid-Victorian times, and increasingly in the late nineteenth century, the uncontrolled urban dog came to be perceived as a serious problem'.[16] As the *Times* expatiated: 'we feel strongly that in town life dogs introduce an element, which, for their own sake, should be brought under strict control'.[17] And Patrick Joyce has recently written that

> the vitalization of the city … involved the conscription of the animal world, so that this world was humanized and involved in similar disciplinary routines to the human one … The undisciplined subject had an undisciplined dog, the disciplined one a pet. The pet was social, the dog remained in the natural world.[18]

There is not space here to do more than gesture at this complex history and geography, but there is no better representation of this modern concern with the undisciplined dog than in the life-long canine commentary provided by Charles Dickens's novels and journalism. Dickens's fiction – particularly the early novels, it should be said – presents on the one hand a host of errant and undomesticated dogs, denizens of the rookeries or of the highways, all somehow out of place. To ape Mayhew, we might divide these canine types into dogs that will work (such as the circus dog Merrylegs and his fellow street and public performers), and those

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12 Harrison 1973: 816.

13 Kete 1994, Kean 1998: 88.

14 See Fudge 2002b: 3–18.

15 Watts 2000: 293, emphasis in original. For a parallel Foucauldian argument, see Rinfret 2009: 572.

16 Walton 1979: 226. Also see Keller 2009: 209–10, for a brief nod to the disciplining of animals in a wider discussion of the nineteenth-century 'regulated city'.

17 *The Times* 20 April, 1897.

18 Joyce 2003: 88.

that will not work (above all, Bill Sikes's criminal companion, Bull's-eye).[19] The streets of Dickens's London abound with dogs incompatible with the dictates of disciplinary modernity. So common are dogs in this Dickensian *eidometropolis* that the unreformed, undisciplined city sometimes verges on being given up to the animal altogether.[20] Thus, in one of his characteristic journalistic tramps around London's 'shy neighbourhoods', Dickens's uncommercial traveller visits and observes the lower animals of its back streets and by-ways, reporting on the low and immoral associates kept by goldfinches, cats and donkeys, their habits and habitations. The dogs of such neighbourhoods are likewise a mix of the honest and the disreputable, the industrious and the idle; but it is the latter that predominate, populating the city's streets with their vagabond human companions, and exhibiting an agency that inverts the accepted order whilst maintaining a focus on the low and the disreputable:

> We talk of men keeping dogs, but we might often talk more expressively of dogs keeping men. I know a bull-dog in a shy corner of Hammersmith who keeps a man. He keeps him up a yard, and makes him go to public-houses and lay wagers on him, and obliges him to lean against posts and look at him, and forces him to neglect work for him, and keeps him under rigid coercion.
>
> … There are a great many dogs in shy neighbourhoods, who keep boys. I have my eye on a mongrel in Somerstown who keeps three boys. He feigns that he can bring down sparrows, and unburrow rats (he can do neither), and he takes the boys out on sporting pretences into all sorts of suburban fields.
>
> … There is a dog residing in the Borough of Southwark who keeps a blind man. He may be seen, most days, in Oxford-street, haling the blind man away on expeditions wholly uncontemplated by, and unintelligible to, the man: wholly of the dog's conception and execution.
>
> … At a small butcher's, in a shy neighbourhood (there is no reason for suppressing the name; it is by Notting-hill, and gives upon the district called the Potteries), I know a shaggy black and white dog who keeps a drover. He is a dog of an easy disposition, and too frequently allows this drover to get drunk. On these occasions, it is the dog's custom to sit outside the public-house, keeping his eye on a few sheep, and thinking.
>
> … the dogs of shy neighbourhoods usually betray a slinking consciousness of being in poor circumstances – for the most part manifested in an aspect of anxiety, an awkwardness in their play, and a misgiving that somebody is going to harness them to something, to pick up a living…[21]

19 See, for instance, Kreilkamp 2007, and Moore 2007.
20 For Dickens's *eidometropolis*, see Tambling 2009.
21 Dickens 1860: 157–8.

This is a pretty and amusing vision, but though it deploys the topoi of conventional morality with affectionate satire, its image of indigent and workshy canines in charge of their supposed human masters carries a distinct disciplinary charge; it inevitably raises the necessity of rounding up and reforming society's strays and waifs, be they human or animal. The ambiguity bestowed by the tropes of class makes this animal satire a simultaneously symbolic and literal call for the disciplining of London's lower animals, beast and human. Such writings on the dogs of the street may be contrasted with Dickens's fervent advocacy of the virtues of home and domestic happiness, which finds characteristic expression in his support for the London Home for Lost Dogs of the Metropolis, later the Battersea Dogs Home, and aimed at 'the poor vagrant homeless curs that one sees looking out for a dinner in the gutter, or curled up in a doorway taking refuge from their troubles in sleep'.[22] In short, dogs (not to mention other street companions) are simply out of place if they are homeless – the demands of humanity as well as of hygiene and public order requires their removal to domestic spaces where they can be enclosed and disciplined.

Rabies, Hydrophobia and the Muzzling Controversy

The darkest side of this undisciplined canine metropolis was the fear of rabies and hydrophobia, and it is this that prompted the most drastic proposals for the control of animals in the streets in modern times. Rabies (and its human equivalent, hydrophobia) never represented quite the same public health threat as cholera or typhoid, but its cultural significance far outweighed its immediate epidemiological dangers. It had a demonstrably appalling significance for bourgeois society and its practices of petkeeping, in particular, and for the ideology of domesticity and domestication, given that a beloved family pet might be reduced to the grossest animality and a potential killer. This was the ultimate bourgeois nightmare: simply put, 'rabies revealed, didactically, the beastly nature of the domesticated beast'.[23] Culturally as well as biologically, the rabid dog threatened a breakdown of social and cultural order in both the streets and in the family home, and a reversion to animality that revealed the fragility of civil life itself. In her study of *la rage* in nineteenth-century France, Kathleen Kete notes without exaggeration that

> the fear of rabies lies at the intersection of the organizing themes of bourgeois life and can be read as an expression of unease about modern civilization and its tolls, about the uncertain conquest of culture over nature.[24]

22 Quoted in Kean 1998: 90.
23 Kete 1994: 112.
24 Kete 1994: 98.

In Britain, this concern about the threat of rabies can be traced from the 1830s to the end of the century, and indeed beyond this to our own day.[25] At no time was this ever simply an epidemiological issue, and from the beginning it was regarded as a species of moral contagion, inseparable in the 1830s from the wider question of the condition of England and its degraded and perhaps revolutionary poor: Neil Pemberton and Michael Worboys note that 'the main fear was less about rabies than a generalized anxiety about the moral status of the working class that was refracted through their dogs'.[26] The association between rabid dogs and the lowest and the criminal classes was strongly impressed in this era, when it was suggested that the dog-fighting proclivities of the lower classes uniquely contributed to the spread of the disease. One complainant to the Home Secretary, Robert Peel, insisted that

> 99 dogs out of 100 that are prowling about the public streets have either no owner or belong to paupers & thieves – The scenes about London when they congregate on Sundays for the purpose of dog fighting are a disgrace to a civilized country.[27]

Hilda Kean also notes that

> London was regarded as the Mecca of the dissolute, the lazy, the mendicant, the rough and the spendthrift. Stray or rabid dogs, like their human counterparts, epitomized this threatening presence which cried out for regulation – or destruction.[28]

At the beginning of this era of concern over rabid dogs, some looked to the imposition of 'an universal quarantine for Dogs within the Kingdom' in order to bring to an end what might providentially be looked back upon as the 'Era of Canine Madness'.[29] Quarantine, hearkening back to Foucault's medical model of the 'plague city', is a crude, blunt, and indeed ancient biopolitical technology, and a ready recourse where animal diseases are concerned.[30] But in the political climate of the 1830s, where the most stringent demands of medical policing were associated with tyranny and reaction, quarantine and its associated policy of muzzling dogs in the streets were never seriously contemplated by the Home Office.[31] In any event, the incidence of rabies declined in subsequent decades,

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25 See Walton 1979, Pemberton and Worboys 2007.

26 Pemberton and Worboys 2007: 26.

27 National Archives HO 44. 20. 236, 2 June, 1830.

28 Kean 1998: 91.

29 National Archives HO 44. 20. 195, 24 May 1830, 363 n.d. June 1830.

30 See Foucault 1991: 198 and 2003: 44–6.

31 For a particularly impressive discussion of quarantine and public health, and a critique of some of the assumptions in the historiography, see Bashford 2004.

its seeming amelioration coinciding with the rise of the early Victorian animal welfare movement and its more positive view of animal companions. Although the problem of stray dogs continued to attract attention, the specifically medical rationale for disciplining of animals lost some of its force in these years.

Panics over rabies, and calls for the regulation of dogs and their owners, resurfaced with a vengeance in the 1860s, however, and this time in the much more propitious era of state-sponsored sanitary reform and prophylaxis; the time was ripe for a more concerted intervention. From that date on rabies and hydrophobia were increasingly brought under the authority of medical science, subject, as Pemberton and Worboys have it, to a 'medical takeover', but it would still be police technologies rather than medical science that would be relied upon to combat the rabies menace.[32] As Harriet Ritvo argues:

> Defining rabid dogs as guilty rather than sick transformed an epizootic from a medical problem into a police problem. From this point of view the main job of disease control was intensive moral surveillance of the dog population, in order to purge it of the errant members who had deviated from standards of moral as well as physical soundness.[33]

Nor was it any longer simply the stray curs and the great unwashed of the metropolis that were the objects of concern; not just masterless dogs but pet dogs too, walking with their owners in the streets, were the subjects of this surveillance and control. Regulation of animals in public was to be ever more strictly enforced, in the name of public health and social hygiene, with epidemic threats the characteristic lever for bringing in increasingly disciplinary government; and the principal disciplinary technology in the later nineteenth-century era of animal regulation was the muzzle. In 1867 new powers in the metropolis allowed stray dogs to be rounded up by the police and muzzling orders to be imposed at whatever point epizootic rabies threatened. In 1871 the Dogs Act, the centrepiece of canine legislation, extended these metropolitan powers to other local authorities, in a characteristic example of enabling legislation; moreover, since rabies orders could be applied in an area even if the disease had not been formally identified, the legislation approved 'a dangerously vague form of control' that could be brought to bear indiscriminately upon the canine population, respectable or unrespectable.[34]

The muzzling policies that were the cornerstone of the state's fight against rabies for a generation were always deeply controversial. John Walton and Harriet Ritvo, and – very recently – Pemberton and Worboys have demonstrated how debates over rabies in Britain were conducted in the context of a struggle between a medical community more or less united in prioritizing public

32 Pemberton and Worboys 2007: 94.
33 Ritvo 1987: 176.
34 Kean 1998: 92.

health over the interests of private individuals and personal prejudices, and a community of dog owners and fanciers mobilized against what could be portrayed as unnecessary, authoritarian and fundamentally illiberal regulations. Hilda Kean has also emphasized the extent to which the control of the dog, under the impress of the rabies panics, became for the Victorians a political question of the first importance; the argument for state control was particularly troubling insofar as 'Dogs were part of the family and in intervening here the state was meddling in issues outside its remit'.[35] The contest takes its place alongside the debates over vaccination, vivisection and the Contagious Diseases Acts, in a larger struggle over the legitimacy of government intervention in the liberty of the subject. Some dog owners contended that the muzzling orders would be futile as well as cruel and an infringement of civil liberties. One contributor to the *Times* argued that 'The muzzling order will certainly tend to make dogs more irritable and snappish and render the public more liable to be bitten when the order is revoked'.[36] More beguilingly, Henry Attwell offered this case against the muzzle:

> The appearance of dogs with their mouths in cages is begetting among children – especially where there is no home pet to serve as a correcting influence – a fear which not only tends to prevent the growth of an affection for these lovable and loving animals, but is a source of actual danger. The familiarity with which young children are wont to treat dogs is so rarely resented by even the least socially inclined of their race that it is a question whether anything is gained by the carefulness with which some well-intentioned people caution their little ones not to touch strange animals. But, however this may be, there can be no doubt that to bring up a child to fear dogs is greatly to increase the risk of its being bitten. How muzzled dogs are turned to educational account by nurses – a bogey-loving race – may be gathered from a viva voce lesson at which I assisted a few days since. To the question of a six-year old child, 'Why do dogs wear those things on their mouths?' the answer was given 'Because they'd bite people and send them mad' – an answer that has no doubt been made to thousands of children by those upon whom devolves so large a part of the early culture of the rising generation.[37]

The noted theriophile and antivivisectionist, Frances Power Cobbe, concurred with the view that it was the very visibility of the muzzle that dehumanized and debased, but extended the argument further by characterizing the muzzle as not only inhumane but fundamentally illiberal, symbolizing as it did a political oppression that was incompatible with British values:

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35 Ibid.

36 Henry R. Farquarson, *The Times* 23 July, 1889.

37 *The Times* 23 August, 1886.

> My objection to muzzles is that they are teaching the British public to regard with suspicion, dread, and finally hatred animals whose attachment to mankind has been a source of pure and humanizing pleasure to millions, and which has formed a link (surely not undersigned by the Creator?) between our race and all other tribes of earth and air.[38]

And the *Ladies Kennel Gazette* similarly contested this breakdown in the body politic, condemning

> A tyranny – resourceful, vexatious, pettifogging and unmanly – which is visibly creeping and growing in the body politic, which emasculates the public spirit and which is a far greater danger than any physical malady. To inoculate a nation with cowardice, terror and fear is to injure it more than any bubonic plague which could be imported into it.[39]

The novelist Ouida, a noted advocate of better treatment of dogs, insisted that 'The muzzled dog is a dog constantly tormented and oppressed', and added for good measure that the muzzle would only further restrict the little liberty allowed to the dog: 'Dogs rarely at any time get enough air and exercise; the muzzle regulation makes this little become less, for owners do not like the trouble and torment involved in putting on the muzzle, and leave the poor animal at home, or tied up, rather than take him out with this absurd appendage'.[40]

The gendered nature of these responses is particularly notable, and has attracted a great deal of attention, but it is not simply a womanly sentimentality – as their opponents' chided – that lay behind this opposition to state-sanctioned muzzling. Such advocates consistently raised the theme of the state oppression of the dog and its owners. The muzzling controversies of the later nineteenth century generated political as well as biopolitical rationales; the techniques and technologies associated with the later nineteenth-century fight against rabies and hydrophobia never lost their political associations, not even with the advent of Pasteur's laboratory identification of the rabies pathogen and the breakthrough of vaccination. Simply put, muzzling was associated by its opponents with authoritarianism and illiberalism, with scientific materialism and masculinism, and projected as alien to British culture and values. Given that fear of Prussian-ism was endemic in British society, it was perhaps rather impolitic for one 'hydrophobist', the Honorary Secretary of the Society for the Prevention of Hydrophobia, to assure readers of the *Times* that it was possible for dogs to be muzzled in the attempt to stamp out rabies, by pointing to the favourable statistics coming from Prussia as to the effects of muzzling.[41] For all

38 Cited in Pemberton and Worboys 2007: 142.

39 *Ladies Kennel Gazette* September 1897: 103, cited in Pemberton and Worboys 2007: 155.

40 Ouida 1897: 110–11.

41 *The Times* 7 October, 1889.

Figure 9.1 'New Year's Day with the dogs – within and without the Pale'
Source: *Daily Graphic* 2 January, 1891

that, the muzzlers may be seen as largely having had their way in the later nineteenth century. Indeed, the combination of muzzling with national quarantine measures has been seen as ultimately successful, with Britain being declared disease-free in the early years of the twentieth century. The victory over rabies might be seen, not only at the time but also in hindsight, as a victory over the indisciplined dog.

Licensing, the Lead and the Liberal City

Should we see the rabies/hydrophobia panics and the history of the muzzle as a triumph for disciplining of animals in the Victorian city, however? Whilst muzzling appears to represent one of the most stringent attempts to restrict the movements and the actions of dogs in public space, we should see this, at the very least, as a more compromised and ambiguous history. Firstly, and here I again rely on Pemberton and Worboys' authoritative recent account, whilst the 'official line, since largely accepted by historians' was that the eradication of rabies was directly due to the enforcement of muzzling, the muzzle was in all likelihood ineffective and cumbersome. Muzzling orders were only sporadically enforced even in the metropolis – allowed to lapse, revoked, and revised several times before all muzzling restrictions were finally lifted in 1899, after the seeming eradication of rabies in the capital. Nor was muzzling ever universal (as it was in Ireland), as the various powers and orders created a patchwork geography of enforcement, itself raising the spectre of rabid dogs moving from 'controlled' to 'uncontrolled' districts. There was always ambiguity about the

Figure 9.2 ‘New Year’s Day with the dogs: an indignation meeting in the country’

Source: *Daily Graphic* 1 January, 1891

extent to which country dogs could be subjected to such orders, and there was a brief experiment by the Board of Agriculture of extending muzzling orders beyond London to the Home Counties in 1889 was quickly revoked a year later. But the return to the boundaries of the metropolitan police district, within and without the Pale as the *Daily Graphic* had it, simply continued to affirm the seemingly arbitrary enforcement of muzzling (Figures 9.1 and 9.2).

The arbitrariness of these restrictions was pointed out by the *Graphic*’s canine commentary on the end of the muzzling order in London, whilst being still in force in the rest of the country: as ‘Village Tyke’ says to the city-dwelling ‘Dachshund, Esq.’:

> The ‘House’ can’t know of the state of things. Just get your guvnor to ask if they think it is a case of what is called ‘British love of fair play’, to let some dogs go where they like, if they only wear a collar, while all the rest are kept caged up with muzzles.[42]

42 A dog on muzzling – 1, *Daily Graphic* 1 January, 1891: 4, 2 January, 1891: 5.

THE REPEAL OF THE MUZZLING ORDER: COLLARS AND ADDRESSES.—AN INCIDENT OF "EMANCIPATION DAY."

Figure 9.3 'The repeal of the muzzling order'

Source: *Daily Graphic* 5 January, 1891

Dog advocates returned time and again to the inconsistency and arbitrariness of the blanket restriction of all dogs in one area compared with the lack of control altogether in another. We may also still be able recover the force of the sentiment that led some dog owners to see the rescinding of muzzling orders as an instance of 'emancipation'. On the occasion of the revoking of the Board of Agriculture's muzzling order, for instance, at the beginning of the year of 1891, a small procession in Hyde Park was reported by the *Daily Graphic* in celebration (Figure 9.3):

> The demonstration was organized by a gentleman who is the happy father – we beg pardon, we mean the fortunate proprietor – of five: a black retriever, a spaniel, and three fox terriers. On the 1st January, 1891, that gentleman took his happy family for a walk. The dogs wore their muzzle no longer fastened cruelly upon their mouths, but dangling freely from their collars; while the retriever wore, also, suspended at his throat, a ticket bearing the significant superscription 'Emancipation Day'.[43]

Secondly, consider the ambiguity over the requirement that dogs be muzzled built into the dog control legislation. Whilst the various muzzling orders were

43 *Daily Graphic* 5 January, 1891: 4.

only temporary measures appropriate for states of alarm over hydrophobia, the legislative context was largely set by the earlier Dogs Act of 1871, which was interpreted by many as requiring that a dog in public should be *either* muzzled *or* led, *or* that it should be 'under proper control'. But what constituted the proper control of a dog was, as magistrates found, always at best a moot point. Whilst policemen and park keepers often interpreted this as a requirement for *either* the muzzle *or* the leash, dog owners might and did think differently. For instance, in 1886, a George Roberts was brought before Highgate magistrates for allowing a dog to be at large and not under proper control in a public thoroughfare. The point was that the dog was neither muzzled nor led; it was, according to the police constable, 'running first on one side and then on the other, and then back to [the] defendant'. The magistrate, however, a Dr Orton, asked specifically about the requirement of 'proper control', asking the police constable, asking the PC: 'You mean to say that if a dog is walking by the side of the owner you take that?' In the end, a majority verdict of JPs accepted that the dog *was* under proper control and the summons was dismissed.[44] In the same year, a Mr Henry Laylands was also summonsed for having an uncontrolled St Bernard at large in the Belsize Road, South Hampstead – a dog 'without a muzzle, collar, or leader' as it was reported. Police Constable Scarlett stated that he asked Mr Laylands whether he was aware that the dog was not muzzled, and told him that the dog ought to be led. After several attempts the constable managed to put a string round the dog's neck, and led it to the station. But the defendant claimed that the dog had been under his control the whole time: 'He had had the animal for seven years, and it was perfectly harmless, and had never attempted to bite anybody'. The magistrate was compelled to caution Mr Laylands, but said that he was of opinion that the dog was indeed under proper control (within the meaning of the Dogs Act of 1871) and dismissed the summons, 'although very reluctantly'.[45]

One case that ended up in a different result was that of a Mr William Rogers, who was repeatedly summonsed for allowing his dog to be at large and not under proper control in Kensington Gardens. When instructed that he must either muzzle or lead his dog, Mr Rogers' response was that 'he should do nothing of the kind, because the animal was under proper control': furthermore,

> His dog was so quiet that it went to the bathing ground among the children, and nobody was afraid of it, and it had never bitten any one. The existing order of regulation with respect to dogs was very perplexing. A man must lead or muzzle his dog when walking down the Strand, but directly he got to where Temple-bar used to be, he could let it run loose, simply because he was then in the City. Six or seven magistrates had decided in favour of his reading of the law, and a number of others held an opposite opinion, so that really no-one knew how to act.

44 *The Times* 10 August, 1886.
45 *The Times* 11 January, 1886.

He was fined 2s,6d. and costs. Only a few days earlier, on a similar charge, Rogers had retorted that

> When a dog had a 'lead' on it was in a state of captivity, and to use a muzzle was cruel, but when walking at the feet of its master, ready to obey his beck and call, it was then under control … The control that the Act required was such as a husband had over his wife, a father had over his children, or a pedagogue had over his pupils. (Laughter.) His dog had never bitten any one and was under perfect control. It was a small animal, but was very clever. It would fetch his letters, run for two ounces of beef, and get a shilling out of a pail of water. (Laughter.)

On this occasion Mr Mansfield had agreed that the interpretation of the words 'reasonable control' was a moot point, but fined Rogers 3s. with costs nonetheless.[46] It was only clear that the law was unclear, and one can only sympathize with the Middlesex magistrate who wrote to *The Times* to ask to have the question of what is 'proper control' determined by a higher authority.[47] The muzzle was not an uncontested symbol of control and discipline of humans and beasts.

Thirdly, we may argue the point, further, that the leash and the licence were not so much adjuncts to the muzzle as direct alternatives to it. The muzzle was typically seen as cruel and unnecessary, and many within the most pragmatic wing of the dog lobby turned to the licence and the dog lead as a viable and legitimate requirement. Not all dog owners accepted the lead, as the previous quotations demonstrate, but as an alternative to the muzzle the dog lead and the collar were easily adopted by visibly 'responsible' Victorian dog owners as a demonstration of their control and compliance. In terms of licensing, too, a system of registration was widely canvassed as an effective and humane, and largely unobjectionable, system of ensuring the responsibility of dog owners: writing in response to the President of the Board of Agriculture's support for muzzling orders, one letter-writer argued that 'If he will take up the question of a systematic licensing and registration of dogs and their owners, he will be doing far more towards the control of hydrophobia than can ever be accomplished by the present vexatious regulations'.[48] The point here was also that attention and supervision were directed at the owners of dogs, rather than coercion being imposed on the dogs themselves. We have a model of responsibility being constructed, in which the presence of dogs and their owners in public space was made increasingly respectable. Not everyone saw this as liberal – 'Better the muzzle for six months than this miserable foreign plan, with its attendant

46 *The Times* 21 and 28 August, 1886.
47 *The Times* 23 August, 1886.
48 F.R.S., *The Times* 15 January, 1890.

degrading police *espionage*' argued one dog-lover.[49] But this is, in essence, a liberal alternative to the disciplinary coercion represented by the muzzle. This alternative was predicated on the encouragement of dog owners to take greater responsibility for their animals: as E.D. Vesey, the Secretary of the Dog Owners' Protection Association put it: 'what we want is effective personal supervision of their dogs by dog owners, and any measure which is calculated to bring home responsibility to the owner of a dog is at least worthy of being discussed'.[50] Again we come back to the responsibilization of dog owners rather than to the direct restriction of their animals: the construction of dog owning citizens in a liberal city.

The lead – and the collar the licence – should therefore be interpreted as the technologies of a liberal alternative to more intrusive systems of discipline and control. We have I think something like the normalization of the dog/walker pairing, and its representation as the sign of the respectable and responsible pet owning citizen. Indeed, virtually all commentators on the muzzling controversies have pointed out that the focus was as much about demonstrating the discipline of the dogs' owners than about attempting to eradicate rabies directly, even if this could be achieved by such policies and technologies. Harriet Ritvo has argued for instance that muzzling orders represented a call for a discipline of both dogs and their owners, and suggested that it was as much about the image of order as the efficacy of medical control:

> muzzling demonstrated the power of governmental authorities to interfere in ordinary life and the violence deemed necessary to suppress some kind of threatening behaviour. Urban streets full of muzzled dogs suggested not only the docility of both canines and humans, but also the omnipresence of regulation, which restricted the freedom of owners as well as that of their animals.[51]

Pemberton and Worboys have similarly noted that many defenders of the muzzle felt that it acted as 'a badge, indicating a well-cared-for dog and responsible owner, allowing the police to concentrate on the unmuzzled strays of thoughtless owners'.[52] In their considered view,

> The power of muzzling was less a direct method of preventing rabid dogs biting than a reassuring symbol of administrative control of the problem, and distinguishing animals that were disciplined and ordered from those that were not.[53]

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49 Cited in Walton 1979: 232.
50 *The Times* 3 October, 1889.
51 Ritvo 1987: 192
52 Pemberton and Worboys 2007: 135
53 Ibid: 162.

Figure 9.4 'Drink, puppy, drink'

Source: *Daily Graphic* 8 April, 1891

The reduction in the incidence of rabies – and the ultimate victory over the disease – was not the result of muzzling *per se* but owes more to a range of factors including the promotion of more disciplined pet owners: 'The government was helped by the relentless campaigns to clear the streets of stray dogs and the promotion of responsible ownership by animal welfare organizations, the new pet supply industries, and popular images of the loyal, affectionate domestic pet'.[54] We should not see muzzling, and quarantine, as technical victories, sternly enforced in the face of sentimental opposition; rather, it is the compromises with the dog lobby that are more likely to have contributed to the eradication of epidemic rabies from the geo-body of the nation. We should see the attempt to muzzle dogs as an attempt not to discipline animals directly but rather to conduct the conduct of their owners; following Patrick Joyce, whose earlier comment on the disciplining of pets we may thus follow through to its conclusion, we may argue that these policies owe a great deal more to the governmentality of the liberal city than to any more direct, coercive and disciplinary form of intervention.[55]

It is possible, therefore, without disagreeing with the general conclusions of previous accounts, to argue for a stronger narrative of inclusion and even empowerment of animals and their owners in the public space of the late

54 Ibid: 162.

55 Joyce 2003.

Victorian city. We may also, finally, point to the ways in which public space was remodelled in the interests of dog owners and their animals. One notable example of this is the provision of dog troughs in public parks and public highways (see Figure 9.4).

This is an outgrowth of the temperance-based campaign for the availability of fresh water as an alternative to beer and spirits, of course, but it should not be forgotten that this campaign was also intended to relieve the suffering of draught animals, drovers' animals, and, ultimately, pets. The Metropolitan Drinking Fountain and Cattle Trough Association was in correspondence with the London parks authorities, for instance, over the installation not just of drinking fountains, but also of dog troughs, and note here the words of M.W. Milton, Secretary of the Society, in the flyer and subscription request:

> If it had not been for the operations of this Society, thousands of people, young and old – mechanics, labourers, hawkers, flower-girls, messengers, telegraph-boys, and others who now quench their thirst at the Fountains, would probably be driven to the public-house, and if it were not for the Troughs, the amount of suffering amongst the multitude of dumb animals continually crowding round them would be inconceivable.
>
> The Society has done so much to promote habits of temperance amongst out itinerant and working population, and to alleviate the sufferings of animals from thirst as they traverse our streets, that the Committee trust its work will not be permitted to languish for lack of funds.[56]

We can note that the Association continued to sponsor the erection of dog troughs well into the twentieth century, and in the 1930s, for instance, it offered to supply dog troughs at Police Stations if the Police desired. The Association had in mind troughs in the public highway outside the doors of premises (rather than the supply of troughs for the use of stray dogs in Station yards); in other words, and I think the distinction is notable, this was directed at respectable canine citizens than at impounded strays.[57] What this small example suggests, I think, is again something of the way in which the city was humanized for dogs (if this is not a contradiction in terms). Perhaps we should say: humanized for dog owners.[58] Certainly this made the practice of dog walking easier, but arguably more important are the ways in which such movements countered the unease about the public dog and contributed to the normalizing of the dog/walker hybrid. In these various ways, a certain kind of dispensation was allowed to both the dog and the owner, allowing animals, under proper supervision of course, into public space, and even encouraging them as part of the modern city.

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56 National Archives, WORK 16/138.

57 National Archives, MEPO 2/3978.

58 See also Howell 2002.

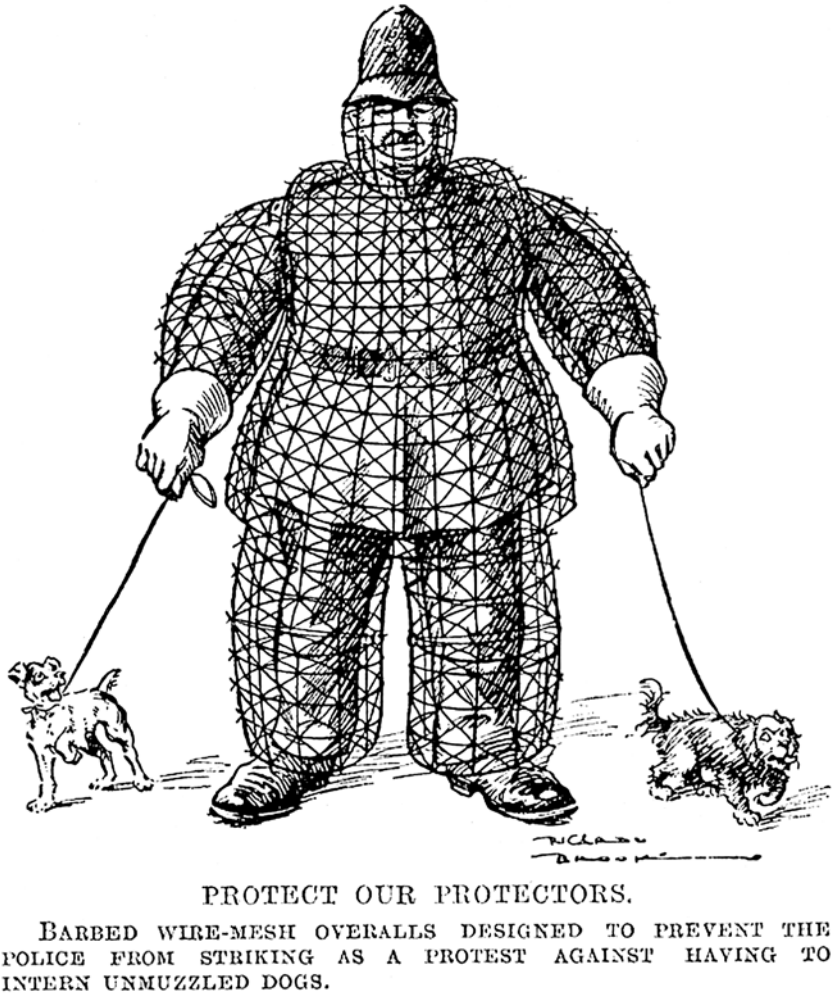

Figure 9.5 'Protect our protectors'

Source: *Punch* 14 May, 1919

Conclusions

From the muzzle to the leash, then. From muzzling, direct discipline, and exclusion to leashing, regulatory governance, and inclusion. Rather than think of these elements in an undifferentiated story about the restriction of the animal in the modern city, perhaps we can think of these as two distinct series, distinctive in their understanding of the place of dogs and their owners in public space. In any case, I have argued ultimately against any suggestion that moral and medical

policing were victorious in their positioning of the dog as a public menace. In fact, I would venture to argue that it is the dog-lover that emerges victorious in this struggle. What we have here is something like the domestication of public space. Just as animals were welcomed into the private space of the home, in the form of the 'pet', so too were animals allowed to be properly public in a domesticated and liberal public space. Animals could have their identity asserted as 'pets' – albeit so long as they had the collar and the leash and were under proper control, and, as Figure 9.5 suggests, it was the police who ended up, as it were, muzzled. The animals themselves took their place in the free, 'liberal' spaces of the modern city.

This is one reading of this history of human-animal relations, at least. But we may go a little further still, however, and make a space for the dog not just as a sort of liberal political subject, merely allowed into public space, but perhaps as an agent in its own right. Joel Hribal has recently complained of the dominant strains in the history of animals that

> The animals are not seen as agents. They are not active, as labourers, prisoners, or resistors. Rather, the animals are presented as static characters that have, over time, been used, displayed, and abused by humans. They emerge as objects – empty of any real substance.[59]

This may be a too harsh judgement on an emergent discipline with diverse methodologies, but it is still a useful reminder that we should acknowledge dogs in the words of Laurier et al. as 'competent, skillful, playful, and often infinitely patient companions', with their own interests, aims and objectives.[60] At the risk of inviting further scepticism from the uncommitted, the recently promoted concept of *hudography* serves a useful purpose in support of the proposition that dog-walking be acknowledged as a specific kind of modern practice, one that is far from characterizable simply in terms of discipline and disciplinary technologies. Hudography and hudographies are helpful concepts in gesturing to the entangled spatialities of dogs and humans and the hybrid social world to whose creation both species may be said to have contributed; they are clumsy terms, but they do allow for an anti-anthropocentric and anti-foundationalist account of human-animal relations – one in fact that calls into question the transcendent existence of these 'nature'/'culture' categories themselves. The work of Donna Haraway and others on the relationship between, or the knotting of, human beings and companion species is the central resource here.[61] By focussing on what exactly happens when species meet, by directing attention away from the tropes of human disciplining of animals and towards stories of 'co-habitation, co-evolution, and embodied cross-species sociality', Haraway suggests (among other things) the local, site-specific, contingent and material reproduction of what is 'animal', 'natural', 'human' and

59 Hribal 2007: 102.

60 Laurier et al. 2006: 19.

61 See Haraway 2003, and the extended argument in Haraway 2008.

'cultural'.[62] Instead of starting with abstractions like 'nature' and 'culture', attention to the messy modalities of a life shared with other species invites an awareness of our own contingent and situated 'animality'. It also offers an alternative to a view of companion others that is reduced to the predominantly anthropocentric accounts of discipline. What we do when we walk the dog is not simply reduce it to a disciplined object; rather, we engage with it, 'bonded in significant otherness', and we are disciplined and interpellated by them as well as the other way round.[63] Emma Mason has written recently in this vein that

> Dog training in this context becomes paramount, an act of love that makes the world in which the companion species resides a liveable one, wherein humans and dogs respond obediently to each other, with respect and with love.[64]

In a paradoxical way, therefore, the history that I have briefly and haltingly narrated, about the humanizing of the city for dog-walking, depends upon this recognition of our cohabitation and cross-species sociality with animal others, and on the positive encouragement of animal others in the heart of the metropolis that has resulted.

62 Haraway 2003: 4.
63 Haraway 2003: 16.
64 Mason 2008: 297.

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